



# Sun Cluster Data Service for Samba Guide for Solaris OS



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# Preface

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*Sun Cluster Data Service for Samba Guide for Solaris OS* explains how to install and configure Sun™ Cluster HA for Samba on both SPARC® based systems and x86 based systems.

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**Note** – This Sun Cluster release supports systems that use the SPARC™ and x86 families of processor architectures: UltraSPARC, SPARC64, and AMD64. In this document, the label x86 refers to systems that use the AMD64 family of processor architectures.

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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 book assume knowledge of the Solaris™ Operating System (Solaris OS) and expertise with the volume-manager software that is used with Sun Cluster software.

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**Note** – Sun Cluster software runs on two platforms, SPARC and x86. The information in this document pertains to both platforms unless otherwise specified in a special chapter, section, note, bulleted item, figure, table, or example.

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## Using 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 conventions that are used in this book.

TABLE P-1 Typographic Conventions

Typeface	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% you have mail.</code>
<b>AaBbCc123</b>	What you type, contrasted with onscreen computer output	<code>machine_name% su</code> Password:
<i>aabbcc123</i>	Placeholder: replace with a real name or value	The command to remove a file is <i>rm filename</i> .
<i>AaBbCc123</i>	Book titles, new terms, and terms to be emphasized	Read Chapter 6 in the <i>User's Guide</i> . <i>A cache</i> is a copy that is stored locally. Do <i>not</i> save the file. <b>Note:</b> Some emphasized items appear bold online.

## Shell Prompts in Command Examples

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

TABLE P-2 Shell Prompts

Shell	Prompt
C shell	<code>machine_name%</code>
C shell for superuser	<code>machine_name#</code>
Bourne shell and Korn shell	<code>\$</code>
Bourne shell and Korn shell for superuser	<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 3.1 - 3.2 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

The Sun web site provides information about the following additional resources:

- [Documentation](http://www.sun.com/documentation/) (<http://www.sun.com/documentation/>)
- [Support](http://www.sun.com/support/) (<http://www.sun.com/support/>)
- [Training](http://www.sun.com/training/) (<http://www.sun.com/training/>)

## 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 number and serial number of your systems
- The release number of the Solaris Operating System (for example, Solaris 10)
- The release number of Sun Cluster (for example, Sun Cluster 3.2)

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>prtdiag -v</code>	Displays system diagnostic information
<code>/usr/cluster/bin/clnode show-rev</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 Samba

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This chapter explains how to install and configure Sun Cluster HA for Samba.

This chapter contains the following sections.

- “Overview of Installing and Configuring Sun Cluster HA for Samba” on page 12
- “Sun Cluster HA for Samba Overview” on page 11
- “Planning the Sun Cluster HA for Samba Installation and Configuration” on page 12
- “Installing and Configuring Samba” on page 21
- “Verifying the Installation and Configuration of Samba” on page 31
- “Installing the Sun Cluster HA for Samba Packages” on page 34
- “Registering and Configuring Sun Cluster HA for Samba” on page 36
- “Verifying the Sun Cluster HA for Samba Installation and Configuration” on page 45
- “Upgrading Sun Cluster HA for Samba” on page 46
- “Understanding the Sun Cluster HA for Samba Fault Monitor” on page 47
- “Debug Sun Cluster HA for Samba” on page 48

## Sun Cluster HA for Samba Overview

Sun Cluster HA for Samba can be used with Samba that is packaged with Solaris 9 or 10, or downloaded and compiled from <http://www.samba.org>. Sun provides support for Samba that is packaged with Solaris 9 or 10, but does not offer support for Samba that has been downloaded and compiled from <http://www.samba.org>.

The Sun Cluster HA for Samba data service supports whichever Samba delivery is chosen so long as you adhere to the “[Configuration Restrictions](#)” on page 13 and “[Configuration Requirements](#)” on page 18. If running a very recent version of Samba downloaded and compiled from <http://www.samba.org> you must also check that the Sun Cluster HA for Samba data service has been verified against that version.

Sun Cluster HA for Samba enables the Sun Cluster software to manage Samba by providing components to perform the orderly startup, shutdown, and fault monitoring of Samba.

# Overview of Installing and Configuring Sun Cluster HA for Samba

The following table summarizes the tasks for installing and configuring Sun Cluster HA for Samba and provides cross-references to detailed instructions for performing these tasks. Perform the tasks in the order that they are listed in the table.

**TABLE 1** Tasks for Installing and Configuring Sun Cluster HA for Samba

Task	Instructions
Plan the installation	“Planning the Sun Cluster HA for Samba Installation and Configuration” on page 12
Install and configure the Samba software	“Installing and Configuring Samba” on page 21
Verify the installation and configuration	“How to Verify the Installation and Configuration of Samba” on page 31
Install Sun Cluster HA for Samba packages	“Installing the Sun Cluster HA for Samba Packages” on page 34
Register and configure Sun Cluster HA for Samba resources	“Registering and Configuring Sun Cluster HA for Samba” on page 36
Verify the Sun Cluster HA for Samba installation and configuration	“Verifying the Sun Cluster HA for Samba Installation and Configuration” on page 45
Tune the Sun Cluster HA for Samba fault monitor	“Understanding the Sun Cluster HA for Samba Fault Monitor” on page 47
Debug Sun Cluster HA for Samba	“Debug Sun Cluster HA for Samba” on page 48

## Planning the Sun Cluster HA for Samba Installation and Configuration

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

Throughout this section references will be made to the Samba instance and winbind instance. The Sun Cluster HA for Samba data service consists of three components `smbd`, `nmbd`, and `winbindd`.

The `smbd` and optional `nmbd` components will be created within a single resource. This will be referred to as the Samba instance or Samba resource.

The `winbindd` component will be created as a separate resource and will be referred to as the winbind instance or winbind resource.

For conceptual information about failover data services, and scalable data services, see *Sun Cluster Concepts Guide for Solaris OS*.

For conceptual information about failover zones, see *Sun Cluster Data Service for Solaris Containers Guide*.

## Configuration Restrictions

The configuration restrictions in the subsections that follow apply only to Sun Cluster HA for Samba.



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

### Restriction for the supported configurations of Samba

Sun Cluster HA for Samba supports Samba in the following configurations.

- Primary Domain Controller (PDC).
- Backup Domain Controller (BDC) to a Samba PDC.
- NT4 domain member server with or without winbind.
- Active Directory domain member server with or without winbind.
- Standalone configuration.

Sun Cluster HA for Samba is supported in the following Sun Cluster configurations.

- `smbd` and `nmbd` can *only* be configured to run within a failover resource group.
- `winbindd` can be configured to run within a failover *or* scalable resource group.
- All components can run in a global, non-global or failover zone. See [“Restriction for multiple Samba instances that require winbind” on page 15](#) for more information.

### Restriction for the Location of Samba files

The Samba files are where the Samba shares and `smb.conf` files are stored. The Sun Cluster HA for Samba data service requires that these files are stored within a *configuration directory* that reflects the *NetBIOS* name for the Samba or winbind instance. The Samba files needs to be placed on shared storage as either a cluster file system or a highly available local file system.

The following deployment example has been taken from [Appendix A, “Deployment Example: Installing Samba packaged with Solaris 10”](#), where the *configuration directory* is `/local/samba/smb1` which is a highly available local file system and the *NetBIOS* name is `smb1`.

```
Vigor5# mkdir -p /local/samba/smb1
Vigor5# cd /local/samba/smb1
Vigor5# mkdir -p lib logs private shares var/locks
```

---

**Note** – If Samba is downloaded and compiled from <http://www.samba.org> you may also want to consider placing these binaries on a cluster file system or highly available local file system.

Refer to *Determining the Location of Application Binaries* in *Sun Cluster Data Services Planning and Administration Guide for Solaris OS* for a discussion on cluster file systems and highly available local file systems.

---

## Restriction for the Samba `smb.conf` files

The Samba `smb.conf` file is a configuration file that is used by the Samba and winbind instances.

The Sun Cluster HA for Samba data service requires that these files are located at `configuration-directory/lib/smb.conf`. Depending on how Samba is deployed the following restrictions apply.

Each Samba instance requires a unique *configuration directory* that reflects the NetBIOS name of the Samba instance.

A winbind instance may share a Samba instance *configuration directory* and subsequent `smb.conf` file, together with the NetBIOS name of the Samba instance, if the Samba and winbind instances are deployed within the same failover resource group.

If a winbind instance is configured within a scalable resource group, a unique *configuration directory* that reflects the NetBIOS name for the winbind instance is required.

Each Samba instance `smb.conf` file must have a `[smondir]` share. The Sun Cluster HA for Samba fault monitor uses `smbclient` to access the directory specified within `[smondir]` to verify that `smnd` is operating correctly.

**EXAMPLE 1** Sample `[smondir]` entry within `smb.conf`.

```
[smondir]
comment = Monitor directory for Sun Cluster
path = /tmp
browseable = No
```

For illustration purposes the following example shows Samba installed from <http://www.samba.org> onto a cluster file system with two Samba instances (`smb1` and `smb2`) and a winbind instance (`winbind`).

The Samba instances will run as failover services within separate failover resource groups on highly available local file systems with their own unique *configuration directories*. winbind will run as a scalable service on a cluster file system with its own unique *configuration directory*.

Within this example:

- Samba has been downloaded into `/global/samba/software`.
- Samba has been compiled into `/global/samba/3.0.22`.
- The NetBIOS name for the Samba instances are `smb1` and `smb2`.
- The NetBIOS name for the winbind instance is `winbind`.
- The Samba instance `smb1` has its *configuration directory* as `/local/samba/config/smb1`.
- The Samba instance `smb2` has its *configuration directory* as `/local/samba/config/smb2`.
- The winbind instance `winbind` has its *configuration directory* as `/global/samba/config/winbind`.
- The Samba instance `smb1` has its `smb.conf` file located at `/local/samba/config/smb1/lib/smb.conf`.
- The Samba instance `smb2` has its `smb.conf` file located at `/local/samba/config/smb2/lib/smb.conf`.
- The winbind instance `winbind` has its `smb.conf` file located at `/global/samba/config/winbind/lib/smb.conf`.

#### EXAMPLE 2 Samba and winbind configuration directories

```
bash-3.00# ls -l /opt/samba
lrwxrwxrwx  1 root    root      20 Jul 13 11:24 /opt/samba -> /global/samba/latest
bash-3.00#
bash-3.00# ls -l /global/samba
total 8
drwxrwx---  2 root    root      512 Jul 13 11:20 3.0.22
drwxrwx---  3 root    root      512 Jul 13 11:20 config
lrwxrwxrwx  1 root    root      20 Jul 13 11:20 latest -> /global/samba/3.0.22
drwxrwx---  2 root    root      512 Jul 13 11:20 software
bash-3.00#
bash-3.00# ls -l /global/samba/config
total 2
drwxrwx---  2 root    root      512 Jul 13 11:20 winbind
bash-3.00#
bash-3.00# ls -l /local/samba/config
total 4
drwxrwx---  2 root    root      512 Jul 13 11:25 smb1
drwxrwx---  2 root    root      512 Jul 13 11:25 smb2
bash-3.00#
```

## Restriction for multiple Samba instances that require winbind

The Sun Cluster HA for Samba data service can support multiple Samba instances. However, only one winbind instance is supported per global zone, non-global zone or failover zone.

If you intend to deploy multiple Samba instances that also require winbind, then you will need to consider if winbind needs to be a scalable service. The following discussion will help you determine how to deploy single or multiple Samba instances with winbind.

Disregard any reference to winbind if it is not required.

Within these examples:

- There are two nodes within the cluster, `node1` and `node2`.
- Both nodes have two non-global zones each named `z1` and `z2`.
- Additional non-global zones are represented by `z[n]`.
- Each example listed simply shows the required `NodeList` property value when creating a failover or scalable resource group.
- Benefits and drawbacks are listed within each example as + and -.

---

**Note** – Although these examples show non-global zones `z1` and `z2`, you may also use `global` as the zone name or omit the zone entry within the `NodeList` property value to use the global zone.

---

**EXAMPLE 3** Run *all* Samba instances and a winbind instance within the same failover resource group.

Create a single failover resource group that will contain all the Samba instances and a winbind instance in non-global zones across `node1` and `node2`.

```
# clresourcegroup create -n node1:z1,node2:z1 RG1
```

- + Only one non-global zone per node is required.
- - All Samba/winbind instances do not have independent failover as they are all within the same failover resource group.

**EXAMPLE 4** Run *each* Samba/winbind instance within separate failover resource groups.

Create multiple failover resource groups that will each contain one Samba/winbind instance in exclusive non-global zones across `node1` and `node2`.

```
# clresourcegroup create -n node1:z1,node2:z1 RG1
#
# clresourcegroup create -n node1:z2,node2:z2 RG2
#
# clresourcegroup create -n node1:z[n],node2:z[n] RG[n]
```

- + All Samba/winbind instances have independent failover in separate failover resource groups.
- + All Samba/winbind instances are isolated within their own exclusive non-global zones.

**EXAMPLE 4** Run *each* Samba/winbind instance within separate failover resource groups. (Continued)

- - Each resource group requires a unique non-global zone per node.

