



Sun Cluster Data Service for SWIFTAlliance Access Guide for Solaris OS

SPARC Platform Edition



Sun Microsystems, Inc.
4150 Network Circle
Santa Clara, CA 95054
U.S.A.

Part No: 819-1086
June 2007

Copyright 2007 Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 U.S.A. All rights reserved.

This product or document is protected by copyright and 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, docs.sun.com, AnswerBook, AnswerBook2, and Solaris are trademarks or registered trademarks 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 SunTM 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.

U.S. Government Rights – Commercial software. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

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 2007 Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 U.S.A. Tous droits réservés.

Ce produit ou document est protégé par un copyright et 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 du système 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, le logo Sun, docs.sun.com, AnswerBook, AnswerBook2, et Solaris sont des marques de fabrique ou des marques déposées, 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.

CETTE PUBLICATION EST FOURNIE "EN L'ETAT" ET AUCUNE GARANTIE, EXPRESSE OU IMPLICITE, N'EST ACCORDEE, Y COMPRIS DES GARANTIES CONCERNANT LA VALEUR MARCHANDE, L'APTITUDE DE LA PUBLICATION A REpondre A UNE UTILISATION PARTICULIERE, OU LE FAIT QU'ELLE NE SOIT PAS CONTREFAISANTE DE PRODUIT DE TIERS. CE DENI DE GARANTIE NE S'APPLIQUERAIT PAS, DANS LA MESURE OU IL SERAIT TENU JURIDIQUEMENT NUL ET NON AVENU.

Contents

Preface	5
Installing and Configuring Sun Cluster HA for SWIFTAlliance Access	11
Overview of the tasks needed to install and configure Sun Cluster data service for SWIFTAlliance Access.	11
Sun Cluster HA for SWIFTAlliance Access Overview	12
Planning the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration	13
Configuration Restrictions	13
Configuration Requirements	14
Installing and Configuring SWIFTAlliance Access	15
How to Install and Configure SWIFTAlliance Access	15
Verifying the Installation and Configuration of SWIFTAlliance Access	18
▼ How to Verify the Installation and Configuration of SWIFTAlliance Access	18
Installing the Sun Cluster HA for SWIFTAlliance Access	19
▼ How to Install Sun Cluster HA for SWIFTAlliance Access Packages Using the Web Start Program	20
Registering and Configuring Sun Cluster HA for SWIFTAlliance Access	21
▼ How to Register and Configure Sun Cluster HA for SWIFTAlliance Access as a Failover Service	21
Verifying the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration	22
▼ How to Verify the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration	22
Understanding the Sun Cluster HA for SWIFTAlliance Access Fault Monitor	23
Resource Properties	23
Probing Algorithm and Functionality	23
Debug Sun Cluster HA for SWIFTAlliance Access	24
▼ How to turn on debugging for Sun Cluster HA for SWIFTAlliance Access	24

Index27

Preface

Sun Cluster Data Service for SWIFTAlliance Access Guide for Solaris OS explains how to install and configure Sun™ Cluster HA for SWIFTAlliance Access.

This document is intended for system administrators with extensive knowledge of Sun software and hardware. Do not use this document as a planning or presales guide. Before reading this document, you should have already determined your system requirements and purchased the appropriate equipment and software.

The instructions in this document assume knowledge of the Solaris™ Operating System and expertise with the volume manager software that is used with Sun Cluster.

UNIX Commands

This document contains information about commands that are specific to installing and configuring Sun Cluster data services. The document does *not* contain comprehensive information about basic UNIX® commands and procedures, such as shutting down the system, booting the system, and configuring devices. Information about basic UNIX commands and procedures is available from the following sources:

- Online documentation for the Solaris Operating System
- Solaris Operating System man pages
- Other software documentation that you received with your system

Typographic Conventions

The following table describes the typographic changes that are used in this book.

