



Sun Cluster 3.1 Data Service for Samba Guide

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Installing and Configuring Sun Cluster HA for Samba

Installing and Configuring Sun Cluster HA for Samba

Table 1–1 lists the tasks for installing and configuring Sun Cluster HA for Samba. Perform these tasks in the order that they are listed.

TABLE 1–1 Task Map: Installing and Configuring Sun Cluster HA for Samba

Task	For Instructions, Go To
Plan the installation	"Sun Cluster HA for Samba Overview" on page 6 "Planning the Sun Cluster HA for Samba Installation and Configuration" on page 6
Install and configure Samba	"How to Install and Configure Samba" on page 14
Verify installation and configuration	"How to Verify the Installation and Configuration of Samba" on page 21
Install Sun Cluster HA for Samba Packages	"How to Install the Sun Cluster HA for Samba Packages by using the <code>scinstall</code> Utility" on page 24
Register and Configure Sun Cluster HA for Samba	"How to Register and Configure Sun Cluster HA for Samba as a Failover Service" on page 25
Verify Sun Cluster HA for Samba Installation and Configuration	"How to Verify the Sun Cluster HA for Samba Installation and Configuration" on page 30
Understand Sun Cluster HA for Samba fault monitor	"Understanding the Sun Cluster HA for Samba Fault Monitor" on page 30

TABLE 1-1 Task Map: Installing and Configuring Sun Cluster HA for Samba (Continued)

Task	For Instructions, Go To
Debug Sun Cluster HA for Samba	"How to Register and Configure Sun Cluster HA for Samba as a Failover Service with Winbind as a Scalable Service" on page 28

Sun Cluster HA for Samba Overview

Samba is an Open Source/Freeware suite that provides seamless file and print services to SMB/CIFS clients. Samba is freely available under the GNU General Public License and can be downloaded from <http://www.samba.org>. Additionally, Samba is now packaged with Solaris 9 as the SUNWsmbac, SUNWsmbar, SUNWsmbau and SUNWsfman packages.

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

TABLE 1-2 Protection of Components

Component	Protected by
SMB/CIFS	Sun Cluster HA for Samba (Samba component)
NetBIOS Name Server	Sun Cluster HA for Samba (Samba component)
Winbind	Sun Cluster HA for Samba (Winbind component — Solaris 8 or Solaris 9 with patch 113476-05 or later.)

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.

Configuration Restrictions



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

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

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

- **The Sun Cluster HA for Samba data service deployment** – The Sun Cluster HA for Samba data service consists of two components, Samba and Winbind. These components have the following deployment restrictions.
 - **Samba component** — The Samba component, i.e. SMB/CIFS and NetBIOS Name Server, cannot operate as a scalable service and therefore the Sun Cluster HA for Samba data service for the Samba component can only be configured to run as a failover service.
 - **Winbind component** — The Winbind component can operate as either a failover or scalable service and therefore the Sun Cluster HA for Samba data service for the Winbind component can be configured to run as a failover or scalable service.
- **Winbind deployment** – The following restrictions apply when deploying winbind.
 - **Samba Version** — If the winbind feature is used, then Samba v2.2.4 or later must be installed.
 - **Solaris Version** — Solaris 9 with patch 113476–05 or later.
 - **Multiple instances** — Only one instance of winbind can be deployed, regardless of that instance being a failover or scalable service.
- **Supported configurations** – Currently, only the following configurations are supported with the Sun Cluster HA for Samba data service.
 - Samba in a Primary Domain Controller (PDC) configuration
 - Samba in a Backup Domain Controller (BDC) configuration
 - Samba as an NT Domain member without winbind
 - Samba as an NT Domain Member with winbind, however refer to the restriction above with Solaris 9
 - Samba in a Standalone configuration
- **Installing Samba onto Cluster File Systems** — Regardless of which Samba delivery method you have chosen, ie from <http://www.samba.org> or from Solaris 9, the following restrictions apply.

- **Samba component** — Each Samba instance must have a unique *configuration directory* that reflects the *Samba NetBIOS* instance name. This *configuration directory* can be mounted as either a Failover File System or Global File System.
- **Winbind component** — The winbind component can only be deployed as a single instance, however Winbind still requires a *configuration directory*. This *configuration directory* can be mounted as a Failover File System or Global File System if the Winbind component will operate as a failover service. However, this *configuration directory* must be mounted as a Global File System if the Winbind component will operate as a scalable service.

Note – It is considered best practice when mounting Global File Systems to mount them with the /global prefix and to mount Failover File Systems with the /local prefix. However, be aware that this is simply viewed as best practice.

