Oracle® Solaris Cluster Data Service for Samba Guide

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Contents

Using This Documentation

- **Overview** – Provides information for installing and configuring the Oracle Solaris Cluster HA for Samba data service.
- **Audience** – Experienced system administrators with extensive knowledge of Oracle software and hardware.
- **Required knowledge** – Knowledge of the Oracle Solaris operating system, of Oracle Solaris Cluster software, and expertise with the volume manager software that is used with Oracle Solaris Cluster software.

This document is not to be used as a planning or presales guide.

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♦ ♦ ♦ CHAPTER 1

Installing and Configuring HA for Samba

This chapter explains how to install and configure the Oracle Solaris Cluster HA for Samba (HA for Samba) data service. This chapter contains the following sections.

HA for Samba Overview

The HA for Samba data service enables Oracle Solaris Cluster software to manage Samba by providing components to perform the orderly startup, shutdown, and fault monitoring of Samba.

HA for Samba can be used only with Samba software that is packaged with Oracle Solaris 11 software.

Overview of Installing and Configuring HA for Samba

The following table summarizes the tasks for installing and configuring HA for Samba and provides cross-references to detailed instructions for performing these tasks.

TABLE 1-1 Task Map for Installing and Configuring HA for Samba

Task	Instructions
Plan the installation.	"Planning the HA for Samba Installation and Configuration" on page 10
Install Samba software, configure the resource groups to be used by HA for Samba, and configure Samba software.	"Installing and Configuring Samba Software" on page 16
Verify Samba software installation and configuration.	"Verifying the Configuration of Samba Software" on page 23
Install the HA for Samba package.	"Installing the HA for Samba Package" on page 24
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Tune the HA for Samba fault monitor.	"Understanding the HA for Samba Fault Monitor" on page 28
Debug HA for Samba.	"Debugging HA for Samba" on page 29

Planning the HA for Samba Installation and Configuration

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

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

- The `smbd` and optional `nmbd` components are created within a single resource. This is referred to as the Samba instance or Samba resource.
- The `winbindd` component is created as a separate resource. This is referred to as the winbind instance or winbind resource.

For conceptual information about failover data services and scalable data services, see "Oracle Solaris Cluster Concepts Guide ".

This section contains the following configuration requirements and restrictions for the HA for Samba data service.

Caution - Your data service configuration might not be supported if you do not observe these guidelines.

- "Supported Configurations of Samba" on page 11
- "Location of Samba Files" on page 11
- "Requirements and Restrictions for Samba `smb.conf` File" on page 11

Supported Configurations of Samba

HA for Samba supports Samba software 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.

HA for Samba is supported in the following Oracle Solaris Cluster configurations:

- The `smbd` and `nmbd` components can *only* be configured to run within a failover resource group.
- The `winbindd` component can be configured to run within either a failover *or* a scalable resource group.
- All components must run in the global zone or in a zone cluster. See "Multiple Samba Instances That Require winbind" on page 13 for more information.

Location of Samba Files

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

Requirements and Restrictions for Samba `smb.conf` File

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

The HA for Samba data service requires that such files be located at *configuration-directory*`/lib/smb.conf`. The following guidelines apply:

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

- A winbind instance can 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 both deployed in the same failover resource group.
- If a winbind instance is configured in 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 `[scmondir]` share. The HA for Samba fault monitor uses `smbclient` to access the directory specified within `[scmondir]` to verify that `smnd` is operating correctly. The following is an example of the `[scmondir]` share in an `smb.conf` file.

  ```
  [scmondir]
  comment = Monitor directory for Oracle Solaris Cluster
  path = /tmp
  browseable = No
  ```

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

  The following example uses the following component names:

  - 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`.

  ```
  phys-schost# ls -l /global/samba/config
  total 2
  drwxrwx---   2 root     root     512 Jul 13 11:20 winbind

  phys-schost# 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
  ```

Multiple Samba Instances That Require winbind

The HA for Samba data service can support multiple Samba instances. However, only one winbind instance is supported per global zone or zone cluster.

If you intend to deploy multiple Samba instances that also require winbind, determine whether 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.

Each example includes the following information:

- The zone cluster `samba-zc` is configured on two nodes of the global cluster, `node1` and `node2`.
- Benefits and drawbacks are listed within each example.

EXAMPLE 1-1 Running All Samba Instances and a winbind Instance Within the Same Failover Resource Group

This example creates a single failover resource group that contains all the Samba instances and a winbind instance in zone cluster `samba-zc` on global-cluster nodes `node1` and `node2`.

```
node1# clresourcegroup create -Z samba-zc RG1
```

Benefits — Only one non-global zone per node is required.

Drawbacks — All Samba/winbind instances do not have independent failover as they are all within the same failover resource group.

EXAMPLE 1-2 Running Each Samba or winbind Instance Within Separate Failover Resource Groups

Create multiple failover resource groups that will each contain one Samba or winbind instance in dedicated zone-cluster nodes across global-cluster nodes.

```
node1# clresourcegroup create -Z samba-zc1 RG1
node1# clresourcegroup create -Z samba-zc2 RG2
node1# clresourcegroup create -Z samba-zcN RGn
```

Benefits — All Samba or winbind instances have independent failover in separate failover resource groups.

All Samba or winbind instances are isolated within their own dedicated zone-cluster nodes.

Drawbacks — Each resource group requires a unique zone cluster.

EXAMPLE 1-3 Running Each Samba Instance Within Separate Failover Resource Groups and winbind in a Scalable Resource Group

Create multiple failover resource groups that each contain one Samba instance plus one scalable resource group that contains a scalable winbind resource shared across zone cluster `samba-zc` on global-cluster nodes `node1` and `node2`. All Samba instances share the same zone-cluster.

```
node1# clresourcegroup create -Z samba-zc RG1
node1# clresourcegroup create -Z samba-zc RG2
node1# clresourcegroup create -Z samba-zc RG[n]
node1# clresourcegroup create -Z samba-zc -S RG3
```

Benefits	All Samba instances have independent failover within separate failover resource groups. Only one zone cluster is required.
Drawbacks	None

- `+/-` All Samba instances share the same non-global zone.