TABLE P-1 Typographic Conventions

Typeface or Symbol	Meaning	Example
AaBbCc123	The names of commands, files, and directories, and onscreen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name%</code> you have mail.
AaBbCc123	What you type, contrasted with onscreen computer output	<code>machine_name% su</code> Password:
<i>AaBbCc123</i>	Command-line placeholder: replace with a real name or value	The command to remove a file is <code>rm filename</code> .
<i>AaBbCc123</i>	Book titles, new terms, and terms to be emphasized	Read Chapter 6 in the <i>User's Guide</i> . Perform a <i>patch analysis</i> . Do <i>not</i> save the file. [Note that some emphasized items appear bold online.]

Shell Prompts in Command Examples

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

TABLE P-2 Shell Prompts

Shell	Prompt
C shell prompt	<code>machine_name%</code>
C shell superuser prompt	<code>machine_name#</code>
Bourne shell and Korn shell prompt	<code>\$</code>
Bourne shell and Korn shell superuser prompt	<code>#</code>

Related Documentation

Information about related Sun Cluster topics is available in the documentation that is listed in the following table. All Sun Cluster documentation is available at <http://docs.sun.com>.

Topic	Documentation
Data service administration	<i>Sun Cluster Data Services Planning and Administration Guide for Solaris OS</i> Individual data service guides
Concepts	<i>Sun Cluster Concepts Guide for Solaris OS</i>
Overview	<i>Sun Cluster Overview for Solaris OS</i>
Software installation	<i>Sun Cluster Software Installation Guide for Solaris OS</i>
System administration	<i>Sun Cluster System Administration Guide for Solaris OS</i>
Hardware administration	<i>Sun Cluster 3.0-3.1 Hardware Administration Manual for Solaris OS</i> Individual hardware administration guides
Data service development	<i>Sun Cluster Data Services Developer's Guide for Solaris OS</i>
Error messages	<i>Sun Cluster Error Messages Guide for Solaris OS</i>
Command and function reference	<i>Sun Cluster Reference Manual for Solaris OS</i>

For a complete list of Sun Cluster documentation, see the release notes for your release of Sun Cluster at <http://docs.sun.com>.

Related Third-Party Web Site References

Third-party URLs that are referenced in this document provide additional related information.

Note – Sun is not responsible for the availability of third-party web sites mentioned in this document. Sun does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Sun will not be responsible or liable for any actual or alleged damage or loss caused or alleged to be caused by or in connection with use of or reliance on any such content, goods, or services that are available on or through such sites or resources.

Documentation, Support, and Training

Sun Function	URL	Description
Documentation	http://www.sun.com/documentation/	Download PDF and HTML documents, and order printed documents
Support and Training	http://www.sun.com/supporttraining/	Obtain technical support, download patches, and learn about Sun courses

Product Training

Sun Microsystems offers training in many Sun technologies through a variety of instructor-led courses and self-paced courses. For information about the training courses that Sun offers and to enroll in a class, visit Sun Microsystems Training at <http://training.sun.com/>.

Getting Help

If you have problems installing or using Sun Cluster, 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 Solaris Operating System (for example, Solaris 8)
- The release number of Sun Cluster (for example, Sun Cluster 3.0)

Use the following commands to gather information about each node on your system for your service provider.

Command	Function
<code>prtconf -v</code>	Displays the size of the system memory and reports information about peripheral devices
<code>psrinfo -v</code>	Displays information about processors
<code>showrev -p</code>	Reports which patches are installed
<code>SPARC: prtdiag -v</code>	Displays system diagnostic information

Command	Function
<code>scinstall -pv</code>	Displays Sun Cluster release and package version information

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

Installing and Configuring Sun Cluster HA for SWIFTAlliance Access

This Chapter explains how to install and configure Sun Cluster data service for SWIFTAlliance Access.

This Chapter contains the following sections.

- “Overview of the tasks needed to install and configure Sun Cluster data service for SWIFTAlliance Access.” on page 11
- “Sun Cluster HA for SWIFTAlliance Access Overview” on page 12
- “Planning the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration” on page 13
- “Installing and Configuring SWIFTAlliance Access” on page 15
- “Verifying the Installation and Configuration of SWIFTAlliance Access” on page 18
- “Installing the Sun Cluster HA for SWIFTAlliance Access” on page 19
- “Registering and Configuring Sun Cluster HA for SWIFTAlliance Access” on page 21
- “Verifying the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration” on page 22
- “Understanding the Sun Cluster HA for SWIFTAlliance Access Fault Monitor” on page 23
- “Debug Sun Cluster HA for SWIFTAlliance Access” on page 24

Overview of the tasks needed to install and configure Sun Cluster data service for SWIFTAlliance Access.