**EXAMPLE 5** Run *each* Samba instance within separate failover resource groups and winbind in a scalable resource group.

Create multiple failover resource groups that will each contain one Samba instance and one scalable resource group that will contain a scalable winbind resource in shared non-global zones across node1 and node2.

```
# clresourcegroup create -n node1:z1,node2:z1 RG1
#
# clresourcegroup create -n node1:z1,node2:z1 RG2
#
# clresourcegroup create -n node1:z1,node2:z1 RG[n]
#
# clresourcegroup create -S -n node1:z1,node2:z1 RG3
```

- + All Samba instances have independent failover within separate failover resource groups.
- + Only one non-global zone per node is required.
- +/- All Samba instances share the same non-global zone.

---

**Note** – For a scalable resource group different zones from the same node cannot be specified in the `NodeList` parameter, thereby limiting a scalable resource group for winbind to one zone from the same node.

---

**EXAMPLE 6** Run *each* Samba/winbind instance in separate failover resource groups that contain separate failover zones across node1 and node2.

Create multiple failover resource groups that will each contain a failover zone. Each failover zone will then contain one Samba/winbind instance.

```
# clresourcegroup create -n node1,node2 RG1
#
# clresourcegroup create -n node1,node2 RG2
#
# clresourcegroup create -n node1,node2 RG[n]
```

- + All Samba instances have independent failover within separate failover resource groups.
- + The same failover zone per resource group is used per node.
- + Each failover zone is only active on one node at a time.
- - Each resource group requires a unique failover zone per node.

**Note** – If your requirement is simply to make Samba highly available you should consider choosing a global or non-global zone deployment over a failover zone deployment. Deploying Samba within a failover zone will incur additional failover time to boot/halt the failover zone.

## Configuration Requirements

The configuration requirements in this section apply only to Sun Cluster HA for Samba.



**Caution** – If your data service configuration does not conform to these requirements, the data service configuration might not be supported.

### Determine which Solaris Zone Samba will run use

Solaris zones provides a means of creating virtualized operating system environments within an instance of the Solaris 10 OS. Solaris zones allow one or more applications to run in isolation from other activity on your system. For complete information about installing and configuring a Solaris Container, see *System Administration Guide: Solaris Containers-Resource Management and Solaris Zones*.

You must determine which Solaris Zone Samba will run in. Samba can run within a global zone, non-global zone or in a failover zone configuration. [Table 2](#) provides some reasons to help you decide.

**Note** – Samba can be deployed within a whole root zone or a sparse root zone of a non-global zone or failover zone.

**TABLE 2** Choosing the appropriate Solaris Zone for Samba

Zone type	Reasons for choosing the appropriate Solaris Zone for Samba
Global Zone	Only one instance of Samba will be installed. Non-global zones are not required.
Non-global Zone	Several Samba instances need to be consolidated and isolated from each other. Different versions of Samba will be installed. Failover testing of Samba between non-global zones on the same node is required.
Failover Zone	You require Samba to run in the same zone regardless of which node the failover zone is running on.

---

**Note** – If your requirement is simply to make Samba highly available you should consider choosing a global or non-global zone deployment over a failover zone deployment. Deploying Samba within a failover zone will incur additional failover time to boot/halt the failover zone.

---

## Dependencies Between Sun Cluster HA for Samba Components

If your Samba resource requires winbind, you must configure a start dependency on the winbind resource.

You will be required to set this dependency after you have created the Samba and winbind resources and will be prompted to do so later on within [“Registering and Configuring Sun Cluster HA for Samba” on page 36](#).

[Table 3](#) list the various dependencies.

**TABLE 3** Samba components and their dependencies

Component	Description
Samba resource (smbd and nmbd)	The winbind resource (If the Samba resource requires winbind services) The smbd Logical Host resource The smbd HA Storage resource
winbind resource (winbindd)	The winbindd Logical Host resource The winbindd HA Storage resource

---

**Note** – Dependencies against the relevant component's Logical Host or HA Storage resource will be set for you when the Samba and winbind resources are registered.

---

## Required parameters for the Samba smb.conf file

The Samba smb.conf file located within each configuration directory must contain the following parameters. Refer to the smb.conf(5) man page for complete configuration information on the parameters that follow.

- Samba parameters required in smb.conf for Samba 2.2.x and 3.0.x.
  - **bind interfaces only** must be set to True.
  - **interface** must be defined to the Logical Hostname.
  - **lock dir** must include the *samba-configuration-directory* in it's path.
  - **netbios name** must be set to the NetBIOS name by which the Samba server is known.
  - **pid directory** must include the *samba-configuration-directory* in it's path.

- **security** specifies the security mode under which the Samba instance will run.
  - **smb passwd file** must include the *samba-configuration-directory* in its path.
- Winbind parameters required in `smb.conf` for Samba 2.2.x.
  - **workgroup** must be set to the same value as the Samba `smb.conf` entry.
  - **bind interfaces only** must be set to True.
  - **interface** must be defined to the Logical Hostname.
  - **lock dir** must include the *samba-configuration-directory* in its path.
  - **netbios name** must be set to the NetBIOS name by which the winbind server is known.
  - **password server** must be set to the same value as the Samba `smb.conf` entry.
  - **pid directory** must include the *samba-configuration-directory* in its path.
  - **template homedir** must be set to the same value as the Samba `smb.conf` entry.
  - **template shell** must be set to the same value as the Samba `smb.conf` entry.
  - **winbind enum users** must be set to the same value as the Samba `smb.conf` entry.
  - **winbind gid** must be set to the same value as the Samba `smb.conf` entry.
  - **winbind uid** must be set to the same value as the Samba `smb.conf` entry.
  - **winbind use default domain** must be set to the same value as the Samba `smb.conf` entry.
- Winbind parameters required in `smb.conf` for Samba 3.0.x.
  - **workgroup** must be set to the same value as the Samba `smb.conf` entry.
  - **bind interfaces only** must be set to True.
  - **interface** must be defined to the Logical Hostname.
  - **lock dir** must include the *samba-configuration-directory* in its path.
  - **netbios name** must be set to the NetBIOS name by which the winbind server is known.
  - **password server** must be set to the same value as the Samba `smb.conf` entry.
  - **pid directory** must include the *samba-configuration-directory* in its path.
  - **template homedir** must be set to the same value as the Samba `smb.conf` entry.
  - **template shell** must be set to the same value as the Samba `smb.conf` entry.
  - **idmap gid** must be set to the same value as the Samba `smb.conf` entry.
  - **winbind enum users** must be set to the same value as the Samba `smb.conf` entry.
  - **idmap uid** must be set to the same value as the Samba `smb.conf` entry.
  - **winbind use default domain** must be set to TRUE.

---

# Installing and Configuring Samba

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

## ▼ How to Install and Configure Samba

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

### 1 Determine how many Samba instances will be used.

Refer to “[Restriction for multiple Samba instances that require winbind](#)” on page 15 for more information.

### 2 Determine which Solaris zone to use.

Refer to “[Determine which Solaris Zone Samba will run use](#)” on page 18 for more information.

### 3 If a zone will be used, create the non-global zone or failover zone.

Refer to *System Administration Guide: Solaris Containers-Resource Management and Solaris Zones* for complete information about installing and configuring a Solaris Container.

Refer to *Sun Cluster Data Service for Solaris Containers Guide* for complete information about creating a failover zone.

### 4 Create a cluster file system or highly available local file system for the Samba files.

Refer to “[Restriction for the Location of Samba files](#)” on page 13 for more information.

Refer to *Sun Cluster Data Services Planning and Administration Guide for Solaris OS* for more information about creating a cluster file system or highly available local file system.

---

**Note** – You may also want to consider allocating additional space if you install Samba from <http://www.samba.org>.

---

### 5 Install Samba onto a cluster file system or highly available local file system.

---

**Note** – Sun provides support for Samba that is packaged with Solaris 9 or 10, but does not offer support for Samba that has been downloaded and compiled from <http://www.samba.org>.

---

#### ■ Check Samba is installed on Solaris 9 or 10.

Refer to “[How to Check Samba is installed with Solaris 9 or 10](#)” on page 22 for more information.

- **Download and compile Samba from** <http://www.samba.org>.

Refer to “How to Install and Configure Samba downloaded from <http://www.samba.org>” on page 23 for more information.

## ▼ How to Check Samba is installed with Solaris 9 or 10

Samba is already installed and configured with Solaris 9 or 10 and included in the following packages SUNWsmbac, SUNWsmbar, SUNWsmbau, and SUNWsfman. Refer to the Freeware Features within the book *Solaris 10 What’s New* to check if new features have been added to Samba packaged with Solaris 10.

### 1 Check the package information to verify that Samba is installed on every node.

```
# for i in SUNWsmbac SUNWsmbar SUNWsmbau SUNWsfman
> do
> pkginfo $i
> done
system      SUNWsmbac samba - A Windows SMB/CIFS fileserver for UNIX (client)
system      SUNWsmbar samba - A Windows SMB/CIFS fileserver for UNIX (Root)
system      SUNWsmbau samba - A Windows SMB/CIFS fileserver for UNIX (Usr)
system      SUNWsfman GNU and open source man pages
```

### 2 Check what Samba version is installed on every node.

```
# pkginfo -l SUNWsmbac
PKGINST:  SUNWsmbac
NAME:     samba - A Windows SMB/CIFS fileserver for UNIX (client)
CATEGORY: system
ARCH:     i386
VERSION:  11.10.0,REV=2005.01.08.01.09
BASEDIR:  /
VENDOR:   Sun Microsystems, Inc.
DESC:     samba - A Windows SMB/CIFS fileserver for UNIX (client) 3.0.11
PSTAMP:   sfw10-patch-x20050420163529
INSDATE:  Oct 03 2005 09:23
HOTLINE:  Please contact your local service provider
STATUS:   completely installed
FILES:    13 installed pathnames
          3 shared pathnames
          3 directories
          10 executables
          10937 blocks used (approx)
```

**Next Steps** See “How to Prepare Samba for Sun Cluster HA for Samba” on page 25.

## ▼ How to Install and Configure Samba downloaded from <http://www.samba.org>

If a newer version of Samba is required you can download and compile Samba from <http://www.samba.org>.

### 1 (Optional) Mount the highly available local file system.

It is recommended that you download and install Samba onto a cluster file system or highly available local file system. Doing so will allow you to have Samba installed in one location. You will also be able to mount the file system in Solaris zones.

If multiple Samba instances will be deployed you should use a cluster file system for the Samba binaries and either a cluster file system or highly available local file system for the Samba files.

Refer to [Example 2](#) in “Restriction for the Samba `smb.conf` files” on page 14 for an example of download and compiling Samba onto a cluster file system and using a highly available local file system for the Samba files for each Samba instance.

Alternatively, you can download and compile Samba onto local file system for each Solaris zone.

---

**Note** – If a cluster file system is being used, the file system should already be mounted at boot as a global file system.

---

```
# mount samba-highly-available-local-file-system
```

### 2 Download and compile Samba from <http://www.samba.org>

Here Kerberos, OpenLDAP, and Samba will be downloaded and compiled.

Samba will use the `idmap_rid` facility to map a single ADS domain SIDs to Solaris UIDs and GIDs. You should determine what `idmap` is suitable for your installation.

Within this example the *samba-highly-available-local-file-system* is `/local/samba`, where the software is installed into `/local/samba/software` and compiled into `/opt/samba`.

For more information using these filenames refer to the following deployment example in [Appendix B](#), “Deployment Example: Installing Samba from <http://www.samba.org>” where these commands have been taken.

#### a. Download, Extract and Install Kerberos.

```
Vigor5# cd /local/samba/software
Vigor5# wget http://web.mit.edu/kerberos/dist/krb5/1.4/krb5-1.4.3-signed.tar
Vigor5# tar -xftp krb5*tar
Vigor5# gunzip -c krb5*.tar.gz | tar -xftp -
Vigor5# rm krb5*tar*
```

```
Vigor5# cd krb5*/src
Vigor5# CC=/opt/SUNWspro/bin/cc ./configure --prefix=/opt/samba \
> --enable-dns-for-realm
Vigor5# make
Vigor5# make install
```

### b. Download, Extract and Install OpenLDAP.

---

**Note** – You must obtain a fix for Bug ID: 6419029 which describes a problem when compiling OpenLDAP before proceeding with this step.