Dependencies Between HA for Samba Components

If your Samba resource requires winbind, you must configure a start dependency on the winbind resource. After you create the Samba and winbind resources, you set this dependency in "Registering and Configuring HA for Samba" on page 25.

Table 1-2 list the various dependencies.

TABLE 1-2 Samba Components and Their Dependencies

Component	Dependencies
Samba resource (`smbd` and `nmbd`)	`winbind` resource, if the Samba resource requires winbind services `smbd` logical host resource `smbd` HAStoragePlus resource
winbind resource (`winbindd`)	`winbindd` logical host resource `winbindd` HAStoragePlus resource

Note - Dependencies against the relevant component's logical host or HAStoragePlus resource are set for you when you register the Samba and winbind resources.

Required Parameters for the Samba `smb.conf` File

This section contains the following lists of required parameters for the Samba `smb.conf` file that is located within each configuration directory:

- "Samba Parameters Required in `smb.conf`" on page 15
- "winbind Parameters Required in `smb.conf`" on page 15

Refer to the `smb.conf`[5] man page for complete configuration information about Samba `smb.conf` file parameters.

Samba Parameters Required in `smb.conf`

- **bind interfaces only** – Must be set to `yes`.
- **interfaces** – 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 Samba server is known.
- **pid directory** – Must include the *samba-configuration-directory* in its 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`

- **bind interfaces only** – Must be set to `yes`.
- **idmap**-related variables – Must be set to the same value as the Samba `smb.conf` entry.
- **interfaces** – 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 groups** – 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 use default domain** – Must be set to `yes`.
- **workgroup** – Must be set to the same value as the Samba `smb.conf` entry.

Installing and Configuring Samba Software

This section provides procedures to install and configure Samba software.

Note - Oracle provides support for Samba that is packaged with Oracle Solaris 11 software, but does not offer support for Samba that has been downloaded and compiled from `http://www.samba.org`.

This section contains the following procedures:

Note - The Oracle Solaris Cluster HA for Samba software can be configured to run in a zone cluster.

▼ How to Install and Verify Samba Software

Samba software is provided in the Oracle Solaris package `service/network/samba`. Perform the following procedure on each node to determine whether the same version of Samba software is installed on all nodes and to install Samba software if necessary.

Before You Begin

- Determine how many Samba instances to use. See "Multiple Samba Instances That Require winbind" on page 13.
- Create a cluster file system or highly available local file system for the Samba files. For guidelines on locations for Samba files, see "Location of Samba Files" on page 11. For information about the file system for the Samba files, see "Planning the Cluster File System Configuration" in "Oracle Solaris Cluster Data Services Planning and Administration Guide".

1. **Assume the `root` role.**

2. **Determine whether Samba software is already installed on any nodes in the cluster and, if so, which version is installed.**

   Command output is similar to the following.

   ```
   phys-schost-N# pkg info service/network/samba
   ```

```
          Name: service/network/samba
       Summary: samba - A Windows SMB/CIFS fileserver for UNIX
      Category: System/File System
         State: Installed
     Publisher: solaris
       Version: 3.6.12
 Build Release: 5.11
        Branch: 0.175.1.7.0.2.0
Packaging Date: Sat Apr 13 00:49:09 2013
          Size: 185.70 MB
          FMRI: pkg://solaris/service/network/
samba@3.6.12,5.11-0.175.1.7.0.2.0:20130413T004909Z
```

3. For any cluster node that is not already installed with the correct version of Samba software, install the Samba software package.

a. Ensure that the Samba package is available from the configured publisher and that the `solaris` publisher is valid.

```
# pkg list -a service/network/samba
# pkg publisher
PUBLISHER                             TYPE     STATUS   P  LOCATION
solaris                               origin   online   F  solaris-repository
ha-cluster                            origin   online   F  ha-cluster-repository
```

For information about setting the `solaris` publisher, see "Adding, Modifying, or Removing Package Publishers" in "Adding and Updating Software in Oracle Solaris 11.2 ".

Tip - Use the `-nv` options whenever you install or update to see what changes will be made, such as which versions of which packages will be installed or updated and whether a new BE will be created.

If you do not get any error messages when you use the `-nv` options, run the command again without the `-n` option to actually perform the installation or update. If you do get error messages, run the command again with more `-v` options (for example, `-nvv`) or more of the package FMRI to get additional information to help you diagnose and fix the problem. For troubleshooting information, see Appendix A, "Troubleshooting Package Installation and Update," in "Adding and Updating Software in Oracle Solaris 11.2 ".

b. Install the Samba software package.

```
phys-schost-N# pkg install service/network/samba
```

c. Verify that the package installed successfully.

```
$ pkg info service/network/samba
```

Installation is successful if output shows that `State` is `Installed`.

Next Steps Prepare the cluster for the HA for Samba data service.

- If you will use winbind, go to "How to Prepare the Cluster for HA for Samba With winbind" on page 18.
- If you will not use winbind, skip to "How to Prepare the Cluster for HA for Samba" on page 19.

▼ How to Prepare the Cluster for HA for Samba With winbind

Perform this procedure to prepare the cluster for Samba software in a failover resource group, with winbind configured in a scalable resource group.

Note - If you are not using multiple Samba instances that require winbind, instead go to "How to Prepare the Cluster for HA for Samba" on page 19.

Before You Begin Ensure that the `/etc/netmasks` file has IP-address subnet and netmask entries for all logical hostnames. If necessary, edit the `/etc/netmasks` file to add any missing entries.