EXAMPLE 1-1 Samba instances and Winbind with Global File Systems

The following example shows Samba installed from <http://www.samba.org> onto a Global File System with two Samba instances (SAMBA1 and SAMBA2) and Winbind within that Global File System. The final output shows a subset of the /etc/vfstab entries for Samba deployed using Solaris Volume Manager.

```
# ls -l /usr/local
total 4
drwxrwxrwx  2 root    other      512 Oct  1 16:44 bin
lrwxrwxrwx  1 root    other      13 Oct 11 11:20 samba -> /global/samba
#
# ls -l /global/samba
total 18
drwxr-xr-x  2 root    other      512 Oct 11 15:00 bin
drwxr-xr-x  3 root    other      512 Oct 14 13:49 lib
drwxr-xr-x  6 root    other      512 Oct 11 15:00 man
drwxr-xr-x  2 root    other      512 Oct 14 10:05 private
drwxr-xr-x  7 root    other      512 Oct 14 13:39 SAMBA1
drwxr-xr-x  7 root    other      512 Oct 14 13:40 SAMBA2
drwxr-xr-x  6 root    other      512 Oct 11 15:01 swat
drwxr-xr-x  3 root    other      512 Oct 14 10:45 var
drwxr-xr-x  2 root    other      512 Jan 17 09:28 winbind
#
# more /etc/vfstab (Subset of the output)
/dev/md/dg_d6/dsk/d63    /dev/md/dg_d6/rdisk/d63    /global/samba
                        ufs          4          yes      logging,global
#
```

Note – In the above example the *configuration directory* for the *Samba NetBIOS* instance SAMBA1 is /global/samba/SAMBA1, whereas the *configuration directory* for the *Samba NetBIOS* instance SAMBA2 is /global/samba/SAMBA2. The *Winbind configuration directory* is /global/samba/winbind.

EXAMPLE 1–2 Samba instances with Failover File Systems

The following example shows Samba installed from Solaris 9 on Local File Systems and two Samba instances (SMB1 and SMB2) on Failover File Systems. The final output shows a subset of the /etc/vfstab entries for Samba deployed using Solaris Volume Manager.

```
# ls -l /local/samba
total 4
drwxr-xr-x  2 root    other      512 Dec 19 15:51 SMB1
drwxr-xr-x  2 root    other      512 Dec 19 15:51 SMB2
#
# more /etc/vfstab (Subset of the output)
/dev/md/dg_d7/dsk/d70    /dev/md/dg_d7/rdsk/d70    /local/samba/SMB1
      ufs          3          no      logging
/dev/md/dg_d8/dsk/d80    /dev/md/dg_d8/rdsk/d80    /local/samba/SMB2
      ufs          3          no      logging
#
```

Note – In the above example the *configuration directory* for the *Samba NetBIOS* instance SMB1 is /local/samba/SMB1, whereas the *configuration directory* for the *Samba NetBIOS* instance SMB2 is /local/samba/SMB2.

Configuration Requirements



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

Use the requirements in this section to plan the installation and configuration of Sun Cluster HA for Samba. These requirements apply to Sun Cluster HA for Samba only. You must meet these requirements before you proceed with your Sun Cluster HA for Samba installation and configuration.

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

TABLE 1–3 Samba components and their dependencies (via → symbol)

Componet	Description
Samba (Mandatory)	→ <i>Winbind</i> resource, if winbind and a single Samba instance is deployed. See below for more information. → <i>Winbind</i> resource group, if winbind and multiple Samba instances are deployed. See below for more information. → <i>SUNW.HAStoragePlus</i> resource The <i>SUNW.HAStoragePlus</i> resource manages the Samba File System Mount points and ensures that Samba is not started until these are mounted.
Winbind (Optional)	→ <i>SUNW.HAStoragePlus</i> resource The <i>SUNW.HAStoragePlus</i> resource manages the Winbind File System Mount points and ensures that Winbind is not started until these are mounted.

Note – For more detailed information about these Samba components, refer to the *smbd(8)*, *nmbd(8)*, *winbindd(8)*, and *smb.conf(5)* man pages.

If your configuration only has a single instance of Samba with winbind, the winbind resource must be registered within the same resource group as the Samba resource. Furthermore, the Samba resource must be start dependent on the winbind resource. Refer to the *r_properties(5)* man page for information on *Resource_dependencies*.

If your configuration has multiple instances of Samba with winbind, the winbind resource must be a scalable resource and all Samba resources must be start dependent on the winbind scalable resource group. Refer to the *rg_properties(5)* man page for information on *RG_dependencies*. Furthermore, the winbind *configuration directory* must be mounted as a Global File System.

Each Samba component has a configuration and registration file under */opt/SUNWscsmb/xxx/util*, where *xxx* is a three character abbreviation for the respective Samba component. These files allow you to register the Samba components with Sun Cluster.

Within these files, the appropriate dependencies have already been applied.

EXAMPLE 1–3 Samba configuration and registration file for Sun Cluster

```
# cd /opt/SUNWscsmb
#
# ls -l samba/util
```