---

```
Vigor5# cd /local/samba/software
Vigor5# wget \
> ftp://ftp.openldap.org/pub/OpenLDAP/openldap-release/openldap-2.3.24.tgz
Vigor5# gunzip -c openldap-2.3.24.tgz | tar -xvfBp -
Vigor5# rm openldap-2.3.24.tgz
Vigor5# cd openldap*
Vigor5# CC=/opt/SUNWspro/bin/cc \
> CPPFLAGS="-I/opt/samba/include" \
> LDFLAGS="-L/opt/samba/lib -R/opt/samba/lib" ./configure --prefix=/opt/samba \
> --disable-slapd --disable-slurpd
Vigor5# make depend
Vigor5# make
Vigor5# make install
```

### c. Download, Extract and Install Samba.

```
Vigor5# cd /local/samba/software
Vigor5# wget http://us3.samba.org/samba/ftp/old-versions/samba-3.0.22.tar.gz
Vigor5# gunzip -c samba-3.0.22.tar.gz | tar -xvfBp -
Vigor5# rm samba-3.0.22.tar.gz
Vigor5# cd samba*/source
Vigor5# CC=/opt/SUNWspro/bin/cc \
> CFLAGS=-I/opt/samba/include \
> LDFLAGS="-L/opt/samba/lib -R/opt/samba/lib" ./configure --prefix=/opt/samba \
> --with-ads --with-krb5=/opt/samba --with-shared-modules=idmap_rid
Vigor5# make
Vigor5# make install
```

## 3 Copy winbind libnss\_winbind.so to /usr/lib

```
# cd /local/samba/software/samba*/source
#
# cp nsswitch/libnss_winbind.so /usr/lib
# ln -s /usr/lib/libnss_winbind.so /usr/lib/libnss_winbind.so.1
# ln -s /usr/lib/libnss_winbind.so /usr/lib/nss_winbind.so.1
```

**Next Steps** See “How to Prepare Samba for Sun Cluster HA for Samba” on page 25.

## ▼ How to Prepare Samba for Sun Cluster HA for Samba

This section contains the steps to prepare Samba for use with the Sun Cluster HA for Samba data service.

Some steps require that you use Samba commands, refer to the Docs and Books section with <http://www.samba.org> for the relevant man pages for more information of these Samba commands.

Perform this procedure on one node of the cluster, unless a specific step indicates otherwise.

### 1 If a non-global zone or failover zone is being used, ensure the zone is booted.

Repeat this step on all nodes on the cluster.

```
# zoneadm list -v
```

Boot the zone if it is not running.

```
# zoneadm -z zonename boot
```

### 2 Create the fault monitor user

#### a. If winbind is being used.

Create the fault monitor user on the NT PDC or ADS server with no home directory, no user profile and no logon script. Set the Password never expire parameter to true and User cannot change password parameter to true.

#### b. If winbind is not being used.

Repeat this step on all nodes or zones on the cluster.

##### i. If the global zone is being used for Samba.

```
# groupadd -g 1000 samba-fault-monitor-group
# useradd -u 1000 -g 1000 -s /bin/false samba-fault-monitor-user
```

##### ii. If a non-global zone or failover zone is being used for Samba.

Create the fault monitor user in the zone.

```
# zlogin zonename groupadd -g 1000 samba-fault-monitor-group
# zlogin zonename useradd -u 1000 -g 1000 -s /bin/false samba-fault-monitor-user
```

---

**Note** – A local Samba `fmuser` also requires a local password. The settings in the `smb.conf` specify which password will be used.

---

### 3 If winbind is used, add winbind as a name service on all nodes with Sun Cluster

Repeat this step on all nodes or zones on the cluster.

Edit `/etc/nsswitch.conf` in the zones being used for Samba and add `winbind` to the `passwd:` and `group:` entries, for example:

```
# grep winbind /etc/nsswitch.conf
passwd:    files winbind
group:     files winbind
```

### 4 If winbind is used, disable the Name Service Cache Daemon on all nodes with Sun Cluster

Repeat this step on all nodes or zones on the cluster.

#### a. If running Solaris 9

```
# /etc/init.d/nscd stop
```

#### b. If running Solaris 10

##### i. If the global zone is being used for Samba.

```
# svcadm disable name-service-cache
```

##### ii. If a non-global zone or failover zone is being used for Samba.

```
# zlogin zonename svcadm disable name-service-cache
```

### 5 Create a cluster file system or highly available local file system

Perform this step on all nodes of the cluster.

You must create a cluster file system or highly available local file system for some Samba files. Refer to [“Restriction for the Location of Samba files”](#) on page 13 for more information on what is meant by Samba files.

Refer to *Sun Cluster Data Services Planning and Administration Guide for Solaris OS* for more information about how to create a cluster file system or highly available local file system.

### 6 Mount the cluster file system or highly available local file system

Perform this step on one node of the cluster.

#### a. If the global zone is being used for Samba.

```
# mount samba-highly-available-local-file-system
```

**b. If a non-global zone or failover zone is being used for Samba.**

Create the mount point on all zones of the cluster that are being used for Samba.

Mount the cluster file system or highly available local file system on one of the zones being used by Samba.

```
# zlogin zonename mkdir samba-highly-available-local-file-system
#
# mount -F lofs samba-highly-available-local-file-system \
> /zonepath/root/samba-highly-available-local-file-system
```

**7 Create the Samba configuration directory.**

Repeat this step for each Samba or winbind instance on one node of the cluster.

Create the Samba configuration directory within the *samba-highly-available-local-file-system*.

```
# mkdir -p samba-configuration-directory
# cd samba-configuration-directory
# mkdir -p lib logs private shares var/locks
```

The following deployment example has been taken from [Appendix A, “Deployment Example: Installing Samba packaged with Solaris 10”](#) where `/local` is the highly available local file system and `/local/samba/smb1` is the *samba-configuration-directory*.

```
Vigor5# mkdir -p /local/samba/smb1
Vigor5# cd /local/samba/smb1
Vigor5# mkdir -p lib logs private shares var/locks
```

**8 Create the `smb.conf` file within the configuration directory.**

Repeat this step for each Samba or winbind instance on one node of the cluster.

Create a `smb.conf` file within the configuration directory that reflects the instance.

Refer to “[Required parameters for the Samba `smb.conf` file](#)” on page 19 and the `smb.conf[5]` man page for an explanation of the required parameters.

The following deployment example has been taken from [Appendix B, “Deployment Example: Installing Samba from <http://www.samba.org>”](#).

```
Vigor5# cat > /local/samba/smb1/lib/smb.conf <<-EOF
[global]
    workgroup = ADS
    bind interfaces only = yes
    interfaces = SMB1/255.255.255.0
    netbios name = SMB1
    security = ADS
    realm = ADS.EXAMPLE.COM
    password server = ADS.EXAMPLE.COM
    server string = Samba (%v) domain (%h)
    pid directory = /local/samba/smb1/var/locks
    log file = /local/samba/smb1/logs/log.%m
```

```
smb passwd file = /local/samba/smb1/private/smbpasswd
private dir = /local/samba/smb1/private
lock dir = /local/samba/smb1/var/locks

winbind cache time = 30
allow trusted domains = no
idmap backend = rid:ADS=100000-200000
idmap uid = 100000-200000
idmap gid = 100000-200000
winbind enum groups = yes
winbind enum users = yes
winbind use default domain = yes
```

```
[scmdir]
comment = Monitor directory for Sun Cluster
path = /tmp
browseable = No
```

EOF

---

**Note** – If security = share is required then you must include guest only = yes within [scmdir].

---

## 9 Add the NetBIOS name entry to /etc/hosts and /etc/inet/ipnodes

Repeat this step on all nodes or zones on the cluster.

Edit /etc/hosts and /etc/inet/ipnodes in the zones being used for Samba and add the NetBIOS name entries, for example:

```
# egrep -e "SMB1|ADS" /etc/hosts /etc/inet/ipnodes
/etc/hosts:192.168.1.132    SMB1#20
/etc/hosts:192.168.1.9    ADS.EXAMPLE.COM#20
/etc/inet/ipnodes:192.168.1.132    SMB1#20
/etc/inet/ipnodes:192.168.1.9    ADS.EXAMPLE.COM#20
```

---

**Note** – The name resolve order parameter in the smb.conf file will determine what naming service to use and in what order to resolve host names to IP addresses. Refer to the smb.conf [5] for more information.

The interfaces, netbios name and password server all require host name to IP address resolution.

---

## 10 If Samba will operate as an Active Directory Domain Member Server, create the Kerberos krb5.conf file.

Repeat this step on all nodes or zones on the cluster.

Create the `/etc/krb5.conf` file in the zones being used for Samba, that reflects the ADS realm. Refer to <http://www.samba.org> for complete information about installing and configuring Samba as a ADS domain member.

The following deployment example has been taken from [Appendix B, “Deployment Example: Installing Samba from <http://www.samba.org>”](#).

```
Vigor5# cat > /etc/krb5.conf <<-EOF
[libdefaults]
    default_realm = ADS.EXAMPLE.COM

[realms]
    ADS.EXAMPLE.COM = {
        kdc = 192.168.1.9
        admin_server = 192.168.1.9
    }

[domain_realm]
    .your.domain.name = ADS.EXAMPLE.COM
    your.domain.name = ADS.EXAMPLE.COM
EOF
Vigor5#
Vigor5# rm /etc/krb5/krb5.conf
Vigor5# ln -s /etc/krb5.conf /etc/krb5/krb5.conf
```

## 11 Configure the logical host

Perform this step on one node of the cluster.

The `samba-logical-host` should be the value you specified for the `interfaces` parameter when you created the `smb.conf` file in [Step 8](#).

### a. If the global zone only is being used for Samba.

```
# ifconfig interface addif samba-logical-host up
```

### b. If a non-global zone or failover zone is being used for Samba.

Configure the logical host within the zone.

```
# ifconfig interface addif samba-logical-host up zone zonename
```

## 12 Test the `smb.conf` file

Perform this step on one node or zone of the cluster.

### a. If the global zone is being used for Samba.

```
# samba-bin-directory/testparm \
> samba-configuration-directory/Lib/smb.conf
```

**b. If a non-global zone or failover zone is being used for Samba.**

```
# zlogin zonename samba-bin-directory/testparm \  
> samba-configuration-directory/Lib/smb.conf
```

**13 If configured as a NT Domain Member and using Samba 2.2.x join the domain**

Perform this step on one node or zone of the cluster.

**a. If the global zone is being used for Samba.**

```
# samba-bin-directory/smbpasswd \  
> -c samba-configuration-directory/Lib/smb.conf \  
> -j domain -r PDC \  
> -U Administrator-on-the-PDC
```

**b. If a non-global zone or failover zone is being used for Samba.**

```
# zlogin zonename samba-bin-directory/smbpasswd \  
> -c samba-configuration-directory/Lib/smb.conf \  
> -j domain -r PDC \  
> -U Administrator-on-the-PDC
```

**14 If configured as a NT Domain Member and using Samba 3.0.x join the domain**

Perform this step on one node or zone of the cluster.

**a. If the global zone is being used for Samba.**

```
# samba-bin-directory/net \  
> -s samba-configuration-directory/Lib/smb.conf \  
> RPC JOIN \  
> -U Administrator-on-the-PDC
```

**b. If a non-global zone or failover zone is being used for Samba.**

```
# zlogin zonename samba-bin-directory/net \  
> -s samba-configuration-directory/Lib/smb.conf \  
> RPC JOIN \  
> -U Administrator-on-the-PDC
```

**15 If configured as a Windows 2003 Domain Member Server with ADS join the domain**

Perform this step on one node or zone of the cluster.

**a. If the global zone is being used for Samba.**

```
# samba-bin-directory/net \  
> -s samba-configuration-directory/Lib/smb.conf \  
> ADS JOIN \  
> -U Administrator-on-the-ADS
```

**b. If a non-global zone or failover zone is being used for Samba.**

```
# zlogin zonename samba-bin-directory/net \
> -s samba-configuration-directory/Lib/smb.conf \
> ADS JOIN \
> -U Administrator-on-the-ADS
```

**16 If configured as a PDC or with security = user add the fault monitor user**

Perform this step on one node or zone of the cluster.

**a. If the global zone is being used for Samba.**

```
# samba-bin-directory/smbpasswd \
> -c samba-configuration-directory/Lib/smb.conf \
> -a samba-fault-monitor-user
```

**b. If a non-global zone or failover zone is being used for Samba.**

```
# zlogin zonename samba-bin-directory/smbpasswd \
> -c samba-configuration-directory/Lib/smb.conf \
> -a samba-fault-monitor-user
```

**17 If configured with security = share**

Ensure `guest only = yes` is coded within the `[smondird]` section of your `smb.conf` file.

## Verifying the Installation and Configuration of Samba

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

### ▼ How to Verify the Installation and Configuration of Samba

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

Perform this procedure on one node or zone of the cluster only.

**1 Test the smb.conf file****a. If the global zone is being used for Samba.**

```
# samba-bin-directory/testparm \
> samba-configuration-directory/Lib/smb.conf
```

**b. If a non-global zone or failover zone is being used for Samba.**

```
# zlogin zonename samba-bin-directory/testparm \  
> samba-configuration-directory/lib/smb.conf
```

**2 If winbind is used, start and test winbind****a. Start and test winbind****i. If the global zone is being used for Samba.**

```
# samba-sbin-directory/winbindd \  
> -s samba-configuration-directory/lib/smb.conf  
# getent passwd  
# getent group
```

**ii. If a non-global zone or failover zone is being used for Samba.**

```
# zlogin zonename samba-sbin-directory/winbindd \  
> -s samba-configuration-directory/lib/smb.conf  
# zlogin zonename getent passwd  
# zlogin zonename getent group
```

**b. Test the fault monitor user can be resolved**

This test must succeed.

If you encounter problems restart winbindd with debug information using -d 3.

You should then retest and observe the winbindd log file which can be found at *samba-configuration-directory/logs/log.winbindd*.