1. **Assume a role that provides `solaris.cluster.modify` RBAC authorization.**

2. **Register the `SUNW.HAStoragePlus` and `SUNW.gds` resource types.**

```
phys-schost-1# clresourcetype register SUNW.HAStoragePlus
phys-schost-1# clresourcetype register SUNW.gds
```

3. **Create a failover resource group for the winbind shared network address.**

```
phys-schost-1# clresourcegroup create -n nodelist winbind-failover-resource-group
```

4. **Create a resource for the winbind logical hostname.**

```
phys-schost-1# 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.**

```
phys-schost-1# 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 this scalable HAStoragePlus resource, you must use a cluster file system.

```
phys-schost-1# clresource create -g winbind-scalable-resource-group \
-t SUNW.HAStoragePlus \
-p FilesystemMountPoints=winbind-file-system-mount-point \
-x AffinityOn=FALSE \
winbind-ha-storage-resource
```

7. **Enable and bring online the winbind failover and scalable resource groups.**

```
phys-schost-1# clresourcegroup online -M winbind-failover-resource-group
phys-schost-1# clresourcegroup online -M winbind-scalable-resource-group
```

Next Steps Register the resource group and logical hostname and Samba disk storage resource for the Samba instance. Go to "How to Prepare the Cluster for HA for Samba" on page 19.

▼ How to Prepare the Cluster for HA for Samba

Perform this procedure to prepare the cluster for the HA for Samba data service in a failover resource group.

Before You Begin

- If you are using multiple Samba instances requiring winbind, ensure that you have configured the necessary winbind resource groups. See "How to Prepare the Cluster for HA for Samba With winbind" on page 18.
- Ensure that the `/etc/netmasks` file has IP-address subnet and netmask entries for all logical hostnames. If necessary, edit the `/etc/netmasks` file to add any missing entries.

1. **Assume a role that provides `solaris.cluster.modify` RBAC authorization.**

2. **Register the `SUNW.HAStoragePlus` and `SUNW.gds` resource types.**

```
phys-schost-1# clresourcetype register SUNW.HAStoragePlus
phys-schost-1# clresourcetype register SUNW.gds
```

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

```
phys-schost-1# clresourcegroup create -n nodelist samba-resource-group
```

4. **Create a resource for the Samba logical hostname.**

```
phys-schost-1# clreslogicalhostname create -g samba-resource-group \
-h samba-logical-hostname  samba-logical-hostname-resource
```

5. **Create a resource for the Samba disk storage.**

   - **If a ZFS highly available local file system is used, run the following command.**

```
phys-schost-1# clresource create -g samba-resource-group  \
-t SUNW.HAStoragePlus \
-p Zpools=samba-zspool \
samba-hasp-resource
```

- **If a cluster file system or any other non-ZFS highly available local file system is used, run the following command.**

```
phys-schost-1# clresource create -g samba-resource-group \
-t SUNW.HAStoragePlus \
-p FilesystemMountPoints=samba-file-system-mountpoint \
samba-hasp-resource
```

6. **Bring online the failover resource group for Samba that now includes the HAStoragePlus and logical hostname resources.**

```
phys-schost-1# clresourcegroup online -M samba-resource-group
```

Next Steps Go to "How to Configure Samba Software" on page 20.

How to Configure Samba Software

This section contains the steps to prepare Samba for use with the HA for Samba data service. Some steps require that you use Samba commands. Refer to the Docs and Books section under Learn Samba on the `http://www.samba.org` website for the relevant Samba man pages.

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

Before You Begin Ensure that the same version of Samba software is installed on all nodes that you will configure with HA for Samba.

1. **Create the fault monitor user.**

- **If winbind is used, create the fault monitor user on the `NT PDC` or `ADS` server.**
  - Use no home directory, no user profile. and no login script.
  - Set the `Password never expire` parameter to `true`.
  - Set the `User cannot change password` parameter to `true`.

- **If winbind is not used, perform the following commands on all nodes in the cluster.**

```
phys-schost-N# groupadd -g 1000 samba-fault-monitor-group
phys-schost-N# 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` file specify which password is used.

2. **If winbind is used, activate the PAM configuration file on all nodes in the cluster.**

```
phys-schost-N# cp -p /etc/pam.conf /etc/pam.conf.orig
phys-schost-N# cp /etc/pam.conf-winbind /etc/pam.conf
```

3. **If winbind is used, configure the name service switch to resolve `user` and `group` from winbind on all nodes in the cluster.**

```
phys-schost-N# svccfg -s name-service/switch setprop config/password = \"files winbind\"
phys-schost-N# svccfg -s name-service/switch setprop config/group = \"files winbind\"
phys-schost-N# svcadm refresh name-service/switch
```

4. **If winbind is used, disable the name service cache daemon on all nodes in the cluster.**

```
phys-schost-N# svcadm disable name-service-cache
```

5. **On one node of the cluster, create the Samba configuration directory.**

Perform this step for each Samba or winbind instance. Create the Samba configuration directory within the cluster file system or highly available local file system that is used for Samba files.

```
phys-schost-1# mkdir -p samba-configuration-directory
phys-schost-1# cd samba-configuration-directory
phys-schost-1# mkdir -p lib logs private shares var/locks
```

6. **On one node of the cluster, create the `smb.conf` file within the configuration directory that reflects the instance.**

Perform this step for each Samba or winbind instance.

Note - If `security = share` is required, you must include `guest only = yes` within `[scmondir]`.

See "Required Parameters for the Samba `smb.conf` File" on page 15 and the `smb.conf`(5) man page that is provided with the Samba software for an explanation of the required parameters.

7. **Add the `NetBIOS` name entry to the `/etc/inet/hosts` and `/etc/inet/ipnodes` files.**

Perform this step on each node that is used for Samba.

```
phys-schost-N# egrep -e "SMB1|ADS" /etc/inet/hosts /etc/inet/ipnodes
/etc/inet/hosts:192.168.1.132 SMB1#20
/etc/inet/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 determines 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` parameters all require host name-to-IP address resolution.