EXAMPLE 1-3 Samba configuration and registration file for Sun Cluster (Continued)

```
total 6
-rwxr-xr-x  1 root    sys      1526 Dec 20 14:44 samba_config
-rwxr-xr-x  1 root    sys       736 Dec 20 14:44 samba_register
#
# ls -l winbind/util
total 4
-rwxr-xr-x  1 root    sys     1006 Dec 20 14:44 winbind_config
-rwxr-xr-x  1 root    sys       613 Dec 20 14:44 winbind_register
#
# more samba/util/*
::::::::::::
samba/util/samba_config
::::::::::::
#
# Copyright 2003 Sun Microsystems, Inc. All rights reserved.
# Use is subject to license terms.
#
# This file will be sourced in by samba_register and the parameters
# listed below will be used.
#
# These parameters can be customized in (key=value) form
#
#      RS - name of the resource for the application
#      RG - name of the resource group containing RS
#      SMB_BIN - name of the Samba bin directory
#      SMB_SBIN - name of the Samba sbin directory
#                (If no sbin then specify the bin directory)
#      SMB_INST - name of the Samba configuration directory
#      SMB_LOG - name of the Samba log directory
#                for log.smbd and log.nmbd
#                (If not specified will default
#                to $SMB_INST/logs)
#      FMUSER - name of the Samba fault monitor user
#      FMPASS - name of the Samba fault monitor user password
#      LH - name of the LogicalHostname SC resource
#      HAS_RS - name of the Samba HAStoragePlus SC resource
#
#      The following two examples illustrate sample parameters
#      for Samba packaged with Solaris 9 and Samba downloaded
#      from http://www.samba.org.
#
#      Please be aware that /global/samba/SAMBA1, /local/samba/SMB1 and
#      uid/pwd of samba are used just as examples. You will need
#      change this if your values are different.
#
#      SUNWsmb* packaged with Solaris 9
#
#      SMB_BIN=/usr/sfw/bin
#      SMB_SBIN=/usr/sfw/sbin
#      SMB_INST=/local/samba/SMB1
#      SMB_LOG=/local/samba/SMB1/logs
#      FMUSER=samba
#      FMPASS=samba
```

EXAMPLE 1-3 Samba configuration and registration file for Sun Cluster (Continued)

```
#
# Latest production release from http://www.samba.org
#
# SMB_BIN=/global/samba/bin
# SMB_SBIN=/global/samba/sbin or /global/samba/bin
# SMB_INST=/global/samba/SAMBA1
# SMB_LOG=/global/samba/SAMBA1/logs
# FMUSER=samba
# FMPASS=samba
#

RS=
RG=
SMB_BIN=
SMB_SBIN=
SMB_INST=
SMB_LOG=
FMUSER=
FMPASS=
LH=
HAS_RS=
:::::::::::::
samba/util/samba_register
:::::::::::::
#
# Copyright 2003 Sun Microsystems, Inc. All rights reserved.
# Use is subject to license terms.
#

. `dirname $0`/samba_config

scrgadm -a -j $RS -g $RG -t SUNW.gds \
-x Start_command="/opt/SUNWscsmb/samba/bin/start_samba \
-R $RS -G $RG -B $SMB_BIN -S $SMB_SBIN -C $SMB_INST \
-L $SMB_LOG -U ${FMUSER}%${FMPASS} -M scmondir" \
-x Stop_command="/opt/SUNWscsmb/samba/bin/stop_samba \
-R $RS -G $RG -B $SMB_BIN -S $SMB_SBIN -C $SMB_INST \
-L $SMB_LOG -U ${FMUSER}%${FMPASS} -M scmondir" \
-x Probe_command="/opt/SUNWscsmb/samba/bin/probe_samba \
-R $RS -G $RG -B $SMB_BIN -S $SMB_SBIN -C $SMB_INST \
-L $SMB_LOG -U ${FMUSER}%${FMPASS} -M scmondir" \
-y Port_list=137/udp,138/udp,139/tcp -y Network_resources_used=$LH \
-x Stop_signal=9 \
-y Resource_dependencies=$HAS_RS
#
```

- **The smb.conf file** — The Sun Cluster HA for Samba data service provides a sample smb.conf file, however you should ensure that the following parameters are set.

Note – The `smb.conf` file is probably the most important file within Samba. Therefore you are recommended to refer to the `smb.conf(5)` man page for complete configuration information on the parameters that follow. Be aware that the Samba man pages with Solaris 9 are only installed if you have installed the `SUNWsfman` package.

- Samba `smb.conf` file
 - **bind interfaces only** has to be set to `True`.
 - **interface** has to be defined to the Logical Hostname.
 - **netbios name** has to be set to the NetBIOS name by which the Samba server is known.
 - **security** specifies the security mode the Samba instance will run under.
- Winbind `smb.conf` file
 - **workgroup** has to be set to the same value as the Samba `smb.conf` entry.
 - **password server** has to be set to the same value as the Samba `smb.conf` entry.
 - **template homedir** has to be set to the same value as the Samba `smb.conf` entry.
 - **template shell** has to be set to the same value as the Samba `smb.conf` entry.
 - **winbind uid** has to be set to the same value as the Samba `smb.conf` entry.
 - **winbind gid** has to be set to the same value as the Samba `smb.conf` entry.
 - **winbind enum users** has to be set to the same value as the Samba `smb.conf` entry.
 - **winbind use default domain** has to be set to the same value as the Samba `smb.conf` entry.

Note – If additional `smb.conf` entries are made and those entries require a path variable, then you must ensure that any subsequent pathname is created within the relevant Samba or Winbind instance *configuration directory*.

Installing and Configuring Samba

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

Throughout the following next sections, references will be made to certain directories for Samba or Winbind. The following list shows common pathnames for these references as shown in previous examples. Refer to “Configuration Restrictions” on page 7 where these examples are shown.