---

**Note** – Winbind caching can affect the results from `getent passwd samba_fault_monitor` which might not be up-to-date. Refer to the `winbind[8]` man page for more information on winbind caching and to the `smb.conf[5]` man page for more information on winbind cache time.

---

**i. If the global zone is being used for Samba.**

```
# getent passwd samba-fault-monitor-user
```

**ii. If a non-global zone or failover zone is being used for Samba.**

```
# zlogin zonename getent passwd samba-fault-monitor-user
```

### 3 Start and test Samba

#### a. Start Samba

##### i. If the global zone is being used for Samba.

```
# samba-sbin-directory/smbd \  
> -s samba-configuration-directory/lib/smb.conf -D
```

##### ii. If a non-global zone or failover zone is being used for Samba.

```
# zlogin zonename samba-sbin-directory/smbd \  
> -s samba-configuration-directory/lib/smb.conf -D
```

#### b. Test that smbclient can access Samba

This test must succeed.

If you encounter problems restart smbclient with debug information using -d 3.

##### i. If the global zone is being used for Samba.

```
# samba-bin-directory/smbclient -N -L NetBIOS-name  
#  
# samba-bin-directory/smbclient '\\NetBIOS-name\scmondir' \  
> -U samba-fault-monitor-user -c 'pwd;exit'
```

##### ii. If a non-global zone or failover zone is being used for Samba.

```
# zlogin zonename samba-bin-directory/smbclient -N -L NetBIOS-name  
#  
# zlogin zonename samba-bin-directory/smbclient '//NetBIOS-name/scmondir' \  
> -U samba-fault-monitor-user -c 'pwd;exit'
```

### 4 Stop the smbd, nmbd, and winbindd daemons

Perform this step in the global zone only.

```
# pkill -TERM -z zonename 'smbd|nmbd|winbindd'
```

### 5 Unmount the highly available local file system

Perform this step in the global zone only.

This step is not required if a cluster file system is being used.

You should unmount the highly available file system you mounted in [Step 6 in “How to Prepare Samba for Sun Cluster HA for Samba” on page 25](#)

#### a. If the global zone only is being used for Samba.

```
# umount samba-highly-available-local-file-system
```

**b. If a non-global zone or failover zone is being used for Samba.**

Unmount the highly available local file system from the zone.

```
# umount /zonepath/root/samba-highly-available-local-file-system
```

**6 Remove the logical host**

Perform this step in the global zone only.

You should remove the logical host you configured in [Step 11](#) in “[How to Prepare Samba for Sun Cluster HA for Samba](#)” on page 25

```
# ifconfig interface removeif samba-logical-host
```

## Installing the Sun Cluster HA for Samba Packages

If you did not install the Sun Cluster HA for Samba packages during your initial Sun Cluster installation, perform this procedure to install the packages. To install the packages, use the Sun Java™ Enterprise System Installation Wizard.

### ▼ How to Install the Sun Cluster HA for Samba Packages

Perform this procedure on each cluster node where you are installing the Sun Cluster HA for Samba packages.

You can run the Sun Java Enterprise System Installation Wizard 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.

---

**Note** – Even if you plan to configure this data service to run in non-global zones, install the packages for this data service in the global zone. The packages are propagated to any existing non-global zones and to any non-global zones that are created after you install the packages.

---

**Before You Begin** Ensure that you have the Sun Java Availability Suite DVD-ROM.

If you intend to run the Sun Java Enterprise System Installation Wizard with a GUI, ensure that your DISPLAY environment variable is set.

**1 On the cluster node where you are installing the data service packages, become superuser.**

**2 Load the Sun Java Availability Suite DVD-ROM into the DVD-ROM drive.**

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

- 3 **Change to the Sun Java Enterprise System Installation Wizard directory of the DVD-ROM.**
  - **If you are installing the data service packages on the SPARC® platform, type the following command:**

```
# cd /cdrom/cdrom0/Solaris_sparc
```
  - **If you are installing the data service packages on the x86 platform, type the following command:**

```
# cd /cdrom/cdrom0/Solaris_x86
```
- 4 **Start the Sun Java Enterprise System Installation Wizard.**

```
# ./installer
```
- 5 **When you are prompted, accept the license agreement.**

If any Sun Java Enterprise System components are installed, you are prompted to select whether to upgrade the components or install new software.
- 6 **From the list of Sun Cluster agents under Availability Services, select the data service for Samba.**
- 7 **If you require support for languages other than English, select the option to install multilingual packages.**

English language support is always installed.
- 8 **When prompted whether to configure the data service now or later, choose Configure Later.**

Choose Configure Later to perform the configuration after the installation.
- 9 **Follow the instructions on the screen to install the data service packages on the node.**

The Sun Java Enterprise System Installation Wizard displays the status of the installation. When the installation is complete, the wizard displays an installation summary and the installation logs.
- 10 **(GUI only) If you do not want to register the product and receive product updates, deselect the Product Registration option.**

The Product Registration option is not available with the CLI. If you are running the Sun Java Enterprise System Installation Wizard with the CLI, omit this step
- 11 **Exit the Sun Java Enterprise System Installation Wizard.**
- 12 **Unload the Sun Java Availability Suite DVD-ROM from the DVD-ROM drive.**
  - a. **To ensure that the DVD-ROM is not being used, change to a directory that does *not* reside on the DVD-ROM.**

**b. Eject the DVD-ROM.**

```
# eject cdrom
```

**Next Steps** See [“Registering and Configuring Sun Cluster HA for Samba” on page 36](#) to register Sun Cluster HA for Samba and to configure the cluster for the data service.

## Registering and Configuring Sun Cluster HA for Samba

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

Some procedures within this section require you to use certain Sun Cluster commands. Refer to the relevant Sun Cluster command man page for more information about these command and their parameters.

### ▼ How to Register and Configure Sun Cluster HA for Samba

Determine if a single or multiple Samba instances will be deployed.

Refer to [“Restriction for multiple Samba instances that require winbind” on page 15](#) to determine how to deploy a single or multiple Samba instances with or without winbind.

Once you have determined how Samba will be deployed, you can chose one or more of the steps below.

**1 Create a failover resource group for Samba.**

Use [“How to Register and Configure Sun Cluster HA for Samba in a failover resource group” on page 37](#) for [Example 3](#) and [Example 4](#).

**2 Create a scalable resource group for winbind.**

Use [“How to Register and Configure Sun Cluster HA for Samba in a failover resource group with winbind in a scalable resource group” on page 40](#) for [Example 5](#).

**3 Create a failover resource group for a failover zone for Samba.**

Use [“How to Register and Configure Sun Cluster HA for Samba in a failover zone” on page 43](#) for [Example 6](#).

## ▼ How to Register and Configure Sun Cluster HA for Samba in a failover resource group

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 Samba packages as part of your initial Sun Cluster installation, go to [“How to Install the Sun Cluster HA for Samba Packages”](#) on page 34.

---

**Note** – Perform this procedure on one node of the cluster only.

---

- 1 **On a cluster member, become superuser or assume a role that provides `solaris.cluster.modify RBAC` authorization.**

- 2 **Register the following resource types.**

```
# clresourcetype register SUNW.HAStoragePlus
# clresourcetype register SUNW.gds
```

- 3 **Create a failover resource group for Samba.**

---

**Note** – Refer to [“Restriction for multiple Samba instances that require winbind”](#) on page 15 for more information on the *nodelist* entry.

---

```
# clresourcegroup create -n nodelist samba-resource-group
```

- 4 **Create a resource for the Samba Logical Hostname.**

```
# clreslogicalhostname create -g samba-resource-group \
> -h samba-logical-hostname \
> samba-logical-hostname-resource
```

- 5 **Create a resource for the Samba Disk Storage.**

- a. **If a ZFS highly available local file system is being used**

```
# clresource create -g samba-resource-group \
> -t SUNW.HAStoragePlus \
> -p Zpool=samba-zspool \
> samba-hastorage-resource
```

- b. **If a cluster file system or any other non-ZFS highly available local file system is being used**

```
# clresource create -g samba-resource-group \
> -t SUNW.HAStoragePlus \
```

```
> -p FilesystemMountPoints=samba-filesystem-mountpoint \
> samba-hastorage-resource
```

## 6 Bring online the failover resource group for Samba that now includes the HA Storage and Logical Hostname resources.

```
# clresourcegroup online -M samba-resource-group
```

## 7 If winbind is required, create and register a winbind resource

If Samba was dynamically linked and is being used as an Active Directory Server member you must configure the LDPATH variable to point to the Samba lib directory.

Edit the `samba_config` file and follow the comments within that file. Ensure that `SERVICES="winbindd"` is specified. After you have edited `samba_config`, you must register the resource.

```
# cd /opt/SUNWscsmb/util
# vi samba_config
# ./samba_register
```

The following deployment example has been taken from [Appendix B, “Deployment Example: Installing Samba from <http://www.samba.org>”](#).

```
Vigor5# cat > /var/tmp/winbind_config <<-EOF
#### Resource Specific Parameters +++
RS=winbind
RG=samba-rg
RS_LH=samba-lh
RS_HAS=sambaZFS-has
SERVICES="winbindd"

#### Common Parameters +++
BINDIR=/opt/samba/bin
SBINDIR=/opt/samba/sbin
CFGDIR=/local/samba/smb1
LDPATH=/opt/samba/lib
FMUSER=homer

#### SMBD & NMBD Specific Parameters (See Note 1) +++
SAMBA_LOGDIR=
SAMBA_FMPASS=
SAMBA_FMDOMAIN=

#### WINBIND Specific Parameters (See Note 2) +++
WINBIND_DISCCACHE=FALSE
WINBIND_SINGLEMODE=FALSE

#### Zone Specific Parameters (See Note 3) +++
RS_ZONE=
```

```
LHOST=
PROJECT=default
TIMEOUT=30
EOF
```

```
Vigor5# /opt/SUNWscsmb/util/samba_register -f /var/tmp/winbind_config
```

## 8 If winbind is required enable the resource.

```
# clresource enable winbind-resource
```

## 9 Create and register a Samba resource.

If Samba was dynamically linked and is being used as an Active Directory Server member you must configure the LDPATH variable to point to the Samba lib directory.

Edit the `samba_config` file and follow the comments within that file. Ensure that `SERVICES="smbd"` or `SERVICES="smbd, nmbd"` is specified. After you have edited `samba_config`, you must register the resource.

```
# cd /opt/SUNWscsmb/util
# vi samba_config
# ./samba_register
```

The following deployment example has been taken from [Appendix B, “Deployment Example: Installing Samba from <http://www.samba.org>”](#).

```
Vigor5# cat > /var/tmp/samba_config <<-EOF
#### Resource Specific Parameters ####
RS=samba
RG=samba-rg
RS_LH=samba-lh
RS_HAS=sambaZFS-has
SERVICES="smbd"

#### Common Parameters ####
BINDIR=/opt/samba/bin
SBINDIR=/opt/samba/sbin
CFGDIR=/local/samba/smb1
LDPATH=/opt/samba/lib
FMUSER=homer

#### SMBD & NMBD Specific Parameters (See Note 1) ####
SAMBA_LOGDIR=/local/samba/smb1/logs
SAMBA_FMPASS=smb4#ads
SAMBA_FMDOMAIN=

#### WINBIND Specific Parameters (See Note 2) ####
WINBIND_DISCACHE=
WINBIND_SINGLEMODE=
```

```
#+++ Zone Specific Parameters (See Note 3) +++
RS_ZONE=
LHOST=
PROJECT=default
TIMEOUT=30
EOF
```

```
Vigor5# /opt/SUNWscmb/util/samba_register -f /var/tmp/samba_config
```

- 10 If winbind is used, ensure Samba is dependent on winbind.

```
# clresource set -p Resource_dependencies=winbind-resource{local_node} samba-resource
```

- 11 Enable the Samba resource.

```
# clresource enable samba-resource
```

**Next Steps** See [“Verifying the Sun Cluster HA for Samba Installation and Configuration”](#) on page 45

## ▼ How to Register and Configure Sun Cluster HA for Samba in a failover resource group with winbind in a scalable resource group

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 Samba packages as part of your initial Sun Cluster installation, go to [“How to Install the Sun Cluster HA for Samba Packages”](#) on page 34.

---

**Note** – Perform this procedure on one node of the cluster only.

---

- 1 On a cluster member, become superuser or assume a role that provides `solaris.cluster.modify RBAC authorization`.
- 2 Register the following resource types.
 

```
# clresourcetype register SUNW.HASStoragePlus
# clresourcetype register SUNW.gds
```
- 3 Create a failover resource group for the winbind shared network address

---

**Note** – Refer to “[Restriction for multiple Samba instances that require winbind](#)” on page 15 for more information on the *nodelist* entry.

---

```
# clresourcegroup create -n nodelist winbind-failover-resource-group
```

#### 4 Create a resource for the winbind Logical Hostname.

```
# clressharedaddress create -g winbind-failover-resource-group \  
> -h winbind-logical-hostname \  
> winbind-logical-hostname-resource
```

#### 5 Create a scalable resource group for the scalable winbind resource

---

**Note** – Refer to “[Restriction for multiple Samba instances that require winbind](#)” on page 15 for more information on the *nodelist* entry.

