



Sun Cluster Data Service for SWIFTAlliance Access Guide for Solaris OS

2004Q2 (SPARC Platform Edition)

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Installing and Configuring Sun Cluster HA for SWIFTAlliance Access

Installing and Configuring Sun Cluster HA for SWIFTAlliance Access

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

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

Task	For Instructions, Go To
Plan the installation	"Planning the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration" on page 6
Install Sun Cluster HA for SWIFTAlliance Access Packages	"How to Install and Configure SWIFTAlliance Access" on page 8
Verify installation and configuration	"Verifying the Installation and Configuration of SWIFTAlliance Access" on page 10
Register and Configure Sun Cluster HA for SWIFTAlliance Access	"Registering and Configuring Sun Cluster HA for SWIFTAlliance Access" on page 14
Verify Sun Cluster HA for SWIFTAlliance Access Installation and Configuration	"Verifying the Sun Cluster HA for SWIFTAlliance Access Installation and Configuration" on page 16
Understand Sun Cluster HA for SWIFTAlliance Access fault monitor	"Understanding the Sun Cluster HA for SWIFTAlliance Access Fault Monitor" on page 17
Debug Sun Cluster HA for SWIFTAlliance Access	"Debug Sun Cluster HA for SWIFTAlliance Access" on page 17

Sun Cluster HA for SWIFTAlliance Access Overview

The HA agent is written to work with SWIFTAlliance Access version 4 and version 5. As SWIFTAlliance Access is dependent on DCE, the IBM DCE version v3.2 software for Solaris must also be installed. SWIFTAlliance Access™ is a trademark of SWIFT.

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

TABLE 1-2 Protection of Components

Component	Protected by
DCE daemon	Sun Cluster HA for SWIFTAlliance Access

Note – The HA agent provides a fault monitor for the DCE component only. This means that if the SWIFTAlliance Access stops, it will not automatically be restarted. This behaviour was explicitly requested by SWIFT. It will allow personnel unfamiliar with the Sun Cluster software to operate the application as if it is not running on a cluster. The HA agent does provide the start, stop, failover and switchover functionality. This means that when a node fails, the other node will automatically start the application.

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



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

Consider the restrictions in this section to plan the installation and configuration of Sun Cluster HA for SWIFTAlliance Access. This section provides a list of software and hardware configuration restrictions that apply to Sun Cluster HA for SWIFTAlliance Access only.

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

- The Sun Cluster HA for SWIFTAlliance Access *can only be configured as a HA agent and not as a scalable agent*.
- The SWIFTAlliance Access software should be installed on a global filesystem. Best practice is to use a failover filesystem. The IBM DCE software must be installed on local storage.

Configuration Requirements



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

Use the requirements in this section to plan the installation and configuration of Sun Cluster HA for SWIFTAlliance Access. 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.

- **Sun Cluster components and their dependencies** —The Sun Cluster HA for SWIFTAlliance Access data service can be configured to protect a Sun Cluster instance and its respective components. These components, and their dependencies between each other, are briefly described below.

TABLE 1-3 Sun Cluster components and their dependencies (via → symbol)

Component	Description
DCE daemon	→ <i>SUNW.LogicalHost</i> resource

TABLE 1-3 Sun Cluster components and their dependencies (via → symbol)
(Continued)

Component	Description
SWIFTAlliance Access	<p>→ <i>SUNW.LogicalHost</i> resource</p> <p>→ <i>SUNW.HAStoragePlus</i> resource</p> <p>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.</p> <p>→ <i>DCE daemon</i></p>

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 with default values.

Within these files, the appropriate dependencies have already been defined. If you decide to use different names for the resources then 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, these can be chosen 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 –** A logical host is required for DCE. Make sure that you add the hostname and IP address in the `/etc/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** —Create a device group and a filesystem for SWIFTAlliance Access. See *Sun Cluster 3.1 Software Installation Guide* for instructions on how to create global filesystems.
- **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 are free to choose the location yourself.

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

- **Bring the resource group online** — Switch the resource group online to enable the IP address and access to the storage.

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

- **Create configuration directory** —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 /usr/swa
```

2. **Install IBM DCE client software on all the nodes** – IBM DCE client software is a prerequisite for SWIFTAlliance Access. 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). As the installed files will reside at various locations on your system, it is not practical to have this installed on global filesystems. Be sure to 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** —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. You will have to repeat the installation of the software on the second node, but you must end the installation before the specification of the access codes.
4. **Additional configuration for SWIFTAlliance Access**To enable clients to connect to the failover IP address, it is necessary to create a file named `.alliance_ip_name` on the data subdirectory of the SWIFTAlliance Access software. When you are using the same filesystem as shown in our examples, this directory will be `/global/saadg/alliance/data`. This file must contain the IP address of the logical host as configured within the SAA resource.

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

Use this procedure to verify the installation and configuration. 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 now start. If DCE is not started start it from the GUI: "OS Configuration" — "DCE RPC". 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

If not already in the GUI, 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 dataservice for SWIFT alliance 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 dataservice for SWIFT alliance Access packages. To complete this procedure, you need the Sun Cluster Agents CD-ROM.

If you are installing more than one data service simultaneously, perform the procedure in “Installing the Software” in *Sun Cluster 3.1 10/03 Software Installation Guide*.

Install the Sun Cluster dataservice for SWIFT alliance Access packages by using one of the following installation tools:

- The Web Start program
- The `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 by 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.

Note – If you are remotely connected to the machine where the CD-ROM is loaded and you intend to run the Web Start program with a GUI, ensure that your `DISPLAY` environment variable is set. Otherwise, the Web Start program runs with the CLI.

1. On the cluster node where you are installing the Sun Cluster dataservice for SWIFT alliance Access packages, become superuser.

2. Load the Sun Cluster Agents CD-ROM into the CD-ROM drive.

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

3. Change to the Sun Cluster dataservice for SWIFT alliance Access component directory of the CD-ROM.

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

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

4. Start the Web Start program.