- Samba installed from <http://www.samba.org> on a Global File System, with Samba instances and Winbind on a Global File System (Example 1-1)
 - *Samba-bin-directory* — /global/samba/bin
 - *Samba-sbin-directory* — /global/samba/sbin or
/global/samba/bin if Samba was installed with default settings.
 - *Samba-configuration-directory* — /global/samba/SAMBA1
 - *Winbind-configuration-directory* — /global/samba/winbind
- Samba installed from Solaris 9 on a Local File System, with Samba instances on a Failover File System (Example 1-2)
 - *Samba-bin-directory* — /usr/sfw/bin
 - *Samba-sbin-directory* — /usr/sfw/sbin
 - *Samba-configuration-directory* — /local/samba/SMB1

How to Install and Configure Samba

Use this procedure to install and configure Samba.

1. **Determine how Samba will be deployed in Sun Cluster** – Here you need to determine how Samba will be deployed.
 - Determine how many Samba instances will be deployed.
 - Determine if Winbind will be deployed.
 - Determine which Cluster File System will be used by each Samba instance and Winbind Instance, if deployed.
2. **Mount the Samba Cluster File Systems** – Once you have determined how Samba and Winbind will be deployed within Sun Cluster, you must ensure the Cluster File Systems are mounted.

Note – If Failover File Systems will be used by the Samba instance, you must mount these manually.

3. **Install Samba onto all nodes within Sun Cluster** – It is recommended that Samba be installed onto a Global File System, however for a discussion of the advantages and disadvantages of installing the software on local versus cluster files systems, see “Determining the Location of the Application Binaries” of the *Sun Cluster Data Services Installation and Configuration Guide*.

- **Download Samba from <http://www.samba.org>** — Ensure that `/usr/local/samba` is a Cluster File System or has a symbolic link to a Cluster File System. However, if you intend to use local disks for the Samba software, you will need to repeat this step on all nodes within Sun Cluster.

EXAMPLE 1-4 Samba installation from <http://www.samba.org>

The following example shows the Samba installation with winbind after it has been download, unzipped and extracted.

```
# cd <samba_install_directory>/source
#
# ./configure --with-winbind --with-pam
#
# make
#
# make install
```

- **Alternatively, install Samba from the Solaris 9 CD** — The following packages must be installed onto all nodes within Sun Cluster that will run the Samba service.

- SUNWsmbac
- SUNWsmbar
- SUNWsmbau
- SUNWsfman

4. Create an entry for the fault monitor user

- **If winbind is not being used**

Create an entry in `/etc/group` on all nodes with Sun Cluster.

```
# groupadd -g 1000 <fmggroup>
```

Create an entry in `/etc/passwd` on all nodes within Sun Cluster. This user should have a locked password, no shell and no home directory.

```
# useradd -u 1000 -g 1000 -s /bin/false <fnuser>
```

- **If winbind is being used**

Create the fault monitor user on the NT PDC with no home directory, no user profiles and no logon script. Also set the Password never expire parameter to true and User cannot change password parameter to true.

5. **Create some required directories for your Samba Instance(s)** – If you are deploying multiple instances of Samba, you will need to repeat this step for each Samba instance, ie each *samba-configuration-directory*. Furthermore a directory for any shares should be created, although this directory name can be a name of your choice.

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

Note – Refer back to “Configuration Restrictions” on page 7 for a description of the *<samba-configuration-directory>* and to “Installing and Configuring Samba” on page 13 for a list of common pathnames used from the examples in “Configuration Restrictions” on page 7 and in the further example below.

EXAMPLE 1–5 Directories for Samba instances named SAMBA1 and SAMBA2

The following example shows two Samba instances named SAMBA1 and SAMBA2. Samba has been installed from <http://www.samba.org> and */usr/local/samba* has been symbolically linked to */global/samba* which is mounted as a Global File System. The *samba-configuration-directory* for SAMBA1 is */global/samba/SAMBA1* and the *samba-configuration-directory* for SAMBA2 is */global/samba/SAMBA2*.

```
# ls -l /usr/local/samba
lrwxrwxrwx 1 root other 13 Oct 11 11:20 /usr/local/samba ->
/global/samba
#
# cd /global/samba
#
# ls -l
total 18
drwxr-xr-x 2 root other 512 Oct 11 15:00 bin
drwxr-xr-x 3 root other 512 Oct 14 13:49 lib
drwxr-xr-x 6 root other 512 Oct 11 15:00 man
drwxr-xr-x 2 root other 512 Oct 14 10:05 private
drwxr-xr-x 7 root other 512 Oct 14 13:39 SAMBA1
drwxr-xr-x 7 root other 512 Oct 14 13:40 SAMBA2
drwxr-xr-x 6 root other 512 Oct 11 15:01 swat
drwxr-xr-x 3 root other 512 Oct 14 10:45 var
drwxr-xr-x 2 root other 512 Jan 17 09:28 winbind
#
# cd SAMBA1
#
# mkdir -p lib logs private shares var/locks
#
# cd ../SAMBA2
#
# mkdir -p lib logs private shares var/locks
```

6. **Create the Samba smb.conf file according to your requirements** — The Sun Cluster HA for Samba data service provides a sample *smb.conf* file for Samba.