---

```
# clresourcegroup create -n nodelist -S \  
> -p Maximum_primaries=maximum-number-active-primaries \  
> -p Desired_primaries=desired-number-active-primaries \  
> winbind-scalable-resource-group
```

#### 6 Create a resource for the winbind Disk Storage.

For a scalable HA Storage resource you must use a cluster file system.

```
# clresource create -g winbind-scalable-resource-group \  
> -t SUNW.HAStoragePlus \  
> -p FilesystemMountPoints=winbind-filesystem-mount-point \  
> -x AffinityOn=FALSE \  
> winbind-ha-storage-resource
```

#### 7 Enable the failover and scalable resource groups for winbind that now includes the HA Storage and Logical Hostname resources.

```
# clresourcegroup online -M winbind-failover-resource-group  
# clresourcegroup online -M winbind-scalable-resource-group
```

#### 8 Create and register a winbind resource

If Samba was dynamically linked and is being used as an Active Directory Server member you must configure the `LDAPATH` variable to point to the Samba lib directory.

Edit the `samba_config` file and follow the comments within that file. Ensure that `SERVICES="winbindd"` is specified. After you have edited `samba_config`, you must register the resource.

```
# cd /opt/SUNWscsmb/util
# vi samba_config
# ./samba_register
```

The following *modified* deployment example has been taken from [Appendix B, “Deployment Example: Installing Samba from <http://www.samba.org>”](#), which shows a *winbind-scalable-resource-group* and *winbind-ha-storage-resource*. The winbind configuration directory is also located in a cluster file system, `/global/samba/winbind`.

```
Vigor5# cat > /var/tmp/winbind_config <<-EOF
#### Resource Specific Parameters +++
RS=winbind
RG=winbindS-rg
RS_LH=winbind-lh
RS_HAS=winbindS-has
SERVICES="winbindd"

#### Common Parameters +++
BINDIR=/opt/samba/bin
SBINDIR=/opt/samba/sbin
CFGDIR=/global/samba/winbind
LDPPATH=/opt/samba/lib
FMUSER=homer

#### SMBD & NMBD Specific Parameters (See Note 1) +++
SAMBA_LOGDIR=
SAMBA_FMPASS=
SAMBA_FMDOMAIN=

#### WINBIND Specific Parameters (See Note 2) +++
WINBIND_DISCACHE=FALSE
WINBIND_SINGLEMODE=FALSE

#### Zone Specific Parameters (See Note 3) +++
RS_ZONE=
LHOST=
PROJECT=default
TIMEOUT=30
EOF

Vigor5# /opt/SUNWscsmb/util/samba_register -f /var/tmp/winbind_config
```

## 9 Enable the winbind resource.

```
# clresource enable winbind-resource
```

**10 Create and register a Samba resource in a failover resource group.**

Follow steps 3, 4, 5, 6, 9, 10 and 11 in [“How to Register and Configure Sun Cluster HA for Samba in a failover resource group”](#) on page 37.

**Next Steps** See [“Verifying the Sun Cluster HA for Samba Installation and Configuration”](#) on page 45

## ▼ How to Register and Configure Sun Cluster HA for Samba in a failover zone

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 Samba packages as part of your initial Sun Cluster installation, go to [“How to Install the Sun Cluster HA for Samba Packages”](#) on page 34.

---

**Note** – Perform this procedure on one node of the cluster only.

---

**1 Create a failover resource group for Samba.**

Follow steps 1, 2, 3, 4, 5 and 6 in [“How to Register and Configure Sun Cluster HA for Samba in a failover resource group”](#) on page 37.

**2 Register the failover zone in the failover resource group for Samba.**

Refer to *Sun Cluster Data Service for Solaris Containers Guide* for complete information about failover zones.

Edit the `sczbt_config` file and follow the comments within that file. Ensure that you specify the `samba-resource-group` for the `RG=` parameter within `sczbt_config`.

After you have edited `sczbt_config`, you must register the resource.

```
# cd /opt/SUNWsczone/sczbt/util
# vi sczbt_config
# ./sczbt_register
```

The following deployment example has been taken from [Appendix C, “Deployment Example: Installing Samba in a Failover Zone”](#).

```
Vigor5# cat > /var/tmp/sczbt_config <<-EOF
RS=sambaFOZ
RG=samba-rg
PARAMETERDIR=/zones
SC_NETWORK=true
SC_LH=samba-lh
FAILOVER=true
```

```
HAS_RS=sambaSVM-has , sambaZFS-has
```

```
Zonename=failover
```

```
Zonebootopt=
```

```
Milestone=multi-user-server
```

```
Mounts=/local
```

```
EOF
```

```
Vigor5#
```

```
Vigor5# /opt/SUNWsczone/sczbt/util/sczbt_register -f /var/tmp/sczbt_config
```

### 3 Enable the failover zone resource

```
# clresource enable samba-failover-zone-resource
```

### 4 If winbind is required, create and register a winbind resource

If Samba was dynamically linked and is being used as an Active Directory Server member you must configure the LDSPATH variable to point to the Samba lib directory.

Edit the `samba_config` file and follow the comments within that file. Ensure that `SERVICES="winbindd"` and the `RS_ZONE` variable specifies the Sun Cluster resource for the failover zone. After you have edited `samba_config`, you must register the resource.

```
# cd /opt/SUNWscsmb/util
```

```
# vi samba_config
```

```
# ./samba_register
```

### 5 If winbind is required, enable the winbind resource.

```
# clresource enable winbind-resource
```

### 6 Create and register a Samba resource

If Samba was dynamically linked and is being used as an Active Directory Server member you must configure the LDSPATH variable to point to the Samba lib directory.

Edit the `samba_config` file and follow the comments within that file. Ensure that `SERVICES="smbd"` or `SERVICES="smbd, nmbd"` and the `RS_ZONE` variable specifies the Sun Cluster resource for the failover zone. After you have edited `samba_config`, you must register the resource.

```
# cd /opt/SUNWscsmb/util
```

```
# vi samba_config
```

```
# ./samba_register
```

The following deployment example has been taken from [Appendix C, “Deployment Example: Installing Samba in a Failover Zone”](#).

```
Vigor5# cat > /var/tmp/samba_config <<-EOF
```

```
#### Resource Specific Parameters ####
```

```
RS=samba
```

```
RG=samba-rg
```

```

RS_LH=samba-lh
RS_HAS=sambaZFS-has
SERVICES="smbd,nmbd"

#### Common Parameters ####
BINDIR=/usr/sfw/bin
SBINDIR=/usr/sfw/sbin
CFGDIR=/local/samba/smb1
LDAPATH=/usr/sfw/lib
FMUSER=homer

#### SMBD & NMBD Specific Parameters (See Note 1) ####
SAMBA_LOGDIR=/local/samba/smb1/logs
SAMBA_FMPASS=samba
SAMBA_FMDOMAIN=

#### WINBIND Specific Parameters (See Note 2) ####
WINBIND_DISCACHE=FALSE
WINBIND_SINGLEMODE=FALSE

#### Zone Specific Parameters (See Note 3) ####
RS_ZONE=sambaFOZ
LHOST=192.168.1.132
PROJECT=default
TIMEOUT=30
EOF
Vigor5#
Vigor5# /opt/SUNWscsmb/util/samba_register -f /var/tmp/samba_config

```

**7** If winbind is used, ensure Samba is dependent on winbind.

```
# clresource set -p Resource_dependencies=winbind-resource{local_node} samba-resource
```

**8** Enable the Samba resource.

```
# clresource enable samba-resource
```

**Next Steps** See “Verifying the Sun Cluster HA for Samba Installation and Configuration” on page 45

## Verifying the Sun Cluster HA for Samba 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 Samba Installation and Configuration

- 1 **On a cluster member, become superuser or assume a role that provides `solaris.cluster.modify` RBAC authorization.**
- 2 **Ensure all the Samba resources are online.**  

```
# cluster status
```

Enable any Samba or winbind resource that is not online.

```
# clresource enable samba-resource
```
- 3 **Switch the Samba resource group to another cluster node.**  

```
# clresourcegroup switch -n node samba-resource-group
```

## Upgrading Sun Cluster HA for Samba

Upgrade the Sun Cluster HA for Samba data service if the following conditions apply:

- You are upgrading from an earlier version of the Sun Cluster HA for Samba data service.
- You need to use the new features of this data service.

## ▼ How to Migrate Existing Resources to a New Version of Sun Cluster HA for Samba

Perform steps 1, 2, 3 and 6 if you have an existing Sun Cluster HA for Samba deployment and wish to upgrade to the new version. Complete all steps if you need to use the new features of this data service.

- 1 **On a cluster member, become superuser or assume a role that provides `solaris.cluster.modify` RBAC authorization.**
- 2 **Disable the Samba resources.**  

```
# clresource disable samba-resource
```
- 3 **Install the new version of Sun Cluster HA for Samba to each cluster**  
Refer to “[How to Install the Sun Cluster HA for Samba Packages](#)” on page 34 for more information.

- 4 **Delete the Samba resources, if you want to use new features that have been introduced in the new version of Sun Cluster HA for Samba.**

```
# clresource delete samba-resource
```

- 5 **Reregister the Samba resources, if you want to use new features that have been introduced in the new version of Sun Cluster HA for Samba.**

Refer to “[How to Register and Configure Sun Cluster HA for Samba](#)” on page 36 for more information.

- 6 **Enable the Samba resources**

If you have only performed steps 1, 2 and 3 you will need to re-enable the Samba resources.

```
# clresource enable samba-resource
```

## Understanding the Sun Cluster HA for Samba Fault Monitor

This section describes the Sun Cluster HA for Samba 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 Samba 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 Sun Cluster HA for Samba fault monitor is controlled by the extension properties that control the probing frequency. The default values of these properties determine the preset behavior of the fault monitor. The preset behavior should be suitable for most Sun Cluster installations. Therefore, you should tune the Sun Cluster HA for Samba fault monitor *only* if you need to modify this preset behavior.

- Setting the interval between fault monitor probes (Thorough\_probe\_interval)
- Setting the time-out for fault monitor probes (Probe\_timeout)
- Setting the number of times the fault monitor attempts to restart the resource (Retry\_count)

The Sun Cluster HA for Samba fault monitor checks the smbd, nmbd, and winbindd components within an infinite loop. During each cycle the fault monitor will check the relevant component and report either a failure or success.

If the fault monitor is successful it returns to its infinite loop and continues the next cycle of probing and sleeping.

If the fault monitor reports a failure a request is made to the cluster to restart the resource. If the fault monitor reports another failure another request is made to the cluster to restart the resource. This behavior will continue whenever the fault monitor reports a failure.

If successive restarts exceed the `Retry_count` within the `Thorough_probe_interval` a request to failover the resource group onto a different node or zone is made.

## Operations of the winbind probe

---

**Note** – The `winbindd` daemon resolves user and group information as a service to the Name Service Switch. When running `winbindd` the Name Service Cache daemon must be turned off. To disable this refer to [Step 4](#) in “[How to Prepare Samba for Sun Cluster HA for Samba](#)” on [page 25](#).

---

The winbind fault monitor periodically checks that the fault monitor user can be retrieved by using `getent passwd samba-fault-monitor-user`.

## Operations of the Samba probe

The Samba probe checks the `nmbd` daemon using the `nmblookup` program for each interface specified within the `smb.conf` file.

The Samba probe checks the `smbd` daemon using the `smbclient` program together with the `samba-fault-monitor-user` to access the `smondir` share.

If `smbclient` cannot connect, there could be network/server issues causing `smbclient` to fail. These errors maybe transient and correctable within a few seconds. Therefore before a failure is called by the probe, `smbclient` is retried within 85% of the available `Probe_timeout` less 15 seconds, which is approximately the time-out for the first `smbclient` failure.

However, doing this is only realistic if `Probe_timeout=30` seconds or more. If `Probe_timeout` is below 30 seconds then `smbclient` is tried only once.

# Debug Sun Cluster HA for Samba

## ▼ How to turn on debug for Sun Cluster HA for Samba

Sun Cluster HA for Samba can be used by multiple Samba or winbind instances. It is possible to turn debug on for all Samba or winbind instances or a particular Samba or winbind instance.

A `config` file exists under `/opt/SUNWcsmb/xxx/etc`, where `xxx` refers to `samba` or `winbind`.

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

**1 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 `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
```

Restart the `syslog` daemon.

**a. If running Solaris 9**

```
# pkill -1 syslogd
```

**b. If running Solaris 10**

```
# svcadm disable system-log
# svcadm enable system-log
```

**2 Edit /opt/SUNWscsmb/xxx/config.**

Perform this step for the `samba` or `winbind` components that require debug output, on each node of Sun Cluster as required.

Edit `/opt/SUNWscsmb/xxx/etc/config` and change `DEBUG=` to `DEBUG=ALL` or `DEBUG=resource`.