8. **If Samba will operate as an Active Directory domain member server, create the Kerberos `krb5.conf` file.**

   Perform this step on all nodes or zones that are used for Samba and that reflect the ADS realm. Refer to `http://www.samba.org` for complete information about installing and configuring Samba as a ADS domain member.

9. **On one node, test the `smb.conf` file.**

   ```
   phys-schost-1# samba-bin-directory/testparm \
   samba-configuration-directory/lib/smb.conf
   ```

10. **If Samba is configured as an NT domain member, join the domain.**

    Perform this step from one node of the cluster.

    ```
    phys-schost-1# samba-bin-directory/net -s samba-configuration-directory/lib/smb.comf \
    RPC JOIN -U Administrator-on-the-PDC
    ```

11. **If Samba is configured as a Windows 2003 domain member server with ADS, join the domain.**

    Perform this step from one node of the cluster.

    ```
    phys-schost-1# samba-bin-directory/net -s samba-configuration-directory/lib/smb.comf \
    ADS JOIN -U Administrator-on-the-ADS
    ```

12. **If Samba is configured as a PDC or with `security = user`, add the fault monitor user.**

    Perform this step from one node of the cluster.

    ```
    phys-schost-1# samba-bin-directory/smbpasswd \
    -c samba-configuration-directory/lib/smb.comf \
    -a samba-fault-monitor-user
    ```

13. **If configured with `security = share`, verify that the `guest only` parameter is set to `yes`.**

    Inspect the `smb.conf` file to verify that `guest only = yes` is coded within the `[scmondir] section`.

Next Steps Go to "How to Verify the Configuration of Samba Software" on page 23.

Verifying the Configuration of Samba Software

This section provides the procedure to verify the configuration of Samba software.

▼ How to Verify the Configuration of Samba Software

Perform this procedure from one node of the cluster.

1. **Test the `smb.conf` file.**

```
phys-schost-1# samba-bin-directory/testparm > samba-configuration-directory/lib/smb.conf
```

2. **If winbind is used, start and test winbind.**

   a. **Start and test winbind.**

```
phys-schost-1# samba-sbin-directory/winbindd \
-s samba-configuration-directory/lib/smb.conf
phys-schost-1# getent passwd
phys-schost-1# getent group
```

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

```
phys-schost-1# getent passwd samba-fault-monitor-user
```

   This test must succeed. If you encounter problems, restart `winbindd` with debug information by using the `-d 3` option. Then retest and observe the `winbindd` log file, which is located at *samba-configuration-directory*`/logs/log.winbindd`.

Note - Winbind caching can affect the results from `getent passwd` *samba-fault-monitor-user*, which might not be up to date. See the `winbind[8]` man page for more information about winbind caching. See the `smb.conf[5]` man page for more information about `winbind cache time`.

---

3. **Start and test Samba.**

   a. **Start the Samba instance.**

- **If you use the `smbd` daemon, run the following command:**

```
phys-schost-1# samba-sbin-directory/smbd \
-s samba-configuration-directory/lib/smb.conf -D
```

- **If you use the `nmbd` daemon, run the following command:**

```
phys-schost-1# samba-sbin-directory/nmbd \
-s samba-configuration-directory/lib/smb.conf -D
```

b. Test whether the `smbclient` program can access Samba.

```
phys-schost-1# samba-bin-directory/smbclient -N -L NetBIOS-name
phys-schost-1# samba-bin-directory/smbclient '\\NetBIOS-name\scmondir' \
-U samba-fault-monitor-user -c 'pwd;exit'
```

This test must succeed. If you encounter problems, restart `smbclient` with debug information by using the `-d 3` option.

4. Stop the `smbd`, `nmbd`, and `winbindd` daemons.

Perform this step in the global zone only.

```
phys-schost-1# pkill -TERM -z zonename 'smbd|nmbd|winbindd'
```

Next Steps Go to "Installing the HA for Samba Package" on page 24.

Installing the HA for Samba Package

If you did not install the HA for Samba package during your initial Oracle Solaris Cluster installation, perform this procedure to install the package.

▼ How to Install the HA for Samba Package

Perform this procedure on each cluster node where you want the HA for Samba software to run.

1. On the cluster node where you are installing the data service package, assume the `root` role.

2. Ensure that the data service package is available from the configured publisher and that the `solaris` and `ha-cluster` publishers are valid.

```
# pkg list -a ha-cluster/data-service/samba
# pkg publisher
PUBLISHER                             TYPE     STATUS   P  LOCATION
solaris                               origin   online   F  solaris-repository
ha-cluster                            origin   online   F  ha-cluster-repository
```

For information about setting the `solaris` publisher, see "Adding, Modifying, or Removing Package Publishers" in "Adding and Updating Software in Oracle Solaris 11.2".

Tip - Use the `-nv` options whenever you install or update to see what changes will be made, such as which versions of which packages will be installed or updated and whether a new BE will be created.

If you do not get any error messages when you use the `-nv` options, run the command again without the `-n` option to actually perform the installation or update. If you do get error messages, run the command again with more `-v` options (for example, `-nvv`) or more of the package FMRI pattern to get more information to help you diagnose and fix the problem. For troubleshooting information, see Appendix A, "Troubleshooting Package Installation and Update," in "Adding and Updating Software in Oracle Solaris 11.2".

3. **Install the HA for Samba software package.**

   ```
   # pkg install ha-cluster/data-service/samba
   ```

4. **Verify that the package installed successfully.**

   ```
   $ pkg info ha-cluster/data-service/samba
   ```

   Installation is successful if output shows that `State` is `Installed`.

5. **Perform any necessary updates to the Oracle Solaris Cluster software.**
   For instructions on updating or upgrading your software, see Chapter 11, "Updating Your Software," in "Oracle Solaris Cluster System Administration Guide".