Note – If the Sun Cluster HA for Samba package (SUNWscsmb) was not installed during your initial Sun Cluster installation, you should proceed to “Installing the Sun Cluster HA for Samba Packages” on page 22 to install it. Afterwards, return back here to continue the Installation and Configuration of Samba.

The contents of `/opt/SUNWscsmb/samba/etc/smb.conf_sample` provides a sample Samba configuration file that you can use to create your Samba instance `<samba-configuration-directory>/lib/smb.conf`. However, note that you must still edit that file to reflect your configuration values.

```
# cp /opt/SUNWscsmb/samba/etc/smb.conf_sample \
<samba-configuration-directory>/lib/smb.conf
```

If the Winbind component is being installed, then after `smb.conf_sample` has been copied, you will need to add the following entries into the `global` section of `<samba-configuration-directory>/lib/smb.conf`. Be aware that these values shown below are the default values taken from the `smb.conf [5]` man page.

```
winbind uid = 10000-20000
winbind gid = 10000-20000
winbind enum users = yes
winbind enum groups = yes
```

Note – `pid` directory must point to `<samba-configuration-directory>/var/locks`, as specified within `smb.conf_sample`.

7. **Test the Samba `smb.conf` file** — Once the Samba `smb.conf` file has been created you should test the configuration before proceeding.

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

8. **If configured as an NT Domain Member, join the domain**

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

If successful, you will receive the following message.

```
# smbpasswd: Joined domain <DOMAIN>
```

9. **If configured as an NT PDC or with `security = user`, add the fault monitor user**

```
# <samba-bin-directory>/smbpasswd \
-c <samba-configuration-directory>/lib/smb.conf \
-a <fmuser>
```

Note – With Samba v2.2.2, currently packaged with Solaris 9, the `smbpasswd` program will not recognize the `-c` parameter and subsequently will try to look for the `smb.conf` file in `/etc/sfw`. To workaroud this, create a symbolic link from `/etc/sfw/smb.conf` to `<samba-configuration-directory>/lib/smb.conf`. If multiple Samba instances are being deployed, you will need to delete the symbolic link and repeat the process for each Samba instance.

If patch 114684-01 or later is installed then `smbpasswd` will reconize the `-c` parameter.

10. **Create some required directories for your Winbind Instance** – The remaining steps are only required if the Winbind component will be used. Otherwise you can skip the remaining steps and proceed to “Verifying the Installation and Configuration of Samba” on page 21.

If you are deploying Winbind, you will need to create the following directories and symbolic link within the *winbind-configuration-directory*.

```
# cd <winbind-configuration-directory>
#
# mkdir -p lib locks private var
# mkdir -p /var/winbind/pid
# ln -s /var/winbind/pid var/locks
```

Note – Refer back to “Configuration Restrictions” on page 7 for a description of the *<winbind-configuration-directory>* and to “Installing and Configuring Samba” on page 13 for a list of common pathnames used from the examples in “Configuration Restrictions” on page 7 and in the further example below.

EXAMPLE 1-6 Directories for Winbind instance named winbind

The following example shows the Winbind instance. Samba has been installed from <http://www.samba.org> and `/usr/local/samba` has been symbolically linked to `/global/samba` which is mounted as a Global File System. The *winbind-configuration-directory* for Winbind is `/global/samba/winbind`.

```
# ls -l /usr/local/samba
lrwxrwxrwx  1 root  other      13 Oct 11 11:20 /usr/local/samba ->
/global/samba
#
# cd /global/samba
#
# ls -l
total 18
drwxr-xr-x  2 root  other      512 Oct 11 15:00 bin
drwxr-xr-x  3 root  other      512 Oct 14 13:49 lib
drwxr-xr-x  6 root  other      512 Oct 11 15:00 man
```

EXAMPLE 1-6 Directories for Winbind instance named winbind (Continued)

```
drwxr-xr-x  2 root    other      512 Oct 14 10:05 private
drwxr-xr-x  7 root    other      512 Oct 14 13:39 SAMBA1
drwxr-xr-x  7 root    other      512 Oct 14 13:40 SAMBA2
drwxr-xr-x  6 root    other      512 Oct 11 15:01 swat
drwxr-xr-x  3 root    other      512 Oct 14 10:45 var
drwxr-xr-x  2 root    other      512 Jan 17 09:28 winbind
#
# cd winbind
#
# mkdir -p lib locks private var
# mkdir -p /var/winbind/pid
# ln -s /var/winbind/pid var/locks
```

11. **Create the Winbind smb.conf file according to your requirements (if required)** — The Sun Cluster HA for Samba data service provides a sample smb.conf file for Winbind.

Note – If the Sun Cluster HA for Samba package (SUNWscsmb) was not installed during your initial Sun Cluster installation, you should proceed to “Installing the Sun Cluster HA for Samba Packages” on page 22 to install it. Afterwards, return back here to continue the Installation and Configuration of Samba.