Table 1 Lists the tasks for installing and configuring Sun Cluster HA for SWIFTAlliance Access. Perform these tasks in the order that they are listed.

TABLE 1 Task Map: Installing and Configuring Sun Cluster HA for SWIFTAlliance Access

Task	For Instructions, Go To
1. Plan the installation.	“Planning the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration” on page 13
2. Install Sun Cluster HA for SWIFTAlliance Access Packages.	“How to Install and Configure SWIFTAlliance Access” on page 15
3. Verify installation and configuration.	“Verifying the Installation and Configuration of SWIFTAlliance Access” on page 18
4. Register and Configure Sun Cluster HA for SWIFTAlliance Access.	“Registering and Configuring Sun Cluster HA for SWIFTAlliance Access” on page 21
5. Verify Sun Cluster HA for SWIFTAlliance Access Installation and Configuration.	“Verifying the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration” on page 22
6. Understand Sun Cluster HA for SWIFTAlliance Access fault monitor.	“Understanding the Sun Cluster HA for SWIFTAlliance Access Fault Monitor” on page 23
7. Debug Sun Cluster HA for SWIFTAlliance Access.	“Debug Sun Cluster HA for SWIFTAlliance Access” on page 24

Sun Cluster HA for SWIFTAlliance Access Overview

The HA agent is written to work with SWIFTAlliance Access versions 5.5, 5.9, and 6.0. IBM DCE version 3.2 is not used anymore by SWIFTAlliance Access 5.9 and later, and must only be installed for SWIFTAlliance Access 5.5. SWIFTAlliance Access™ is a trademark of SWIFT.

The Sun Cluster HA for SWIFTAlliance Access data service provides a mechanism for orderly startup, shutdown, fault monitoring, and automatic takeover of the Sun Cluster service. The Sun Cluster components protected by the Sun Cluster HA for SWIFTAlliance Access data service are the following.

TABLE 2 Protection of Components

Component	Protected by
DCE daemon	Sun Cluster HA for SWIFTAlliance Access (version 5.5 only)
SWIFTAlliance Access	Sun Cluster HA for SWIFTAlliance Access

Note – By default the HA agent provides a fault monitor for the DCE component only when using the SWIFTAlliance Access 5.5. The fault monitoring for SWIFTAlliance Access is switched off by default. If the SWIFTAlliance Access application fails, the agent will not restart the SWIFTAlliance Access application automatically. This behavior was explicitly requested by SWIFT. It will allow you to operate the application in a way that the probe does not interfere with the normal behavior of some SWIFTAlliance Access features like:

- operator manually triggering the SWIFTAlliance Access restart function , for example, to run SWIFTAlliance Access in housekeeping mode.
- automatic or scheduled SWIFTAlliance Access restart, for example, to run database backup and other maintenance or end-of-day processes.
- any graceful SWIFTAlliance Access restart or recovery, in case of a SWIFTAlliance Access transient local error.

The HA agent provides the start, stop, takeover, and switchover functionality. This means that when a node fails, the other node will automatically start the SWIFTAlliance Access application. The HA agent also provides an option to turn on fault monitoring for SWIFTAlliance Access on registration time. However, this option is not recommended by SWIFT.

Planning the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration

This section contains the information you need to plan your Sun Cluster HA for SWIFTAlliance Access installation and configuration.

Configuration Restrictions

This section provides a list of software and hardware configuration restrictions that apply to Sun Cluster HA for SWIFTAlliance Access only.



Caution – Your data service configuration might not be supported if you do not observe these restrictions.

- You can configure the Sun Cluster HA for SWIFTAlliance Access *only as a HA agent and not as a scalable agent*.
- You can install the SWIFTAlliance Access software on a global file system. Best practice is to use a failover file system. For SWIFTAlliance Access 5.5, you must install the IBM DCE software on local storage.