```
# ./installer
```

5. When you are prompted, select the type of installation.

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

6. Follow instructions on the screen to install the Sun Cluster dataservice for SWIFT alliance 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.

7. Exit the Web Start program.

8. Unload 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
```

Where to Go From Here

Go to "Registering and Configuring Sun Cluster HA for SWIFTAlliance Access" on page 14

Installing the Sun Cluster HA for SWIFTAlliance Access Packages

This section contains the procedure you need to install the Sun Cluster HA for SWIFTAlliance Access packages.

▼ How to Install the Sun Cluster HA for SWIFTAlliance Access Packages on Sun Cluster 3.x using `scinstall`

Use this procedure to install the Sun Cluster HA for SWIFTAlliance Access packages on SC3.1. You need the Sun Cluster Agents CD-ROM to perform this procedure. This procedure assumes that you did not install the data service packages during your initial Sun Cluster installation.

If you installed the Sun Cluster HA for SWIFTAlliance Access packages as part of your initial Sun Cluster installation, proceed to “Registering and Configuring Sun Cluster HA for SWIFTAlliance Access” on page 14.

Otherwise, use this procedure to install the Sun Cluster HA for SWIFTAlliance Access packages. Perform this procedure on all nodes that can run Sun Cluster HA for SWIFTAlliance Access data service.

- 1. Load the Sun Cluster Agents CD-ROM into the CD-ROM drive.**
- 2. Run the `scinstall` utility with no options.**
This step starts the `scinstall` utility in interactive mode.
- 3. Choose the menu option, Add Support for New Data Service to This Cluster Node.**
The `scinstall` utility prompts you for additional information.
- 4. Provide the path to the Sun Cluster Agents CD-ROM.**
The utility refers to the CD as the “data services cd.”
- 5. Choose the menu option, q) Done**
- 6. Type yes on the question, Do you want to see more data services**
The utility refers to the CD as the “data services cd.”
- 7. Specify the data service to install.**
The `scinstall` utility lists the data service that you selected and asks you to confirm your choice.
- 8. Exit the `scinstall` utility.**
- 9. Unload the CD from the drive.**

▼ How to Install the Sun Cluster HA for SWIFTAlliance Access Packages on Sun Cluster 3.0U3

Use this procedure to install the Sun Cluster HA for SWIFTAlliance Access packages on SC3.0U3. You need to have downloaded the agent software onto the cluster before you can perform this procedure. This procedure assumes that you did not install the data service packages during your initial Sun Cluster installation.

If you installed the Sun Cluster HA for SWIFTAlliance Access packages as part of your initial Sun Cluster installation, proceed to “Registering and Configuring Sun Cluster HA for SWIFTAlliance Access” on page 14.

Otherwise, use this procedure to install the Sun Cluster HA for SWIFTAlliance Access packages. Perform this procedure on all nodes that can run Sun Cluster HA for SWIFTAlliance Access data service.

- **Install the package with the `pkgadd` command.**

```
# pkgadd -d . SUNWscsaa
```

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

Use this procedure to configure Sun Cluster HA for SWIFTAlliance Access as a failover data service. This procedure assumes that you installed the data service packages during your initial Sun Cluster installation.

If you did not install the Sun Cluster HA for SWIFTAlliance Access packages as part of your initial Sun Cluster installation, go to “How to Install the Sun Cluster HA for SWIFTAlliance Access Packages on Sun Cluster 3.x using `scinstall`” on page 13.

Otherwise, use this procedure to configure the Sun Cluster HA for SWIFTAlliance Access data service as a failover service. 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 8. So normally, 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.

The easiest way to do this is to 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_admin  
The GUI will open up. From within the GUI, select the menu  
Alliance - Start Alliance Servers
```

10. Stop the SWIFTAlliance Access manually

```
su - all_admin
```

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

Use this procedure to verify that you installed and configured Sun Cluster HA for SWIFTAlliance Access correctly.

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`.**
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 filesystem, 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

Use the information in this section to understand 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, 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

The fault monitor only checks the DCE daemon, it does not check the executables that are part of SWIFTAlliance Access. This was explicitly asked by Swift. It allows the operator to start and stop SWIFTAlliance Access without paying attention to the cluster.

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

Debug Sun Cluster HA for SWIFTAlliance Access

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

Use the information in this section to understand how to turn on debug for Sun Cluster HA for SWIFTAlliance Access.

Sun Cluster HA for SWIFTAlliance Access can be used by multiple Sun Cluster instances. However, it is possible to turn debug on for all Sun Cluster instances or a particular Sun Cluster instance.

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 debug on 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, you will need to repeat this step on all nodes within Sun Cluster.

1. Edit `/etc/syslog.conf`

Edit `/etc/syslog.conf` and 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`. Note that the output below, from the command `grep daemon /etc/syslog.conf`, shows that `daemon.debug` has now been set.

```
# grep daemon /etc/syslog.conf
*.err;kern.debug;daemon.debug;mail.crit      /var/adm/messages
*.alert;kern.err;daemon.err                   operator
#
# pkill -1 syslogd
#
```

2. Edit `/opt/SUNWscsaa/etc/config`

Edit `/opt/SUNWscsaa/etc/config` and 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, simply reverse the steps above.

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