The contents of /opt/SUNWscsmb/winbind/etc/smb.conf_sample provides a sample Winbind configuration file that you can use to create your Winbind instance <winbind-configuration-directory>/lib/smb.conf. However, note that you must still edit that file to reflect your configuration values. In addition the following entry needs to be added to the [global] section within the smb.conf file.

```
# cp /opt/SUNWscsmb/winbind/etc/smb.conf_sample \
<winbind-configuration-directory>/lib/smb.conf
```

After smb.conf_sample has been copied, you will need to add the following entries into the [global] section of <winbind-configuration-directory>/lib/smb.conf.

```
smb passwd file = <winbind-configuration-directory>/private
lock directory = <winbind-configuration-directory>/locks
pid directory = <winbind-configuration-directory>/var/locks
```

Note – If the Winbind component will operate as a scalable service then the Winbind *configuration directory* must be mounted as a Global File System. See the `winbindd(8)` man page for a discussion on Name and ID Resolution being stored in a database under the lock directory.

`pid` directory must point to *configuration directory* `/var/locks`. In addition, ensure that *configuration directory* `/var/locks` is a symbolic link to a local file system ie `/var/winbind/pid`.

12. **Add winbind as a name service** — Add winbind as a name service to `/etc/nsswitch.conf` for `passwd` and `group`, on all nodes that will run the Sun Cluster HA for Samba data service.

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

13. **Copy and create some symbolic links** — Some files and symbolic links need to be setup for winbind on all nodes that will run the Sun Cluster HA for Samba data service.

```
# cd <samba-install-directory>
#
# cp source/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
```

14. **On one node start winbind**

Note – Depending on how Samba was installed, the winbind program maybe located within the `<samba-bin-directory>` or `<samba-sbin-directory>`

```
# <samba-[s]bin-directory>/winbindd -s <winbind-configuration-directory>/lib/smb.conf
```

15. **Populate the winbind database**

```
# getent passwd
# getent group
```

16. **Shutdown winbindd**

```
# pkill -TERM winbindd
```

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

Use this procedure to verify the installation and configuration. This procedure does not verify that your application is highly available because you have not yet installed your data service.

Note – Before verifying the Installation and Configuration of Samba, ensure that the Logical Hostname for the Samba is available. To do this you will need to complete steps 4, 6 and 7 in “How to Register and Configure Sun Cluster HA for Samba as a Failover Service” on page 25.

1. Test the smb.conf file

- a. Test the Samba smb.conf file

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

- b. Test the Winbind smb.conf file (if required)

```
# <samba-bin-directory>/testparm \
<winbind-configuration-directory>/lib/smb.conf
```

2. If configured as an NT Domain Member, join the domain

```
# <samba-bin-directory>/smbpasswd \
-c <samba-config-directory>/lib/smb.conf \
-j <DOMAIN> -r <PDC> \
-U <Administrator on the PDC>
```

If successful, you will receive the following message.

```
# smbpasswd: Joined domain <DOMAIN>
```

3. Start the Samba daemons

Note – Depending on how Samba was installed, the `smbd` and `nmbd` programs maybe located within the `<samba-bin-directory>` or `<samba-sbin-directory>`

```
# <samba-[s]bin-directory>/smbd -s <samba-config-directory>/lib/smb.conf -D
# <samba-[s]bin-directory>/nmbd -s <samba-config-directory>/lib/smb.conf -D
```

4. Connect to Samba

```
# <samba-bin-directory>/smbclient -N -L <NetBIOS-name>
# <samba-bin-directory>/smbclient '\\<NetBIOS-name>\scomondir' \
-U <fmuser> -c 'pwd;exit'
```

Note – Be aware that the single quotes are required on the last command.

5. Start the Winbind daemon (if required)

Note – Depending on how Samba was installed, the `winbind` program maybe located within the `<samba-bin-directory>` or `<samba-sbin-directory>`

```
# <samba-[s]bin-directory>/winbindd -s <winbind-configuration-directory>/lib/smb.conf &
```

6. Connect to Winbind (if required)

```
# getent passwd
# getent group
```

7. Stop the Samba daemons and winbindd (if required)

```
# pkill -TERM smbd
# pkill -TERM nmbd
# pkill -TERM winbindd
```

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. Perform this procedure on each cluster node where you are installing the Sun Cluster HA for Samba packages. To complete this procedure, you need the Sun Cluster Agents CD-ROM.

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

Install the Sun Cluster HA for Samba packages by using one of the following installation tools:

- The Web Start program
- The `scinstall` utility

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

How to Install the Sun Cluster HA for Samba Packages by Using the Web Start Program

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

1. **On the cluster node where you are installing the Sun Cluster HA for Samba packages, become superuser.**
2. **(Optional) If you intend to run the Web Start program with a GUI, ensure that your `DISPLAY` environment variable is set.**
3. **Load the Sun Cluster Agents CD-ROM into the CD-ROM drive.**

If the Volume Management daemon `vold(1M)` is running and configured to manage CD-ROM devices, it automatically mounts the CD-ROM on the `/cdrom/scdataservices_3_1_vb` directory.
4. **Change to the Sun Cluster HA for Samba component directory of the CD-ROM.**