Registering and Configuring HA for Samba

This section contains the procedure to configure HA for Samba resources.

▼ How to Configure Resources for Samba and winbind

Perform this procedure on one node of the cluster only.

Before You Begin

- Determine whether to deploy a single or multiple Samba instances, with or without winbind. See "Multiple Samba Instances That Require winbind" on page 13.
- Ensure that HA for Samba packages are installed. See "How to Install the HA for Samba Package" on page 24.

1. **Assume a role that provides `solaris.cluster.modify` RBAC authorization.**

2. **If winbind is required, create, register, and enable a winbind resource.**

   a. **Edit the `samba_config` file and follow the comments within that file.**

   Ensure that `SERVICES="winbindd"` is specified.

   ```
   phys-schost-1# cd /opt/SUNWscsmb/util
   phys-schost-1# vi samba_config
   ```

   b. **Register the resource.**

   ```
   phys-schost-1# ./samba_register
   ```

   c. **Enable the resource.**

   ```
   phys-schost-1# clresource enable winbind-resource
   ```

3. **Configure an encrypted password for the Samba fault monitor.**

   Perform this step on each node in the cluster.

   a. **Set up the encrypted user password for the Samba fault monitor.**

   ```
   phys-schost-N# touch /var/cluster/scsmb_key/opt/SUNWscsmb/.samba-lh_passwd
   phys-schost-N# chmod 600 /var/cluster/scsmb_key/opt/SUNWscsmb/.samba-lh_passwd

   phys-schost-N# dd if=/dev/urandom of=/var/cluster/scsmb_key bs=16 count=1
   phys-schost-N# chmod 400 /var/cluster/scsmb_key

   phys-schost-N# echo 'password' | /usr/sfw/bin/openssl enc -aes128 -e -pass \
   file:/var/cluster/scsmb_key -out /opt/SUNWscsmb/.samba-lh-passwd
   phys-schost-N# chmod 400 /opt/SUNWscsmb/.samba-lh_passwd
   ```

   b. **Verify that the decrypted password matches the password for user `hasmb` within the Windows Active Directory domain.**

   ```
   phys-schost-N# /usr/sfw/bin/openssl enc -aes128 -d \
   -pass file:/var/cluster/scsmb_key -in /opt/SUNWscsmb/.samba-lh_passwd
   ```

4. **Create, register, and enable a Samba resource.**

   a. **Edit the `samba_config` file and follow the comments within that file.**

Ensure that `SERVICES="smbd"` or `SERVICES="smbd,nmbd"` is specified.

```
phys-schost-1# cd /opt/SUNWscsmb/util
phys-schost-1# vi samba_config
```

b. Register the resource.

```
phys-schost-1# ./samba_register
```

c. Ensure that Samba is dependent on winbind.

```
phys-schost-1# clresource set -p Resource_dependencies=winbind-resource{local_node} \
samba-resource
```

d. Enable the Samba resource.

```
phys-schost-1# clresource enable samba-resource
```

Next Steps Go to "Verifying the HA for Samba Installation and Configuration" on page 27.

Verifying the HA for Samba Installation and Configuration

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

▼ How to Verify the HA for Samba Installation and Configuration

1. **Assume a role that provides `solaris.cluster.modify` RBAC authorization.**
2. **Ensure that all Samba resources are online.**

   a. Check the status of Samba resources.

   ```
   phys-schost-1# cluster status
   ```

   b. Enable any Samba or winbind resource that is not online.

   ```
   phys-schost-1# clresource enable samba-resource
   ```

3. **Switch the Samba resource group to another cluster node.**

   ```
   phys-schost-1# clresourcegroup switch -n node samba-resource-group
   ```

Understanding the HA for Samba Fault Monitor

This section contains the following information.

For conceptual information about fault monitors, see "Oracle Solaris Cluster Concepts Guide ".

Resource Properties

The HA for Samba fault monitor uses the same resource properties as resource type `SUNW.gds`. See the `SUNW.gds`(5) man page for a complete list of resource properties.

Probing Algorithm and Functionality

The 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 Oracle Solaris Cluster installations. Therefore, you should tune the 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 HA for Samba fault monitor checks the `smbd`, `nmbd`, and `winbindd` components in an infinite loop. During each cycle, the fault monitor checks the relevant component and reports 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 continues whenever the fault monitor reports a failure.

  If successive restarts exceed the value of `Retry_count` in the `Thorough_probe_interval` property, a request is made to fail over the resource group onto a different node.

Operations of the winbind Probe

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

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 daemon, see Step 4 in "How to Configure Samba Software" on page 20.

Operations of the Samba Probe

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

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

If the `smbclient` program cannot connect, there might be network or server issues that are causing the `smbclient` program to fail. These errors might be transient and correctable within a few seconds. Therefore, before a failure is called by the probe, the `smbclient` program is retried within 85% of the `Probe_timeout` property setting minus 15 seconds, which is approximately the timeout for the first `smbclient` failure. However, doing this is only realistic if the `Probe_timeout` setting is at least 30 seconds. If the `Probe_timeout` setting is less than 30 seconds, the `smbclient` program is tried only once.

Debugging HA for Samba

You can turn debugging on for all Samba or winbind instances or for only a particular Samba or winbind instance. A `config` file exists for this purpose. It is located in the `/opt/SUNWscsmb/`*instance*`/etc` directory, where *instance* refers to either `samba` or `winbind`.

If you need debugging enabled for HA for Samba across the entire cluster, perform the following procedure.

▼ How to Turn On Debugging for HA for Samba

Perform this procedure on each node in the cluster.

1. **Display the `/etc/syslog.conf` file entries that contain the word "daemon".**

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

2. **Open the `/etc/syslog.conf` file for editing and change `daemon.notice` to `daemon.debug`.**

   The following example output shows that `daemon.debug` is set.