- Only one SWIFTAlliance Access instance is supported by this agent.

For restrictions that apply to all data services, see the *Sun Cluster Release Notes*.

Configuration Requirements

These requirements apply to Sun Cluster HA for SWIFTAlliance Access only. You must meet these requirements before you proceed with your Sun Cluster HA for SWIFTAlliance Access installation and configuration. Follow the SWIFTAlliance Access installation guide for the installation of the mandatory patch levels and the installation of the software itself.



Caution – Your data service configuration might not be supported if you do not adhere to these requirements.

- **Sun Cluster components and their dependencies** —Configure the Sun Cluster HA for SWIFTAlliance Access data service to protect a Sun Cluster instance and its respective components. These components, and their dependencies, are briefly described below.

Component	Description
DCE daemon	→ <i>SUNW.LogicalHost</i> resource
SWIFTAlliance Access	→ <i>SUNW.LogicalHost</i> resource → <i>SUNW.HAStoragePlus</i> resource The <i>SUNW.HAStoragePlus</i> resource manages the SWIFTAlliance Access System Mount points and ensures that Sun Cluster is not started until these are mounted. → <i>DCE daemon (version 5.5 only)</i>

The Sun Cluster component has two configuration and registration files under `/opt/SUNWscsaa/util`. These files allow you to register the Sun Cluster component with Sun Cluster.

Within these files, the appropriate dependencies have already been defined. You must update the `saa_config` file before you run the `saa_register` script.

Installing and Configuring SWIFTAlliance Access

This section contains the procedures you need to install and configure SWIFTAlliance Access.

Throughout the following sections, references will be made to certain directories for SWIFTAlliance Access, which can be selected by the user.

How to Install and Configure SWIFTAlliance Access

Use this procedure to install and configure SWIFTAlliance Access.

1. Create the resources for SWIFTAlliance Access.

- **Create a resource group for SWIFTAlliance Access:**

```
# scrgadm -a -g swift-rg
```

- **Create a logical host** – Add the hostname and IP address in the `/etc/inet/hosts` file on both cluster nodes. Register the logical host and add it to the resource group.

```
# scrgadm -a -L -g swift-rg -j swift-saa-lh-rs -l swift-lh
```

- **Create the device group and filesystem** —See *Sun Cluster 3.1 Software Installation Guide* for instructions on how to create global file systems.
- **Create an HAStoragePlus resource** – Although one can use global storage, it is recommended to create a HAStoragePlus failover resource to contain the SWIFTAlliance Access application and configuration data.

In the example, we use `/global/saadg/alliance` as the path, but you can choose the location.

```
# scrgadm -a -g swift-rg \
-j swift-ds \
-t SUNW.HAStoragePlus \
-x FilesystemMountPoints=/global/saadg/alliance
```

- **Bring the resource group online**

```
# scswitch -Z -g swift-rg
```

- **Create configuration directory** —to hold SWIFTAlliance Access information and create a link from `/usr`

```
# cd /global/saadg/alliance
```

```
# mkdir swa
```

```
# ln -s /global/saadg/alliance/swa /usr/swa
```

2. Install IBM DCE client software on all the nodes.



Caution – This is valid only for SWIFTAlliance Access versions below 5.9 and should only be installed when needed.

Skip this step if you are using SWIFTAlliance Access version 5.9 or 6.0.

IBM DCE client software is a prerequisite for SWIFTAlliance Access 5.5. It must be installed and configured before the SWIFTAlliance Access application.