The Web Start program for the Sun Cluster HA for Samba data service resides in this directory.

```
# cd /cdrom/scdataservices_3_1_vb/components/SunCluster_HA_Samba_3.1
```
5. **Start the Web Start program.**

```
# ./installer
```
6. **When you are prompted, select the type of installation.**
 - To install only the C locale, select Typical.
 - To install other locales, select Custom.
7. **Follow instructions on the screen to install the Sun Cluster HA for Samba packages on the node.**

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

8. **Exit the Web Start program.**
9. **Unload the Sun Cluster Agents CD-ROM from the CD-ROM drive.**
 - a. **To ensure that the CD-ROM is not being used, change to a directory that does *not* reside on the CD-ROM.**
 - b. **Eject the CD-ROM.**

```
# eject cdrom
```

▼ How to Install the Sun Cluster HA for Samba Packages by using the `scinstall` Utility

Use this procedure to install the Sun Cluster HA for Samba packages by using the `scinstall` utility. You need the Sun Cluster Agents CD-ROM to perform this procedure. This procedure assumes that you did not install the data service packages during your initial Sun Cluster installation.

If you installed the Sun Cluster HA for Samba packages as part of your initial Sun Cluster installation, proceed to “Registering and Configuring Sun Cluster HA for Samba” on page 25.

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

1. **Load the Sun Cluster Agents CD-ROM into the CD-ROM drive.**
2. **Run the `scinstall` utility with no options.**

This step starts the `scinstall` utility in interactive mode.
3. **Choose the menu option, Add Support for New Data Service to This Cluster Node.**

The `scinstall` utility prompts you for additional information.
4. **Provide the path to the Sun Cluster Agents CD-ROM.**

The utility refers to the CD as the “data services cd.”
5. **Specify the data service to install.**

The `scinstall` utility lists the data service that you selected and asks you to confirm your choice.

6. Exit the `scinstall` utility.
7. Unload the CD from the drive.

Registering and Configuring Sun Cluster HA for Samba

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

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

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

If you did not install the Sun Cluster HA for Samba packages as part of your initial Sun Cluster installation, go to “How to Install the Sun Cluster HA for Samba Packages by using the `scinstall` Utility” on page 24.

Otherwise, use this procedure to configure the Sun Cluster HA for Samba data service as a failover service.

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

2. Register the `SUNW.gds` resource type.

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

3. Register the `SUNW.HAStoragePlus` resource type.

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

4. Create a failover resource group .

```
# scrgadm -a -g Samba-failover-resource-group
```

5. Create a resource for the Samba Disk Storage.

```
# scrgadm -a -j Samba-has-resource \  
-g Samba-failover-resource-group \  
-t SUNW.HAStoragePlus \  
-x FilesystemMountPoints=Samba-instance-mount-points
```

6. Create a resource for the Samba Logical Hostname.

```
# scrgadm -a -L -j Samba-lh-resource \
-g Samba-failover-resource-group \
-l Samba-logical-hostname
```

7. Enable the failover resource group that now includes the Samba Disk Storage and Logical Hostname resources.

```
# scswitch -Z -g Samba-failover-resource-group
```

8. Create and register Winbind as a failover data service (if required)

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

Edit the winbind_config file and follow the comments within that file, ie

```
# These parameters can be customized in (key=value) form
#
#      RS - name of the resource for the application
#      RG - name of the resource group containing RS
#      WB_BIN - name of the Winbind bin directory
#      WB_INST - name of the Winbind configuration directory
#      NTUSER - name of the NT fault monitor user
#      LH - name of the LogicalHostname SC resource
#      HAS_RS - name of the Winbind HASToragePlus SC resource
```

Note – The following is an example for a Winbind instance with Samba installed from <http://www.samba.org>.

```
RS=wb-res
RG=smb-failover-rg
WB_BIN=/global/samba/bin
WB_INST=/global/samba/winbind
NTUSER=samba
LH=smb-lh-res
HAS_RS=wb-has-res
```

After editing winbind_config you must now register the resource.

```
# ./winbind_register
```

9. Enable the Winbind resource (if previous step was done)

```
# scstat
# scswitch -e -j Winbind-resource
```

10. Create and register Samba as a failover data service

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

Edit the samba_config file and follow the comments within that file, i.e.

```
# These parameters can be customized in (key=value) form
#
#      RS - name of the resource for the application
```

```

#         RG - name of the resource group containing RS
#   SMB_BIN - name of the Samba bin directory
#   SMB_SBIN - name of the Samba sbin directory
#               (If no sbin then specify the bin directory)
#   SMB_INST - name of the Samba configuration directory
#   SMB_LOG - name of the Samba log directory
#               for log.smbd and log.nmbd
#               (If not specified will default
#               to $SMB_INST/logs)
#   FMUSER - name of the Samba fault monitor user
#   FMPASS - name of the Samba fault monitor user password
#   LH - name of the LogicalHostname SC resource
#   HAS_RS - name of the Samba HASToragePlus SC resource, plus the
#             name of the Winbind resource if Winbind is configured
#             as a failover service