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

3. **Restart the `syslog` daemon.**

```
phys-schost-N# svcadm restart system-log
```

4. **On each cluster node that has Samba or winbind components that require debug output, enable debugging.**

   Edit the `/opt/SUNWscsmb/`*instance*`/config` file and set `DEBUG=` to either `DEBUG=ALL` or `DEBUG=`*resource*.

instance	The `samba` or `winbind` subdirectory.
`ALL`	Enables debugging for all resources of the Samba or winbind component.
resource	Enables debugging only for the specified resource.

   The following example output shows a Samba configuration file with `DEBUG` set to `ALL`, to enable debugging on all Samba resources.

```
phys-schost-N# 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
```

Next Steps To turn off debugging, reverse the steps in the previous procedure.

♦ ♦ ♦ APPENDIX A

Deployment Example: Installing Samba Packaged with Oracle Solaris 11 Software in a Zone Cluster

This appendix presents an example of how to install and configure the Samba application, shipped as part of the Oracle Solaris 11 IPS repository, and the HA for Samba data service in a zone cluster.

Note - To follow this example for configuration in a global cluster, perform these instructions from a global-cluster node instead of a zone-cluster node, and omit instructions for configuring a zone cluster.

This appendix contains the following information:

Target Cluster Configuration

This deployment example uses a two-node cluster that is configured with a two-node zone cluster. The nodes have the following names:

`phys-node-1`	Physical node 1
`phys-node-2`	Physical node 2
`zc-node-1`	Zone cluster node 1
`zc-node-2`	Zone cluster node 2

Software Configuration

This deployment example uses the following software products and versions:

- Oracle Solaris 11.2 software
- Oracle Solaris Cluster 4.2 software
- HA for Samba data service
- Samba shipped with Oracle Solaris 11.2 software
- Windows 2003 Enterprise Edition, with an Active Directory domain server configured

Assumptions

This deployment example is developed with the following assumptions:

- The two-node cluster is already installed and configured.
- The zone cluster `zc` is already installed and configured.
- The root user has the `/usr/cluster/bin` directory included in `$PATH` on all cluster nodes and zone cluster nodes.
- All cluster nodes have the `solaris` publisher for Oracle Solaris 11.2 software and the `ha-cluster` publisher for Oracle Solaris Cluster 4.2 software support repositories configured.
- The ZFS pool `samba_zp` is already created, using the mount point `/failover/samba`. The command used to create the ZFS pool is `zpool create -m /failover/samba samba_zp mirror` *devicelist* `mirror` *devicelist*.
- The zone cluster `zc` has the privileges to use the zpool and IP address within its zone cluster configuration. These privileges were set by using the following commands:

```
phys-node-1# clzonecluster configure zc
clzc:zc> add net
clzc:zc:net> set address=192.168.0.10
clzc:zc:net> end
clzc:zc> add dataset
clzc:zc:dataset> set name=samba_zp
clzc:zc:dataset> end
clzc:zc> commit
clzc:zc> exit
```

- The zone cluster nodes are configured as members of a Windows Active Directory domain, using winbind to resolve users and groups that are configured within the Active Directory domain.
- The Active Directory is configured to use the following values:

domain	`osc.example.com`

domain NetBIOS name: `OSC`

IP-Address: `192.168.0.20`

- The following user and password are created within the Active Directory, to be used by the HA for Samba fault monitor:

  Username: `hasmb`

  password: *password*
- No home directory, user profile, or login script are defined for the Active Directory.
- The Active Directory parameters `Password never expire` and `User cannot change password` are set to true.

Configuring Samba Software

This section contains the following tasks to install and configure Samba in a zone cluster:

▼ Example: Prepare the Cluster for Samba

1. **On all cluster nodes and zone-cluster nodes, add the logical hostname to the `/etc/ inet/hosts` file.**

   Ensure that you include the fully qualified domain name in an alias.

   ```
   phys-node-N# grep samba-lh /etc/inet/hosts
   192.168.0.10 samba-lh samba-lh.osc.example.com
   ```

2. **On all cluster nodes and zone cluster nodes, add the IP address for the Windows Active Directory server to the `/etc/ inet/hosts` file.**

Ensure that you include the fully qualified domain name in an alias.

```
phys-node-N# grep windows-ad /etc/inet/hosts
192.168.0.20 windows-ad windows-ad.osc.example.com
```

3. **On all zone cluster nodes, install the Samba IPS package from the Oracle Solaris 11.2 repository.**

```
zc-node-N# pkg install --accept service/network/samba
```

4. **On all zone cluster nodes, install the HA for Samba data service IPS package from the Oracle Solaris Cluster 4.2 repository.**

```
zc-node-N# pkg install --accept ha-cluster/data-service/samba
```

▼ Example: Configure the Logical Host and Storage Cluster Resources for Samba

1. **On one zone-cluster node, register the `SUNW.gds` and `SUNW.HAStoragePlus` resource types within the zone cluster.**

```
zc-node-1# clresourcetype register SUNW.gds SUNW.HAStoragePlus
```

2. **On one zone-cluster node, create the Samba resource group `samba-rg`.**

```
zc-node-1# clresourcegroup create samba-rg
```

3. **On one zone-cluster node, create the logical host resource `samba-lh-rs` in the `samba-rg` resource group.**

```
zc-node-1# clreslogicalhostname create -g samba-rg -h samba-lh samba-lh-rs
```

4. **On both zone-cluster nodes, create the `/failover/samba` directory.**

```
zc-node-N# mkdir -p /failover/samba
```

5. **On one zone-cluster node, create the HAStoragePlus resource `samba-hasp-rs` in the `samba-rg` resource group.**

```
zc-node-1# clresource create -t SUNW.HAStoragePlus -g samba-rg \
-p zpools=samba_zp samba-hasp-rs
```

6. **On one zone-cluster node, enable the `samba-rg` resource group.**

```
zc-node-1# clresourcegroup online -eM samba-rg
```

Example: Create the Samba smb.conf Configuration File

The Samba files are located where the Samba shares and smb.conf files are stored. The HA for Samba data service requires that these files be stored within a configuration directory that reflects the NetBIOS name, which in this example is samba-lh for the Samba or winbind instance.