- **Install IBM DCE client software.** Use local disks to install this software. The software comes in Sun package format (IDCEclnt). Because the installed files will reside at various locations on your system, it is not practical to have this installed on global file systems. Install this software on both cluster nodes.

```
# pkgadd -d ./IDCEclnt.pkg
```

- **Configure DCE client RPC.**

```
# /opt/dcelocal/tcl/config.dce -cell_name swift -dce_hostname swift-lh RPC
```

- **Test DCE.**

Run the tests on both nodes.

```
# /opt/dcelocal/tcl/start.dce
```

Verify that the dced daemon is running.

```
# /opt/dcelocal/tcl/stop.dce
```

3. Install SWIFTAlliance Access software.

- Create the users `all_adm`, `all_usr` and the group `alliance` up-front on all cluster nodes with the same user id and group id.
- On Solaris 10: Create a project called `swift` and assign the users `all_adm` and `all_usr` to it.

```
# projadd -U all_adm,all_usr swift
```

- On Solaris 10: Set the values of the resource controls for the project `swift`:

```
# projmod -s -K "project.max-sem-ids=(privileged,128,deny)" swift
```

```
# projmod -s -K "project.max-sem-nsems=(privileged,512,deny)" swift
```

```
# projmod -s -K "project.max-sem-ops=(privileged,512,deny)" swift
```

```
# projmod -s -K "project.max-shm-memory=(privileged,4294967295,deny)" swift
```



```
# projmod -s -K "project.max-shm-ids=(privileged,128,deny)" swift
# projmod -s -K "project.max-msg-qbytes=(privileged,4194304,deny)" swift
# projmod -s -K "project.max-msg-ids=(privileged,500,deny)" swift
# projmod -s -K "project.max-sem-messages=(privileged,8192,deny)" swift
```

The above values are examples only. For more accurate values refer to the latest SWIFT documentation release notes.

- On Solaris 10: Assign the project `swift` as the default project for `all_admin` and `all_usr` by editing the file `/etc/user_attr` and adding the following two lines at the end of the file:

```
all_admin:::project=swift
```

```
all_usr:::project=swift
```

- For versions prior to Solaris 10, refer the latest SWIFT documentation and release notes to determine the necessary setup for `/etc/system`.

Use shared storage for the installation of this software. The installation procedure will modify system files and will also reboot the system. After the reboot, you must continue with the installation on the same node. Repeat the installation of the software on the second node, but you must end the installation before the SWIFTAlliance Access software licensing step.

4. Additional configuration for SWIFTAlliance Access

To enable clients to connect to the failover IP address, create a file named `.alliance_ip_name` (`interfaces.rpc` in version 5.9 and 6.0) on the data subdirectory of the SWIFTAlliance Access software.

When you are using the same file system as shown in the examples, this directory will be `/global/saadg/alliance/data`. This file must contain the IP address of the logical host as configured within the SWIFTAlliance Access resource.

```
# cd /global/saadg/alliance/data
```

```
# chown all_admin:alliance interfaces.rpc
```

If MESSENGER is licensed, create a file called `interfaces.mas` and add the cluster logical IP address used to communicate with SAM.

```
# cd /global/saadg/alliance/data
```

```
# chown all_admin:alliance interfaces.mas
```

5. Additional steps

- Add the symbolic link `/usr/swa` on all cluster nodes that are part of the cluster, see Step 1 last bullet.
- Entries in `/etc/services` has to be added on all nodes. This can be done as root by running the `/usr/swa/apply_alliance_ports` script.
- The `rc.alliance` and `rc.swa_boot` scripts (`swa_rpcd` in SWIFTAlliance Access versions earlier than 5.9) in `/etc/init.d` must remain in place. Any references to these files in `/etc/rc?.d` need to be removed, the access rights must be as follows:

```
# cd /etc/init.d

# chmod 750 rc.alliance rc.swa_boot

# chown root:sys rc.alliance rc.swa_boot
```

If the SWIFTAlliance Access Installer displays “Start this SWIFTAlliance at Boottime”, select **No**.

6. SWIFTAlliance Access Remote API (RA)

- Install RA after SWIFTAlliance Access on shared storage using the following options:
Instance RA1 (default), user `all_admin`
- Copy all files in the home directory of the `all_admin` and `all_usr` user to all nodes.

Verifying the Installation and Configuration of SWIFTAlliance Access

This section contains the procedure you need to verify the installation and configuration.

▼ How to Verify the Installation and Configuration of SWIFTAlliance Access

This procedure does not verify that your application is highly available because you have not yet installed your data service.