```
# cat /opt/SUNWscsmb/samba/etc/config
#
# Copyright 2006 Sun Microsystems, Inc. All rights reserved.
# Use is subject to license terms.
#
#ident      "@(#)config 1.1      06/03/21 SMI"
#
# Usage:
#      DEBUG=<RESOURCE_NAME> or ALL
#
DEBUG=ALL
```

---

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

---

## Deployment Example: Installing Samba packaged with Solaris 10

---

This appendix presents a complete example of how to install and configure the Samba application and data service in the global and non-global zone. It presents a simple node cluster configuration. If you need to install the application in any other configuration, refer to the general-purpose procedures presented elsewhere in this manual.

### Target Cluster Configuration

This example uses a single-node cluster with the following node and zone names:

Vigor5	The physical node, which owns the file system.
Vigor5:whole	A whole root non-global zone named whole.
Vigor5:sparse	A sparse root non-global zone named sparse.

### Software Configuration

This deployment example uses the following software products and versions:

- Solaris 10 6/06 software for SPARC or x86 platforms
- Sun Cluster 3.2 core software
- Sun Cluster HA for Samba data service
- Samba packaged with Solaris 10

This example assumes that you have already installed and established your cluster. It illustrates installation and configuration of the data service application only.

## Assumptions

The instructions in this example were developed with the following assumptions:

- **Shell environment:** All commands and the environment setup in this example are for the Korn shell environment. If you use a different shell, replace any Korn shell-specific information or instructions with the appropriate information for your preferred shell environment.
- **User login:** Unless otherwise specified, perform all procedures as superuser or assume a role that provides `solaris.cluster.admin`, `solaris.cluster.modify`, and `solaris.cluster.read` RBAC authorization.

## Installing and Configuring Samba packaged with Solaris 10

---

**Note** – This deployment example is designed for a single-node cluster. It is provided simply as a concise guide to help you if you need to refer to an installation and configuration of Samba.

This deployment example is *not* meant to be a precise guide as there are several alternate ways to install and configure Samba.

If you need to install Samba in any other configuration, refer to the general purpose procedures elsewhere in this manual.

---

The instructions with this deployment example assumes that you are using the Samba software packaged with Solaris 10 and will configure Samba on a ZFS highly available local file system .

The cluster resource group will be configured to failover between the global zone and two non-global zones on a single node cluster.

The tasks you must perform to install and configure Samba in the global and non-global zones are as follows:

- [“Example: Prepare the Cluster for Samba” on page 53](#)
- [“Example: Configure the Non-Global Zones” on page 53](#)
- [“Example: Configure Cluster Resources for Samba” on page 55](#)
- [“Example: Create the Samba  `smb . conf` Configuration File” on page 55](#)
- [“Example: Verify Samba” on page 56](#)
- [“Example: Enable the Samba Software to Run in the Cluster” on page 57](#)
- [“Example: Verify the Sun Cluster HA for Samba resource group” on page 58](#)

## ▼ Example: Prepare the Cluster for Samba

- 1 **Install and configure the cluster as instructed in *Sun Cluster Software Installation Guide for Solaris OS*.**

Install the following cluster software components on node Vigor5.

- Sun Cluster core software
- Sun Cluster data service for Samba

- 2 **Add the logical host name to `/etc/hosts` and `/etc/inet/ipnodes`**

```
Vigor5# grep SMB1 /etc/hosts /etc/inet/ipnodes
/etc/hosts:192.168.1.132    SMB1#20
/etc/inet/ipnodes:192.168.1.132    SMB1#20
```

- 3 **Install and configure a Zettabyte File System**

- a. **Create a ZFS pool.**

---

**Note** – The following `zpool` definition represents a very basic configuration for deployment on a single-node cluster.

You should *not* consider this example for use within a productive deployment, instead it is a very basic configuration for testing or development purposes only.

---

```
Vigor5# zpool create -m /local HAZpool c1t1d0
```

- b. **Create a ZFS**

```
Vigor5# zfs create HAZpool/samba
```

- 4 **Create the Samba Fault Monitor Userid in the Global Zone**

```
Vigor5# groupadd -g 1000 samba
Vigor5# useradd -u 1000 -g 1000 -s /bin/false homer
```

## ▼ Example: Configure the Non-Global Zones

In this task you will install two Solaris Containers on node Vigor5.

- 1 **On local cluster storage create a directory for the non-global zones root path.**

```
Vigor5# mkdir /zones
```

- 2 Create a temporary file for the whole root zone, for example /tmp/whole, and include the following entries:**

```
Vigor5# cat > /tmp/whole <<-EOF
create -b
set zonepath=/zones/whole
EOF
```

- 3 Create a temporary file for the sparse root zone, for example /tmp/sparse, and include the following entries:**

```
Vigor5# cat > /tmp/sparse <<-EOF
create
set zonepath=/zones/sparse
EOF
```

- 4 Configure the non-global zones, using the files you created.**

```
Vigor5# zonecfg -z whole -f /tmp/whole
Vigor5# zonecfg -z sparse -f /tmp/sparse
```

- 5 Install the zones.**

Open two windows and issue the following command in each window.

```
Vigor5# zoneadm -z whole install
Vigor5# zoneadm -z sparse install
```

- 6 Boot the zones.**

```
Vigor5# zoneadm -z whole boot
Vigor5# zoneadm -z sparse boot
```

- 7 Log in to the zones and complete the zone system identification.**

```
Vigor5# zlogin -C whole
Vigor5# zlogin -C sparse
```

- 8 Close the terminal windows and disconnect from the zone consoles.**

After you have completed the zone system identification, disconnect from the two windows your previously opened.

```
Vigo5# ~.
```

- 9 Create local mount points for the HA-ZFS file system with in the zones.**

```
Vigor5# zlogin whole mkdir /local
Vigor5# zlogin sparse mkdir /local
```

**10 Create the Samba Fault Monitor Userid in the zones.**

```
Vigor5# zlogin whole groupadd -g 1000 samba
Vigor5# zlogin sparse groupadd -g 1000 samba
Vigor5# zlogin whole useradd -u 1000 -g 1000 -s /bin/false homer
Vigor5# zlogin sparse useradd -u 1000 -g 1000 -s /bin/false homer
```

**▼ Example: Configure Cluster Resources for Samba****1 Register the necessary data types on the single node cluster**

```
Vigor5# clresourcetype register SUNW.gds SUNW.HASStoragePlus
```

**2 Create the Samba resource group.**

```
Vigor5# clresourcegroup create -n Vigor5,Vigor5:whole,Vigor5:sparse samba-rg
```

**3 Create the logical host.**

```
Vigor5# clreslogicalhostname create -g samba-rg -h SMB1 samba-lh
```

**4 Create the HASStoragePlus resource in the samba-rg resource group.**

```
Vigor5# clresource create -g samba-rg -t SUNW.HASStoragePlus \
> -p Zpools=HAZpool sambaZFS-has
```

**5 Enable the resource group.**

```
Vigor5# clresourcegroup online -M samba-rg
```

**▼ Example: Create the Samba smb.conf Configuration File****1 Create the Samba Configuration Directory.**

```
Vigor5# mkdir -p /local/samba/smb1
Vigor5# cd /local/samba/smb1
Vigor5# mkdir -p lib logs private shares var/locks
```

**2 Create the Samba smb.conf Configuration File.**

```
Vigor5# cat > /local/samba/smb1/lib/smb.conf <<-EOF
[global]
    workgroup = PDC
    bind interfaces only = yes
    interfaces = SMB1/255.255.255.0
    netbios name = SMB1
```

```

security = user
server string = Samba (%v) domain (%h)
pid directory = /local/samba/smb1/var/locks
log file = /local/samba/smb1/logs/log.%m
smb passwd file = /local/samba/smb1/private/smbpasswd
private dir = /local/samba/smb1/private
lock dir = /local/samba/smb1/var/locks
domain logons = yes
domain master = yes
preferred master = yes

[scmondird]
comment = Monitor directory for Sun Cluster
path = /tmp
browseable = No
EOF

```

### 3 Test the Samba smb.conf Configuration File.

```
Vigor5# /usr/sfw/bin/testparm -s /local/samba/smb1/lib/smb.conf
```

### 4 Add the Samba Fault Monitor Userid.

---

**Note** – You should specify samba as the password, otherwise you will need to change the SAMBA\_FMPASS variable in [Step 1](#) in “[Example: Enable the Samba Software to Run in the Cluster](#)” on page 57

---

```
Vigor5# /usr/sfw/bin/smbpasswd -c /local/samba/smb1/lib/smb.conf -a homer
```

## ▼ Example: Verify Samba

### 1 Start Samba using the smbd program.

```
Vigor5# /usr/sfw/sbin/smbd -s /local/samba/smb1/lib/smb.conf -D
```

### 2 Connect to Samba using the smbclient program.

```

Vigor5# /usr/sfw/bin/smbclient -N -L SMB1 -s /local/samba/smb1/lib/smb.conf
Vigor5#
Vigor5# /usr/sfw/bin/smbclient '\\SMB1\scmondird' -U homer -c 'pwd;exit' \
> -s /local/samba/smb1/lib/smb.conf

```

### 3 Stop Samba.

```
Vigor5# pkill -TERM smbd
```

## ▼ Example: Enable the Samba Software to Run in the Cluster

### 1 Create the Sun Cluster HA for Samba Configuration file.

```
Vigor5# cat > /var/tmp/samba_config <<-EOF
### Resource Specific Parameters ###
RS=samba
RG=samba-rg
RS_LH=samba-lh
RS_HAS=sambaZFS-has
SERVICES="smbd,nmbd"

### Common Parameters ###
BINDIR=/usr/sfw/bin
SBINDIR=/usr/sfw/sbin
CFGDIR=/local/samba/smb1
LDPPATH=/usr/sfw/lib
FMUSER=homer

### SMBD & NMBD Specific Parameters (See Note 1) ###
SAMBA_LOGDIR=/local/samba/smb1/logs
SAMBA_FMPASS=samba
SAMBA_FMDOMAIN=

### WINBIND Specific Parameters (See Note 2) ###
WINBIND_DISCACHE=FALSE
WINBIND_SINGLEMODE=FALSE

### Zone Specific Parameters (See Note 3) ###
RS_ZONE=
LHOST=
PROJECT=default
TIMEOUT=30
EOF
```

### 2 Register the Sun Cluster HA for Samba data service.

```
Vigor5# /opt/SUNWscsmb/util/samba_register -f /var/tmp/samba_config
```

### 3 Enable the resource.

```
Vigor5# clresource enable samba
```

## ▼ **Example: Verify the Sun Cluster HA for Samba resource group**

- **Switch the Samba resource between the Global zone and Non-Global zones.**

```
Vigor5# for node in Vigor5:whole Vigor5:sparse Vigor5
do
  clrg switch -n $node samba-rg
  clr status samba
  clrg status samba-rg
done
```

# Deployment Example: Installing Samba from <http://www.samba.org>

---

This appendix presents a complete example of how to install and configure the Samba application and data service in the global and non-global zone. It presents a simple node cluster configuration. If you need to install the application in any other configuration, refer to the general-purpose procedures presented elsewhere in this manual.

## Target Cluster Configuration

This example uses a single-node cluster with the following node and zone names:

Vigor5	The physical node, which owns the file system.
Vigor5:whole	A whole root non-global zone named whole.
Vigor5:sparse	A sparse root non-global zone named sparse.

## Software Configuration

This deployment example uses the following software products and versions:

- Solaris 10 6/06 software for SPARC or x86 platforms
- Sun Cluster 3.2 core software
- Sun Cluster HA for Samba data service
- Sun Studio 11
- wget program
- Samba download from <http://www.samba.org>

This example assumes that you have already installed and established your cluster. It illustrates installation and configuration of the data service application only.

## Assumptions

The instructions in this example were developed with the following assumptions:

- **Shell environment:** All commands and the environment setup in this example are for the Korn shell environment. If you use a different shell, replace any Korn shell-specific information or instructions with the appropriate information for your preferred shell environment.
- **User login:** Unless otherwise specified, perform all procedures as superuser or assume a role that provides `solaris.cluster.admin`, `solaris.cluster.modify`, and `solaris.cluster.read` RBAC authorization.

## Installing and Configuring Samba downloaded from <http://www.samba.org>

---

**Note** – This deployment example is designed for a single-node cluster. It is provided simply as a concise guide to help you if you need to refer to an installation and configuration of Samba.

This deployment example is *not* meant to be a precise guide as there are several alternate ways to install and configure Samba.

If you need to install Samba in any other configuration, refer to the general purpose procedures elsewhere in this manual.

---

The instructions within this deployment example assume that you are using the Samba downloaded from <http://www.samba.org> and will configure Samba on a ZFS highly available local file system .

Samba will be configured as an Active Directory Member Server. You will need access to a Windows 2003 Enterprise Server configured as an Active Directory Server as within this deployment example the Samba server will join the Active Directory Server.

The cluster resource group will be configured to failover between the global zone and two non-global zones on a single node cluster.

The tasks you must perform to install and configure Samba in the global and non-global zones are as follows:

- “[Example: Preparing the Cluster for Samba](#)” on page 61
- “[Example: Configuring the Non-Global Zones](#)” on page 62
- “[Example: Configuring Cluster Resources for Samba](#)” on page 63

- “Example: Download and Configure Samba from <http://www.samba.org>” on page 63
- “Example: Create the Samba `smb.conf` Configuration File” on page 66
- “Example: Verify winbind and Samba” on page 67
- “Example: Enabling the Samba Software to Run in the Cluster” on page 67
- “Example: Verify the Sun Cluster HA for Samba resource group” on page 69

## ▼ Example: Preparing the Cluster for Samba

### 1 Install and configure the cluster as instructed in *Sun Cluster Software Installation Guide for Solaris OS*.

Install the following cluster software components on node `Vigor5`.

- Sun Cluster core software
- Sun Cluster data service for Samba

### 2 Install the following utility software

Install the following utility software on node `Vigor5`.

- `wget`
- Sun Studio 11

### 3 Add the logical host name and ADS host name to `/etc/hosts` and `/etc/inet/ipnodes`

```
Vigor5# egrep -e 'SMB1|ADS' /etc/hosts /etc/inet/ipnodes
/etc/hosts:192.168.1.9    ADS#20
/etc/hosts:192.168.1.132  SMB1#20
/etc/inet/ipnodes:192.168.1.9    ADS#20
/etc/inet/ipnodes:192.168.1.132  SMB1#20
```

### 4 Install and configure a Zettabyte File System

---

**Note** – The following `zpool` definition represents a very basic configuration for deployment on a single-node cluster.

You should *not* consider this example for use within a productive deployment, instead it is a very basic configuration for testing or development purposes only.

---

#### a. Create a ZFS pool.