1. **Create the Samba configuration directory.**

```
zc-node-1# mkdir /failover/samba/samba-lh
zc-node-1# cd /failover/samba/samba-lh
zc-node-1# mkdir -p lib logs private shares/data var/locks
zc-node-1# chmod 1777 /failover/samba/samba-lh/shares/data
```

2. **Create the Samba smb.conf configuration file.**

For more information about possible configuration options, see the example configuration file /etc/samba/smb.conf-example, the smb.conf(5) man page, and the online documentation available at http://www.samba.org.

```
zc-node-1# vi /failover/samba/samba-lh/lib/smb.conf
[global]
   workgroup = OSC
   server string = Samba (%v) Server (%h)
   security = ADS
   log file = /failover/samba/samba-lh/logs/log.%m
   max log size = 50
   realm = OSC.EXAMPLE.COM
   passdb backend = smbpasswd
   interfaces = 192.168.0.10/24
   wins support = yes
   dns proxy = no
   netbios name = samba-lh
   bind interfaces only = yes
   pid directory = /failover/samba/samba-lh/var/locks
   private dir = /failover/samba/samba-lh/private
   smb passwd file = /failover/samba/samba-lh/private/smbpasswd
   lock dir = /failover/samba/samba-lh/var/locks
   winbind cache time = 30
   allow trusted domains = no
   idmap config * : backend = tdb
   idmap config * : range = 10001-20000
   idmap config DOMAIN : backend = rid
   idmap config DOMAIN : range = 10000-20000
   idmap config DOMAIN : base_rid = 0
   winbind enum groups = yes
   winbind enum users = yes
   winbind use default domain = yes

[homes]
```

```
   comment = Home Directories
   browseable = no
   writable = yes

[scmondir]
   comment = Monitor directory for Oracle Solaris Cluster
   path = /tmp
   browsable = no

[data]
   path = /failover/samba/samba-lh/shares/data
   comment = Data Share
   read only = no
   writable = yes
```

3. **Verify the `smb.conf` configuration file for correctness.**

```
zc-node-1# testparm -s /failover/samba/samba-lh/lib/smb.conf
```

▼ Example: Create the Kerberos, PAM, and Name Service Switch Configuration for winbind

1. **On all zone-cluster nodes, create the Kerberos `krb5.conf` file.**

```
zc-node-N# vi /etc/krb5/krb5.conf

[libdefaults]
      default_realm = OSC.EXAMPLE.COM

[realms]
      OSC.EXAMPLE.COM = {
            kdc = 192.168.0.20
            admin_server = 192.168.0.20
      }

[domain_realm]
      .your.domain.name = OSC.EXAMPLE.COM
      your.domain.name = OSC.EXAMPLE.COM

[logging]
      default = FILE:/var/krb5/kdc.log
      kdc = FILE:/var/krb5/kdc.log
      kdc_rotate = {
            period = 1d
            versions = 10
      }

[appdefaults]
      kinit = {
```

```
        renewable = true
        forwardable= true
}
```

2. **Ensure that the global cluster nodes have network time protocol (NTP) configured to be in sync with the time used by the Windows Active Directory server.**

   Compare output of the `ntpq -p` command on all physical cluster nodes and the equivalent on the Windows Active Directory server. Kerberos relies on synchronized time between the systems.

3. **On all zone-cluster nodes, activate the PAM configuration file for winbind.**

```
zc-node-N# cp -p /etc/pam.conf /etc/pam.conf.orig
zc-node-N# cp /etc/pam.conf-winbind /etc/pam.conf
```

4. **On all zone-cluster nodes, configure the name service switch to resolve `user` and `group` from winbind.**

```
zc-node-N# svccfg -s name-service/switch setprop config/password = \"files winbind\"
zc-node-N# svccfg -s name-service/switch setprop config/group = \"files winbind\"
zc-node-N# svcadm refresh name-service/switch
```

5. **On all zone-cluster nodes, disable the name service cache daemon.**

```
zc-node-N# svcadm disable name-service/cache
```

6. **From one zone-cluster node, join the Active Directory domain.**

```
zc-node-1# net -s /failover/samba/samba-lh/lib/smb.conf ADS JOIN -U Administrator
```

▼ Example: Verify the Samba Configuration

1. **Log in to `zc-node-1`.**

2. **Start and test the `winbindd` program.**

```
zc-node-1# winbindd -s /failover/samba/samba-lh/lib/smb.conf
zc-node-1# getent passwd
```
You should also see the users that are configured within the Active Directory domain
```
zc-node-1# getent group
```
You should also see the groups that are configured within the Active Directory domain
```
zc-node-1# getent passwd hasmb
```
You should see the passwd entry for user “hasmb”

3. **Start and test the `smbd` and `nmbd` programs.**

   Confirm that the command output contains no errors.

```
zc-node-1# smbd -s /failover/samba/samba-lh/lib/smb.conf -D
zc-node-1# nmbd -s /failover/samba/samba-lh/lib/smb.conf -D
zc-node-1# nmblookup samba-lh
zc-node-1# smbclient -s /failover/samba/samba-lh/lib/smb.conf '\\samba-lh\scmondir' \
-U hasmb -c 'pwd;exit'
zc-node-1# smbclient -s /failover/samba/samba-lh/lib/smb.conf -N -L samba-lh
```

4. **On a Windows system that is part of the same Active Directory domain, configure usage of the SMB share.**

   a. **Go to My Computer -> Tools -> Map Network drive.**

   b. **Select a drive letter and set the `\\samba-lh\data` directory as the share.**

   c. **Create and access files in the share.**

5. **Verify that you can confirm access from the Windows system that you configured in Step 4.**