1 Start the SWIFTAlliance Access application

```
# su - all_admin
```

The application GUI should start. Select the menu: Alliance —> Start SWIFTAlliance Servers. If DCE is not started yet, in case of 5.5, start it first from the GUI: OS Configuration —> DCE RPC, and then select Alliance —> Start SWIFTAlliance Servers.

2 Test the application

Start the GUI, then select the menu item: Alliance —> Start User Interface.

3 Stop the SWIFTAlliance Access application

Start the GUI:

```
# su - all_admin
```

Select the menu: Alliance —> Stop SWIFTAlliance Servers.

Installing the Sun Cluster HA for SWIFTAlliance Access

If you did not install the Sun Cluster data service for SWIFTAlliance Access packages during your initial Sun Cluster installation, perform this procedure to install the packages. Perform this procedure on each cluster node where you are installing the Sun Cluster data service for SWIFTAlliance Access packages. To complete this procedure, you need the Sun Cluster Agents CD-ROM.

Note – The SUNWscsaa package is available on the CD-ROM only in the Solaris 8 directory. On Solaris 8 and 9, this package must be installed using the `pkgadd` command and on Solaris 10, the package must be installed using the `pkgadd -G` command.

Note – Patch 118050–05 or a later patch must be installed. On Solaris 8 and 9, the patch must be installed using the `patchadd` command and on Solaris 10, the patch must be installed using the `patchadd -G` command.

If you are installing more than one data service simultaneously, perform the procedure in “Installing the Software” in *Sun Cluster Software Installation Guide for Solaris OS*.

Install the Sun Cluster data service for SWIFTAlliance Access packages by using one of the following installation tools:

- Web Start program
- `scinstall` utility

Note – The Web Start program is *not* available in releases earlier than Sun Cluster 3.1 Data Services 10/03.

▼ How to Install Sun Cluster HA for SWIFTAlliance Access Packages Using the Web Start Program

You can run the Web Start program with a command-line interface (CLI) or with a graphical user interface (GUI). The content and sequence of instructions in the CLI and the GUI are similar. For more information about the Web Start program, see the `installer(1M)` man page.

- 1 **On the cluster node where you are installing the Sun Cluster data service for SWIFTAlliance Access packages, become superuser.**

- 2 **(Optional) If you intend to run the Web Start program with a GUI, ensure that your `DISPLAY` environment variable is set.**

- 3 **Insert the Sun Cluster Agents CD-ROM into the CD-ROM drive.**

If the Volume Management daemon `volmd(1M)` is running and configured to manage CD-ROM devices, it automatically mounts the CD-ROM on the `/cdrom/cdrom0` directory.

- 4 **Change to the Sun Cluster data service for SWIFTAlliance Access component directory of the CD-ROM.**

The Web Start program for the Sun Cluster data service for SWIFTAlliance Access data service resides in this directory.

```
# cd /cdrom/cdrom0/components/SunCluster_HA_SWIFT_3.1
```

- 5 **Start the Web Start program.**

```
# ./installer
```

- 6 **When you are prompted, select the type of installation.**

- To install only the C locale, select Typical.
- To install other locales, select Custom.

- 7 **Follow the instructions on the screen to install the Sun Cluster data service for SWIFTAlliance Access packages on the node.**

After the installation is finished, the Web Start program provides an installation summary. This summary enables you to view logs that the Web Start program created during the installation. These logs are located in the `/var/sadm/install/logs` directory.

- 8 **Exit the Web Start program.**

- 9 **Remove the Sun Cluster Agents CD-ROM from the CD-ROM drive.**

- a. **To ensure that the CD-ROM is not being used, change to a directory that does *not* reside on the CD-ROM.**

b. Eject the CD-ROM.

```
# eject cdrom
```

Registering and Configuring Sun Cluster HA for SWIFTAlliance Access

This section contains the procedures you need to configure Sun Cluster HA for SWIFTAlliance Access.

▼ How to Register and Configure Sun Cluster HA for SWIFTAlliance Access as a Failover Service

This procedure assumes that you installed the data service packages during your initial Sun Cluster installation.