```
Vigor5# zpool create -m /local HAZpool c1t1d0s2 c1t2d0s2
```

#### b. Create a ZFS

```
Vigor5# zfs create HAZpool/samba
```

## ▼ Example: Configuring the Non-Global Zones

In this task you will install two Solaris Containers on Vigor5.

- 1 **On local cluster storage create a directory for the non-global zones root path.**

```
Vigor5# mkdir /zones
```

- 2 **Create a temporary file for the whole root zone, for example /tmp/whole, and include the following entries:**

```
Vigor5# cat > /tmp/whole <<-EOF
create -b
set zonepath=/zones/whole
EOF
```

- 3 **Create a temporary file for the sparse root zone, for example /tmp/sparse, and include the following entries:**

```
Vigor5# cat > /tmp/sparse <<-EOF
create
set zonepath=/zones/sparse
EOF
```

- 4 **Configure the non-global zones, using the files you created.**

```
Vigor5# zonecfg -z whole -f /tmp/whole
Vigor5# zonecfg -z sparse -f /tmp/sparse
```

- 5 **Install the zones.**

Open two windows and issue the following command in each window.

```
Vigor5# zoneadm -z whole install
Vigor5# zoneadm -z sparse install
```

- 6 **Boot the zones.**

```
Vigor5# zoneadm -z whole boot
Vigor5# zoneadm -z sparse boot
```

- 7 **Log in to the zones and complete the zone system identification.**

```
Vigor5# zlogin -C whole
Vigor5# zlogin -C sparse
```

- 8 **Close the terminal windows and disconnect from the zone consoles.**

After you have completed the zone system identification, disconnect from the two windows your previously opened.

```
Vigo5# ~.
```

- 9 Create local mount points for the HA-ZFS file system with in the zones.

```
Vigor5# zlogin whole mkdir /local
Vigor5# zlogin sparse mkdir /local
```

## ▼ Example: Configuring Cluster Resources for Samba

- 1 Register the necessary data types on the single node cluster

```
Vigor5# clresourcetype register SUNW.gds SUNW.HASStoragePlus
```

- 2 Create the Samba resource group.

```
Vigor5# clresourcegroup create -n Vigor5,Vigor5:whole,Vigor5:sparse samba-rg
```

- 3 Create the logical host.

```
Vigor5# clreslogicalhostname create -g samba-rg -h SMB1 samba-lh
```

- 4 Create the HASStoragePlus resource in the samba-rg resource group.

```
Vigor5# clresource create -g samba-rg -t SUNW.HASStoragePlus \
> -p Zpools=HAZpool sambaZFS-has
```

- 5 Enable the resource group.

```
Vigor5# clresourcegroup online -M samba-rg
```

## ▼ Example: Download and Configure Samba from <http://www.samba.org>

- 1 Setup your PATH environment.

---

**Note** – You PATH must contain the wget utility.

---

```
Vigor5# PATH=/usr/cluster/bin:/opt/SUNWspro/bin:/usr/sfw/bin: \
> /usr/sbin:/usr/bin:/usr/ccs/bin
Vigor5# export PATH
```

- 2 Setup install directories in the global zone

```
Vigor5# cd /local/samba
Vigor5# mkdir 3.2.22 software
Vigor5# ln -s 3.0.22 latest
Vigor5# ln -s /local/samba/latest /opt/samba
```

### 3 Setup install directories in the non-global zones

```
Vigor5# zlogin whole ln -s /local/samba/latest /opt/samba
Vigor5# zlogin sparse ln -s /local/samba/latest /opt/samba
```

### 4 Download, Extract and Install Kerberos.

```
Vigor5# cd /local/samba/software
Vigor5# wget http://web.mit.edu/kerberos/dist/krb5/1.4/krb5-1.4.3-signed.tar
Vigor5# tar -xfBp krb5*tar
Vigor5# gunzip -c krb5*.tar.gz | tar -xfBp -
Vigor5# rm krb5*tar*
Vigor5# cd krb5*/src
Vigor5# CC=/opt/SUNWspro/bin/cc ./configure --prefix=/opt/samba \
> --enable-dns-for-realm
Vigor5# make
Vigor5# make install
```

### 5 Download, Extract and Install OpenLDAP.

---

**Note** – You must obtain a fix for Bug ID: 6419029 which describes a problem when compiling OpenLDAP before proceeding with this step.

---

```
Vigor5# cd /local/samba/software
Vigor5# wget ftp://ftp.openldap.org/pub/OpenLDAP/openldap-release/openldap-2.3.24.tgz
Vigor5# gunzip -c openldap-2.3.24.tgz | tar -xfBp -
Vigor5# rm openldap-2.3.24.tgz
Vigor5# cd openldap*
Vigor5# CC=/opt/SUNWspro/bin/cc \
> CPPFLAGS="-I/opt/samba/include" \
> LDFLAGS="-L/opt/samba/lib -R/opt/samba/lib" ./configure --prefix=/opt/samba \
> --disable-slapd --disable-slurpd
Vigor5# make depend
Vigor5# make
Vigor5# make install
```

### 6 Download, Extract and Install Samba.

```
Vigor5# cd /local/samba/software
Vigor5# wget http://us3.samba.org/samba/ftp/old-versions/samba-3.0.22.tar.gz
Vigor5# gunzip -c samba-3.0.22.tar.gz | tar -xfBp -
Vigor5# rm samba-3.0.22.tar.gz
Vigor5# cd samba*/source
Vigor5# CC=/opt/SUNWspro/bin/cc \
> CFLAGS=-I/opt/samba/include \
> LDFLAGS="-L/opt/samba/lib -R/opt/samba/lib" ./configure --prefix=/opt/samba \
> --with-ads --with-krb5=/opt/samba --with-shared-modules=idmap_rid
```

```
Vigor5# make
Vigor5# make install
```

## 7 Copy and symlink winbind files in the global zone.

```
Vigor5# cd /local/samba/software
Vigor5# cp nsswitch/libnss_winbind.so /usr/lib
Vigor5# ln -s /usr/lib/libnss_winbind.so /usr/lib/libnss_winbind.so.1
Vigor5# ln -s /usr/lib/libnss_winbind.so /usr/lib/nss_winbind.so.1
```

## 8 Copy and symlink winbind files in the non-global zones.

---

**Note** – The sparse zone inherits /usr/lib, so this step is only required for the whole zone.

---

```
Vigor5# cd /local/samba/software
Vigor5# cp nsswitch/libnss_winbind.so /zones/whole/root/usr/lib
Vigor5# ln -s /usr/lib/libnss_winbind.so /zones/whole/root/usr/lib/libnss_winbind.so.1
Vigor5# ln -s /usr/lib/libnss_winbind.so /zones/whole/root/usr/lib/nss_winbind.so.1
```

## 9 Setup and symlink the Kerberos krb5.conf file in the global zone.

```
Vigor5# cat > /etc/krb5.conf <<-EOF
[libdefaults]
    default_realm = ADS.EXAMPLE.COM

[realms]
    ADS.EXAMPLE.COM = {
        kdc = 192.168.1.9
        admin_server = 192.168.1.9
    }

[domain_realm]
    .your.domain.name = ADS.EXAMPLE.COM
    your.domain.name = ADS.EXAMPLE.COM
EOF
Vigor5#
Vigor5# rm /etc/krb5/krb5.conf
Vigor5# ln -s /etc/krb5.conf /etc/krb5/krb5.conf
```

## ▼ Example: Create the Samba `smb.conf` Configuration File

### 1 Create the Samba Configuration Directory.

```
Vigor5# mkdir -p /local/samba/smb1
Vigor5# cd /local/samba/smb1
Vigor5# mkdir -p lib logs private shares var/locks
```

### 2 Create the Samba `smb.conf` Configuration File.

```
Vigor5# cat > /local/samba/smb1/lib/smb.conf <<-EOF
[global]
    workgroup = ADS
    bind interfaces only = yes
    interfaces = SMB1/255.255.255.0
    netbios name = SMB1
    security = ADS
    realm = ADS.EXAMPLE.COM
    password server = ADS.EXAMPLE.COM
    server string = Samba (%v) domain (%h)
    pid directory = /local/samba/smb1/var/locks
    log file = /local/samba/smb1/logs/log.%m
    smb passwd file = /local/samba/smb1/private/smbpasswd
    private dir = /local/samba/smb1/private
    lock dir = /local/samba/smb1/var/locks

    winbind cache time = 30
    allow trusted domains = no
    idmap backend = rid:ADS=100000-200000
    idmap uid = 100000-200000
    idmap gid = 100000-200000
    winbind enum groups = yes
    winbind enum users = yes
    winbind use default domain = yes

[scomndir]
    comment = Monitor directory for Sun Cluster
    path = /tmp
    browseable = No
EOF
```

### 3 Test the Samba `smb.conf` Configuration File.

```
Vigor5# /opt/samba/bin/testparm -s /local/samba/smb1/lib/smb.conf
```

#### 4 Join the Active Directory Server .

```
Vigor5# /opt/samba/bin/net -s /local/samba/smb1/lib/smb.conf ads join -U Administrator
```

## ▼ Example: Verify winbind and Samba

#### 1 Start winbind using the winbindd program.

```
Vigor5# /opt/samba/sbin/winbindd -s /local/samba/smb1/lib/smb.conf
Vigor5# getent passwd
Vigor5# getent group
Vigor5# getent passwd homer
```

#### 2 Start Samba using the smbd program.

```
Vigor5# /opt/samba/sbin/smbd -s /local/samba/smb1/lib/smb.conf -D
```

#### 3 Connect to Samba using the smbclient program.

```
Vigor5# /opt/samba/bin/smbclient -N -L SMB1 -s /local/samba/smb1/lib/smb.conf
Vigor5#
Vigor5# /opt/samba/bin/smbclient '\\SMB1\scmondird' -U homer -c 'pwd;exit' \
> -s /local/samba/smb1/lib/smb.conf
```

#### 4 Stop Samba and winbind.

```
Vigor5# pkill -TERM smbd
Vigor5# pkill -TERM winbindd
```

## ▼ Example: Enabling the Samba Software to Run in the Cluster

#### 1 Create the Sun Cluster HA for Samba Configuration file for winbind

```
Vigor5# cat > /var/tmp/winbind_config <<-EOF
#### Resource Specific Parameters +++
RS=winbind
RG=samba-rg
RS_LH=samba-lh
RS_HAS=sambaZFS-has
SERVICES="winbindd"

#### Common Parameters +++
BINDIR=/opt/samba/bin
SBINDIR=/opt/samba/sbin
CFGDIR=/local/samba/smb1
```

```
LDPATH=/opt/samba/lib
FMUSER=homer

#### SMBD & NMBD Specific Parameters (See Note 1) ####
SAMBA_LOGDIR=
SAMBA_FMPASS=
SAMBA_FMDOMAIN=

#### WINBIND Specific Parameters (See Note 2) ####
WINBIND_DISCCACHE=FALSE
WINBIND_SINGLEMODE=FALSE

#### Zone Specific Parameters (See Note 3) ####
RS_ZONE=
LHOST=
PROJECT=default
TIMEOUT=30
EOF
```

## 2 Create the Sun Cluster HA for Samba Configuration file for Samba

```
Vigor5# cat > /var/tmp/samba_config <<-EOF
#### Resource Specific Parameters ####
RS=samba
RG=samba-rg
RS_LH=samba-lh
RS_HAS=sambaZFS-has
SERVICES="smbd"

#### Common Parameters ####
BINDIR=/opt/samba/bin
SBINDIR=/opt/samba/sbin
CFGDIR=/local/samba/smb1
LDPATH=/opt/samba/lib
FMUSER=homer

#### SMBD & NMBD Specific Parameters (See Note 1) ####
SAMBA_LOGDIR=/local/samba/smb1/logs
SAMBA_FMPASS=smb4#ads
SAMBA_FMDOMAIN=

#### WINBIND Specific Parameters (See Note 2) ####
WINBIND_DISCCACHE=
WINBIND_SINGLEMODE=

#### Zone Specific Parameters (See Note 3) ####
RS_ZONE=
LHOST=
```

```
PROJECT=default
TIMEOUT=30
EOF
```

### 3 Register the Sun Cluster HA for Samba data service for winbind and Samba

```
Vigor5# /opt/SUNWscsmb/util/samba_register -f /var/tmp/winbind_config
Vigor5# /opt/SUNWscsmb/util/samba_register -f /var/tmp/samba_config
```

### 4 Make the Samba resource dependent on winbind the resources.