   ```
   zc-node-1# smbstatus -s /failover/samba/samba-lh/lib/smb.conf
   ```

6. **Stop the manually started Samba components.**

   ```
   zc-node-1# pkill 'smbd|nmbd|winbindd‘
   ```

7. **Switch the `samba-rg` resource group to `zc-node-2`.**

   ```
   zc-node-1# clresourcegroup switch -n zc-node-2 samba-rg
   ```

8. **Repeat this procedure on `zc-node-2`.**

▼ Example: Enable Samba Software to Run in the Cluster

1. **On all zone-cluster nodes, set up the encrypted Samba fault monitor user password.**

   ```
   zc-node-N# touch /var/cluster/scsmb_key /opt/SUNWscsmb/.samba-lh_passwd
   zc-node-N# chmod 600 /var/cluster/scsmb_key /opt/SUNWscsmb/.samba-lh_passwd

   zc-node-N# dd if=/dev/urandom of=/var/cluster/scsmb_key bs=16 count=1
   zc-node-N# chmod 400 /var/cluster/scsmb_key

   zc-node-N# echo 'password' | /usr/sfw/bin/openssl enc -aes128 -e -pass \
   file:/var/cluster/scsmb_key -out /opt/SUNWscsmb/.samba-lh_passwd
   zc-node-N# chmod 400 /opt/SUNWscsmb/.samba-lh_passwd
   ```

2. **On all zone-cluster nodes, confirm that the decrypted password matches the password configured for user `hasmb` within the Windows Active Directory domain.**

```
zc-node-N# /usr/sfw/bin/openssl enc -aes128 -d -pass file:/var/cluster/scsmb_key \
-in /opt/SUNWscsmb/.samba-lh_passwd
```

3. **From one node of the zone cluster, create the HA for Samba configuration file for the winbind resource.**

```
zc-node-1# vi /var/tmp/samba_config-winbind-rs

RS=winbind-rs
RG=samba-rg
RS_LH=samba-lh-rs
RS_HAS=samba-hasp-rs
SERVICES="winbindd"

BINDIR=/usr/bin
SBINDIR=/usr/sbin
CFGDIR=/failover/samba/samba-lh
FMUSER=hasmb

SAMBA_LOGDIR=/failover/samba/samba-lh/logs
SAMBA_FMPASS=encrypted
SAMBA_FMDOMAIN=OSC

WINBIND_DISCACHE=FALSE
WINBIND_SINGLEMODE=FALSE

RS_ZONE=
LHOST=
PROJECT=default
TIMEOUT=30
```

4. **From one node of the zone cluster, create the HA for Samba configuration file for the Samba resource.**

```
zc-node-1# vi /var/tmp/samba_config-samba-rs

RS=samba-rs
RG=samba-rg
RS_LH=samba-lh-rs
RS_HAS=samba-hasp-rs
SERVICES="smbd,nmbd"

BINDIR=/usr/bin
SBINDIR=/usr/sbin
CFGDIR=/failover/samba/samba-lh
FMUSER=hasmb

SAMBA_LOGDIR=/failover/samba/samba-lh/logs
SAMBA_FMPASS=encrypted
```

```
SAMBA_FMDOMAIN=OSC

WINBIND_DISCACHE=FALSE
WINBIND_SINGLEMODE=FALSE

RS_ZONE=
LHOST=
PROJECT=default
TIMEOUT=30
```

5. **From one node of the zone cluster, register the HA for Samba data service for winbind and Samba.**

```
zc-node-1# /opt/SUNWscsmb/util/samba_register -f /var/tmp/samba_config-winbind-rs
zc-node-1# /opt/SUNWscsmb/util/samba_register -f /var/tmp/samba_config-samba-rs
```

6. **From one node of the zone cluster, configure the resource dependency between the `samba-rs` and `winbind-rs` resources.**

```
zc-node-1# clresource set -p Resource_dependencies+=winbind-rs samba-rs
```

7. **From one node of the zone cluster, enable the resources.**

```
zc-node-1# clresource enable winbind-rs
zc-node-1# clresource enable samba-rs
```

▼ Example: Verify the HA for Samba Resource Group

Before You Begin Ensure that the `samba-rg` resource group is online on zone-cluster node `zc-node-1`.

1. **Verify the status of the cluster resources and resource group.**

```
zc-node-1# clresourcegroup status samba-rg
zc-node-1# clresource status -g samba-rg
```

2. **Verify the Samba functionality** *without* **manually starting the Samba daemons.**

   Confirm that the command output contains no errors.

```
zc-node-1# getent passwd
    You should also see the users that are configured within the Active Directory domain
zc-node-1# getent group
    You should also see the groups that are configured within the Active Directory domain
zc-node-1# getent passwd hasmb
    You should see the passwd entry for user hasmb
zc-node-1# nmblookup samba-lh zc-node-1# smbclient \
-s /failover/samba/samba-lh/lib/smb.conf \
'\\samba-lh\scmondir' -U hasmb -c 'pwd;exit'
```

```
zc-node-1# smbclient -s /failover/samba/samba-lh/lib/smb.conf -N -L samba-lh
```

3. **On a Windows system that is part of the same Active Directory domain, configure usage of the SMB share.**

   a. **Go to My Computer -> Tools -> Map Network drive.**

   b. **Select a drive letter and set the `\\samba-lh\data` directory as the share.**

   c. **Create and access files in the share.**

4. **Verify that you can confirm access from the Windows system that you configured in Step 3.**

   ```
   zc-node-1# smbstatus -s /failover/samba/samba-lh/lib/smb.conf
   ```

5. **Switch the `samba-rg` resource group to the other zone cluster node, `zc-node-2`, and perform Step 2 and Step 3.**

   ```
   zc-node-1# clresourcegroup switch -n zc-node-2-samba-rg
   ```

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