Steps 1 to 6 will normally already be done in order to prepare for the installation of the IBM DCE and SWIFTAlliance Access software. See [“How to Install and Configure SWIFTAlliance Access” on page 15](#). Typically, you should go directly to step 7.

1 Become superuser on one of the nodes in the cluster that will host Sun Cluster.

2 Register the SUNW.gds resource type.

```
# scrgadm -a -t SUNW.gds
```

3 Register the SUNW.HAStoragePlus resource type.

```
# scrgadm -a -t SUNW.HAStoragePlus
```

4 Create a failover resource group .

```
# scrgadm -a -g swift-rg
```

5 Create a resource for the Sun Cluster Disk Storage.

```
# scrgadm -a -j swift-ds \  
-g swift-rg \  
-t SUNW.HAStoragePlus \  
-x FilesystemMountPoints=/global/saadg/alliance
```

6 Create a resource for the Sun Cluster Logical Hostname.

```
# scrgadm -a -L -j swift-lh-rs \  
-g swift-rg \  
-l swift-lh
```

7 Create a resource for SWIFTAlliance Access.

Run the registration script provided as part of the SWIFTAlliance Access HA agent. Before running this script.

Check that the names of the resources match what is configured in

```
/opt/SUNWscsaa/util/saa_config
```

```
# /opt/SUNWscsaa/util/saa_register
```

8 Enable the failover resource group that now includes the Sun Cluster Disk Storage and Logical Hostname resources.

```
# scswitch -Z -g swift-rg
```

9 Start the SWIFTAlliance Access instance manually.

```
su - all_adm
```

The GUI will open up. From within the GUI, select the menu

Alliance - Start Alliance Servers

10 Stop the SWIFTAlliance Access manually.

```
su - all_adm
```

The GUI will come up. Stop the application from within the GUI.

11 Enable each Sun Cluster resource.

```
# scstat -g
```

```
# scswitch -e -j Sun Cluster-resource
```

Verifying the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration

This section contains the procedure you need to verify that you installed and configured your data service correctly.

▼ How to Verify the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration

1 Become superuser on one of the nodes in the cluster that will host Sun Cluster.

2 Ensure all the Sun Cluster resources are online with `scstat`.

```
# scstat
```

For each Sun Cluster resource that is not online, use the `scswitch` command as follows.

```
# scswitch -e -j Sun Cluster- resource
```

- 3 Run the `scswitch` command to switch the Sun Cluster resource group to another cluster node, such as `node2`.

```
# scswitch -z -g swift-rg -h node2
```

- 4 Check that SWIFTAlliance Access is stopped on the first node and that the application is restarted on the second node.

When using a failover file system, this should disappear on the first node and will be mounted on the second node.

Understanding the Sun Cluster HA for SWIFTAlliance Access Fault Monitor

This section describes the Sun Cluster HA for SWIFTAlliance Access fault monitor's probing algorithm or functionality, and states the conditions, messages, and recovery actions associated with unsuccessful probing.

For conceptual information on fault monitors, see the *Sun Cluster Concepts Guide*.

Resource Properties

The Sun Cluster HA for SWIFTAlliance Access fault monitor uses the same resource properties as resource type `SUNW.gds`, refer to the `SUNW.gds(5)` man page for a complete list of resource properties used.

Probing Algorithm and Functionality

By default, the HA agent provides a fault monitor for the DCE component only when using SWIFTAlliance Access 5.5. The fault monitoring for SWIFTAlliance Access is switched off by default. If the SWIFTAlliance Access application fails, the agent will not restart the SWIFTAlliance Access application automatically. This behavior was explicitly requested by SWIFT. It will allow you to operate the application in a way that the probe does not interfere with the normal behavior of some SWIFTAlliance Access features like:

- operator manually triggering the SWIFTAlliance Access restart function, for example, to run SWIFTAlliance Access in housekeeping mode.
- automatic or scheduled SWIFTAlliance Access restart, for example, to run database backup and other maintenance or end-of-day processes.

- any graceful SWIFTAlliance Access restart or recovery, in case of a SWIFTAlliance Access transient local error.

The HA agent will update the resource status message to output Degraded - SAA Instance offline.