```
Vigor5# clresource set -p Resource_dependencies=winbind{local_node} samba
```

### 5 Enable the resources.

```
Vigor5# clresource enable winbind
Vigor5# clresource enable samba
```

## ▼ Example: Verify the Sun Cluster HA for Samba resource group

### ● Switch the Samba resource between the Global zone and Non-Global zones.

```
Vigor5# for node in Vigor5:whole Vigor5:sparse Vigor5
do
    clrg switch -n $node samba-rg
    clrs status samba
    clrg status samba-rg
done
```



## Deployment Example: Installing Samba in a Failover Zone

---

This appendix presents a complete example of how to install and configure the Samba application and data service in a failover zone. It presents a simple node cluster configuration. If you need to install the application in any other configuration, refer to the general-purpose procedures presented elsewhere in this manual.

### Target Cluster Configuration

This example uses a single-node cluster with the following node and zone names:

<code>Vigor5</code>	The physical node, which owns the file system.
<code>Vigor5:failover</code>	A sparse root non-global zone named <code>failover</code> .

### Software Configuration

This deployment example uses the following software products and versions:

- Solaris 10 6/06 software for SPARC or x86 platforms
- Sun Cluster 3.2 core software
- Sun Cluster HA for Samba data service
- Samba packaged with Solaris 10

This example assumes that you have already installed and established your cluster. It illustrates installation and configuration of the data service application only.

## Assumptions

The instructions in this example were developed with the following assumptions:

- **Shell environment:** All commands and the environment setup in this example are for the Korn shell environment. If you use a different shell, replace any Korn shell-specific information or instructions with the appropriate information for your preferred shell environment.
- **User login:** Unless otherwise specified, perform all procedures as superuser or assume a role that provides `solaris.cluster.admin`, `solaris.cluster.modify`, and `solaris.cluster.read` RBAC authorization.

## Installing and Configuring Samba in a Failover Zone

---

**Note** – This deployment example is designed for a single-node cluster. It is provided simply as a concise guide to help you if you need to refer to an installation and configuration of Samba.

This deployment example is *not* meant to be a precise guide as there are several alternate ways to install and configure Samba.

If you need to install Samba in any other configuration, refer to the general purpose procedures elsewhere in this manual.

---

The instructions with this deployment example assume that you are using the Samba software packaged with Solaris 10 and will configure Samba on a ZFS highly available local file system .

The failover zonepath cannot use a ZFS highly available local file system, instead the zonepath will use a SVM highly available local system.

The cluster resource group is simply brought online and is *not* failed over to another node as this deployment example is on a single node cluster.

The tasks you must perform to install and configure Samba in the global and non-global zones are as follows:

- “Example: Prepare the Cluster for Samba” on page 73
- “Example: Configure the Failover Zone” on page 74
- “Example: Configure Cluster Resources for Samba” on page 75
- “Example: Create the Samba  `smb . conf`  Configuration File” on page 76
- “Example: Verify Samba” on page 77
- “Example: Enable the Samba Software to Run in the Cluster” on page 78
- “Example: Verify the Sun Cluster HA for Samba resource group” on page 79

## ▼ Example: Prepare the Cluster for Samba

- 1 **Install and configure the cluster as instructed in *Sun Cluster Software Installation Guide for Solaris OS*.**

Install the following cluster software components on node Vigor5.

- Sun Cluster core software
- Sun Cluster data service for Samba

- 2 **Add the logical host name to `/etc/hosts` and `/etc/inet/ipnodes` on the failover zone**

```
Vigor5# zlogin failover grep SMB1 /etc/hosts /etc/inet/ipnodes
/etc/hosts:192.168.1.132    SMB1#20
/etc/inet/ipnodes:192.168.1.132    SMB1#20
```

- 3 **Install and configure a Zettabyte File System**

---

**Note** – The following `zpool` definition represents a very basic configuration for deployment on a single-node cluster.

You should *not* consider this example for use within a productive deployment, instead it is a very basic configuration for testing or development purposes only.

---

- a. **Create a ZFS pool.**

```
Vigor5# zpool create -m /local HAZpool c1t1d0
```

- b. **Create a ZFS**

```
Vigor5# zfs create HAZpool/samba
```

- 4 **Install and Configure a Solaris Volume Manager File System**

---

**Note** – The following `metaset` definitions represent a very basic configuration for deployment on a single-node cluster.

You should *not* consider this example for use within a productive deployment, instead it is a very basic configuration for testing or development purposes only.

---

- a. **Create a SVM Disk Set.**

```
Vigor5# metaset -s dg_d1 -a -h Vigor5
```

- b. **Add a Disk to the SVM Disk Set**

```
Vigor5# metaset -s dg_d1 -a /dev/did/rdisk/d4
```

**c. Add the Disk Information to the metainit utility input file**

```
Vigor5# cat >> /etc/lvm/md.tab <<-EOF
dg_d1/d100    -m    dg_d1/d110
dg_d1/d110    1 1    /dev/did/rdisk/d4s0
EOF
```

**d. Configure the metadevices**

```
Vigor5# metainit -s dg_d1 -a
```

**e. Create a Mount Point for the SVM Highly Available Local File System**

```
Vigor5# mkdir /zones
```

**f. Add the SVM highly available local file system to /etc/vfstab**

```
Vigor5# cat >> /etc/vfstab <<-EOF
/dev/md/dg_d1/dsk/d100 /dev/md/dg_d1/rdisk/d100 /zones ufs 3 no logging
EOF
```

**g. Create the File System**

```
Vigor5# newfs /dev/md/dg_d1/rdisk/d100
```

**h. Mount the File System**

```
Vigor5# mount /zones
```

## ▼ Example: Configure the Failover Zone

In this task you will install two Solaris Containers on node Vigor5.

**1 Create a non-global zone to be used as the failover zone**

If a whole root non-global zone is required you must specify create -b.

```
Vigor5# cat > /tmp/failover <<-EOF
create
set zonepath=/zones/failover
set autoboot=false
add inherit-pkg-dir
set dir=/opt/SUNWscsmb
end
EOF
```

**2 Configure the non-global failover zone, using the file you created.**

```
Vigor5# zonecfg -z failover -f /tmp/failover
```

**3 Install the zones.**

```
Vigor5# zoneadm -z failover install
```

**4 Boot the zone.**

```
Vigor5# zoneadm -z failover boot
```

**5 Log in to the zone and complete the zone system identification.**

Open another window and issue the following command.

```
Vigor5# zlogin -C failover
```

**6 Close the terminal window and disconnect from the zone console.**

After you have completed the zone system identification, disconnect from the window you previously opened.

```
Vigo5# ~.
```

**7 Create local mount points for the HA-ZFS file system with in the zones.**

```
Vigor5# zlogin failover mkdir /local
```

**8 Create the Samba Fault Monitor Userid in the zones.**

```
Vigor5# zlogin failover groupadd -g 1000 samba
```

```
Vigor5# zlogin failover useradd -u 1000 -g 1000 -s /bin/false homer
```

**9 Halt the zone.**

```
Vigor5# zlogin failover halt
```

**▼ Example: Configure Cluster Resources for Samba****1 Register the necessary data types on the single node cluster**

```
Vigor5# clresourcetype register SUNW.gds SUNW.HASStoragePlus
```

**2 Create the Samba resource group.**

```
Vigor5# clresourcegroup create -n Vigor5 samba-rg
```

**3 Create the logical host.**

```
Vigor5# clreslogicalhostname create -g samba-rg -h SMB1 samba-lh
```

**4 Create the SVM HASStoragePlus resource in the samba-rg resource group.**

```
Vigor5# clresource create -g samba-rg -t SUNW.HASStoragePlus \  
> -p FilesystemMountPoints=/zones sambaSVM-has
```

**5 Create the ZFS HAStoragePlus resource in the samba-rg resource group.**

```
Vigor5# clresource create -g samba-rg -t SUNW.HAStoragePlus \
> -p Zpools=HAZpool sambaZFS-has
```

**6 Enable the resource group.**

```
Vigor5# clresourcegroup online -M samba-rg
```

**7 Create the Sun Cluster HA for Solaris Container Configuration file.**

```
Vigor5# cat > /var/tmp/sczbt_config <<-EOF
RS=sambaFOZ
RG=samba-rg
PARAMETERDIR=/zones
SC_NETWORK=true
SC_LH=samba-lh
FAILOVER=true
HAS_RS=sambaSVM-has,sambaZFS-has

Zonename=failover
Zonebootopt=
Milestone=multi-user-server
Mounts=/local
EOF
```

**8 Register the Sun Cluster HA for Solaris Container data service.**

```
Vigor5# /opt/SUNWsczone/sczbt/util/sczbt_register -f /var/tmp/sczbt_config
```

**9 Enable the failover zone resource**

```
Vigor5# clresource enable sambaFOZ
```

**▼ Example: Create the Samba smb.conf Configuration File****1 Create the Samba Configuration Directory.**

```
Vigor5# mkdir -p /local/samba/smb1
Vigor5# cd /local/samba/smb1
Vigor5# mkdir -p lib logs private shares var/locks
```

**2 Create the Samba smb.conf Configuration File.**

```
Vigor5# cat > /local/samba/smb1/lib/smb.conf <<-EOF
[global]
    workgroup = PDC
    bind interfaces only = yes
```

```

interfaces = SMB1/255.255.255.0
netbios name = SMB1
security = user
server string = Samba (%v) domain (%h)
pid directory = /local/samba/smb1/var/locks
log file = /local/samba/smb1/logs/log.%m
smb passwd file = /local/samba/smb1/private/smbpasswd
private dir = /local/samba/smb1/private
lock dir = /local/samba/smb1/var/locks
domain logons = yes
domain master = yes
preferred master = yes

```

```

[scmndir]
comment = Monitor directory for Sun Cluster
path = /tmp
browseable = No
EOF

```

### 3 Test the Samba smb.conf Configuration File.

```

Vigor5# zlogin failover /usr/sfw/bin/testparm \
> -s /local/samba/smb1/lib/smb.conf

```

### 4 Add the Samba Fault Monitor Userid.

---

**Note** – You should specify samba as the password, otherwise you will need to change the SAMBA\_FMPASS variable in [Step 1](#) in “[Example: Enable the Samba Software to Run in the Cluster](#)” on page 78

---

```

Vigor5# zlogin failover /usr/sfw/bin/smbpasswd \
> -c /local/samba/smb1/lib/smb.conf -a homer

```

## ▼ Example: Verify Samba

### 1 Start Samba using the smbd program.

```

Vigor5# zlogin failover /usr/sfw/sbin/smbd \
> -s /local/samba/smb1/lib/smb.conf -D

```

### 2 Connect to Samba using the smbclient program.

```

Vigor5# zlogin failover /usr/sfw/bin/smbclient -N -L SMB1 \
> -s /local/samba/smb1/lib/smb.conf
Vigor5#

```

```
Vigor5# zlogin failover /usr/sfw/bin/smbclient '//SMB1/scmondird' \
> -U homer -c 'pwd;exit' -s /local/samba/smb1/lib/smb.conf
```

### 3 Stop Samba.

```
Vigor5# zlogin failover pkill -TERM smbd
```

## ▼ Example: Enable the Samba Software to Run in the Cluster

### 1 Create the Sun Cluster HA for Samba Configuration file.

```
Vigor5# cat > /var/tmp/samba_config <<-EOF
#### Resource Specific Parameters +++
RS=samba
RG=samba-rg
RS_LH=samba-lh
RS_HAS=sambaZFS-has
SERVICES="smbd,nmbd"

#### Common Parameters +++
BINDIR=/usr/sfw/bin
SBINDIR=/usr/sfw/sbin
CFGDIR=/local/samba/smb1
LDPATH=/usr/sfw/lib
FMUSER=homer

#### SMBD & NMBD Specific Parameters (See Note 1) +++
SAMBA_LOGDIR=/local/samba/smb1/logs
SAMBA_FMPASS=samba
SAMBA_FMDOMAIN=

#### WINBIND Specific Parameters (See Note 2) +++
WINBIND_DISCACHE=FALSE
WINBIND_SINGLEMODE=FALSE

#### Zone Specific Parameters (See Note 3) +++
RS_ZONE=sambaFOZ
LHOST=192.168.1.132
PROJECT=default
TIMEOUT=30
EOF
```

### 2 Register the Sun Cluster HA for Samba data service.

```
Vigor5# /opt/SUNWscsmb/util/samba_register -f /var/tmp/samba_config
```

**3 Enable the resource.**

```
Vigor5# clresource enable samba
```

**▼ Example: Verify the Sun Cluster HA for Samba resource group****● Check the status of the Samba resources.**

```
Vigor5# clrs status sambaFOZ
```

```
Vigor5# clrs status samba
```

```
Vigor5# clrg status samba-rg
```



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---

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