If an automatic failover occurs with default setting, it is most likely that there was a DCE problem. The SWIFTAlliance Access application will cause only a failover when it does not succeed to start on the current node.

The HA agent provides an option to turn on fault monitoring for SWIFTAlliance Access on registration time. However, this option is not recommended by SWIFT. The optional probing checks for the existence of the SWIFTAlliance Access instance by calling the `alliance` command that is part of the application and by evaluating its return code. If the SWIFTAlliance Access instance is not running, return code 100 is sent to `SUNW.gds`, which in turn will perform an automatic restart depending on the configuration of the resource properties.

Debug Sun Cluster HA for SWIFTAlliance Access

▼ How to turn on debugging for Sun Cluster HA for SWIFTAlliance Access

Each Sun Cluster component has a `DEBUG` file under `/opt/SUNWscsaa/etc`, where `saa` is a three-character abbreviation for the respective Sun Cluster component.

These files allow you to turn on debugging for all Sun Cluster instances or for a specific Sun Cluster instance on a particular node with Sun Cluster. If you require debug to be turned on for Sun Cluster HA for SWIFTAlliance Access across the whole Sun Cluster, repeat this step on all nodes within Sun Cluster.

1 Edit `/etc/syslog.conf`

Change `daemon.notice` to `daemon.debug`

```
# grep daemon /etc/syslog.conf
*.err;kern.debug;daemon.notice;mail.crit      /var/adm/messages
*.alert;kern.err;daemon.err                  operator
#
```

Change the `daemon.notice` to `daemon.debug` and restart `syslogd`. The output below, from the command `grep daemon /etc/syslog.conf`, shows that `daemon.debug` has been set.

```
# grep daemon /etc/syslog.conf
*.err;kern.debug;daemon.debug;mail.crit      /var/adm/messages
*.alert;kern.err;daemon.err                  operator
```



```
#  
# kill -1 syslogd  
#
```

2 **Edit** /opt/SUNWscsaa/etc/config

Change DEBUG= to DEBUG=ALL or DEBUG=*resource*

```
# cat /opt/SUNWscsaa/etc/config  
#  
# Copyright 2003 Sun Microsystems, Inc. All rights reserved.  
# Use is subject to license terms.  
#  
# Usage:  
#     DEBUG=<RESOURCE_NAME> or ALL  
#  
DEBUG=ALL  
#
```

Note – To turn off debug, reverse the steps above.

Index

C

- C locale, 20
- Command
 - scrgadm, 21
 - scstat, 22
 - scswitch, 22, 23
- commands, node information, 8
- Configuration
 - directory for SAA, 15
 - Registering Sun Cluster HA for SWIFTAlliance Access, 21-22
 - Requirements, 14
 - Restrictions, 13-14
 - SWIFTAlliance Access, 15-18
 - Verify, 18-19
- Configure, DCE, 16

D

- Debugging, How to turn on, 24-25
- directories, /var/sadm/install/logs, 20

F

- Fault Monitor
 - Probing Algorithm and Functionality, 23-24
 - Resource Properties, 23
 - Understanding, 23-24
- files, installation logs, 20

I

- Install
 - DCE, 16
 - SWIFTAlliance Access, 15-18
- installing
 - Sun Cluster data service for SWIFTAlliance Access
 - by using Web Start program, 20-21
 - log files created, 20

L

- locales, 20
- log files, installation, 20

P

- prtconf -v command, 8
- prtdiag -v command, 8
- psrinfo -v command, 8

R

- Resource
 - Logical Host, 21
 - SUNW.HAStoragePlus, 21
 - SWIFTAlliance Access, 22
- Resource Group, 15, 21
 - Logical Host, 15
- Resource Types
 - SUNW.gds, 21

Resource Types (*Continued*)
SUNW.HAStoragePlus, 21

S

scinstall -pv command, 9
showrev -p command, 8
Sun Cluster data service for SWIFTAlliance Access
installing
by using Web Start program, 20-21

T

Test, DCE, 16
training, 8

V

/var/sadm/install/logs directory, 20

W

Web Start program, 20-21