```

The following is an example for Samba instance SAMBA1 with Samba installed from <http://www.samba.org>

```

RS=smb-res
RG=smb-failover-rg
SMB_BIN=/global/samba/bin
SMB_SBIN=/global/samba/sbin or /global/samba/bin
SMB_INST=/global/samba/SAMBA1
SMB_LOG=/global/samba/SAMBA1/logs
FMUSER=samba
FMPASS=samba
LH=smb-lh-res
HAS_RS=smb-has-res or
HAS_RS=smb-has-res,wb-res if failover winbind is being used

```

The following is an example for Samba instance SMB1 with Samba installed from Solaris 9

```

RS=smb-res
RG=smb-failover-rg
SMB_BIN=/usr/sfw/bin
SMB_SBIN=/usr/sfw/sbin
SMB_INST=/local/samba/SMB1
SMB_LOG=/local/samba/SMB1/logs
FMUSER=samba
FMPASS=samba
LH=smb-lh-res
HAS_RS=smb-has-res

```

After editing `samba_config` you must now register the resource.

```
# ./samba_register
```

11. Enable each Samba resource.

Repeat this step for each Samba instance, if multiple instances were created.

```

# scstat
# scswitch -e -j Samba-resource

```

▼ How to Register and Configure Sun Cluster HA for Samba as a Failover Service with Winbind as a Scalable Service

Use this procedure to configure Sun Cluster HA for Samba as a failover data service with Winbind as a Scalable Service. This procedure assumes that you installed the data service packages during your initial Sun Cluster installation.

If you did not install the Sun Cluster HA for Samba packages as part of your initial Sun Cluster installation, go to “How to Install the Sun Cluster HA for Samba Packages by using the `scinstall` Utility” on page 24.

Otherwise, use this procedure to configure the Sun Cluster HA for Samba data service as a failover service.

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

2. Register the `SUNW.gds` resource type.

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

3. Register the `SUNW.HAStoragePlus` resource type.

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

4. Create a failover resource group for the shared network address.

```
# scrgadm -a -g Winbind-failover-resource-group
```

5. Create a resource for the Winbind Logical Hostname.

```
# scrgadm -a -s -j Winbind-lh-resource \
-g Winbind-failover-resource-group \
-l Winbind-logical-hostname
```

6. Create a scalable resource group for the scalable winbind resource.

```
# scrgadm -a -g Winbind-scalable-resource-group \
-y Maximum primaries=<number of nodes with Sun Cluster> \
-y Desired primaries=<number of nodes with Sun Cluster> \
-y RG_dependencies=Winbind-failover-resource-group
```

7. Create a resource for the Winbind Disk Storage.

```
# scrgadm -a -j Winbind-has-resource \
-g Winbind-scalable-resource-group \
-t SUNW.HAStoragePlus \
-x FilesystemMountPoints=Winbind-instance-mount-point \
-x AffinityOn=FALSE
```

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

```
# scswitch -Z -g Winbind-failover-resource-group
# scswitch -Z -g Winbind-scalable-resource-group
```

9. Create and register Samba as a failover data service

Follow Steps 4, 5, 6, 7, 10 and 11 in “How to Register and Configure Sun Cluster HA for Samba as a Failover Service” on page 25 to create a failover Samba service. Afterwards you will need to complete this last step to ensure that the Failover Samba Resource Group is start dependent on the Scalable Winbind Resource Group.

```
# scrgadm -c -g Samba-failover-resource-group \
-y RG_dependencies=Winbind-scalable-resource-group
```

10. Create and register winbind as a scalable data service

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

Edit the winbind_config file and follow the comments within that file, i.e.

```
# These parameters can be customized in (key=value) form
#
#      RS - name of the resource for the application
#      RG - name of the resource group containing RS
#      WB_BIN - name of the Winbind bin directory
#      WB_INST - name of the Winbind configuration directory
#      NTUSER - name of the NT fault monitor user
#      LH - name of the LogicalHostname SC resource
#      HAS_RS - name of the Winbind HASToragePlus SC resource
```

Note – The following is an example for a Winbind instance with Samba installed from <http://www.samba.org>.

```
RS=wb-res
RG=wb-scalable-rg
WB_BIN=/global/samba/bin
WB_INST=/global/samba/winbind
NTUSER=samba
LH=wmb-lh-res
HAS_RS=wb-has-res
```

After editing winbind_config you must now register the resource.

```
# ./winbind_register
```

11. Enable the Winbind resource.

```
# scstat
# scswitch -e -j Winbind-resource
```

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

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

1. **Become superuser on one of the nodes in the cluster that will host Samba.**
2. **Ensure all the Samba resources are online with `scstat`.**

```
# scstat
```

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

```
# scswitch -e -j Samba-resource
```

3. **Run the `scswitch` command to switch the Samba resource group to another cluster node, such as `node2`.**

```
# scswitch -z -g Samba-failover-resource-group -h node2
```

Understanding the Sun Cluster HA for Samba Fault Monitor

Use the information in this section to understand 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

■ Samba

- Sleeps for `Thorough_probe_interval`
- Tries to connect to the Samba instance fault monitor share (`scmondir`), using `smbclient`, as user `<fmuser>`. If this fails then the probe will restart the Samba resource.
- The `smbclient` uses the NetBIOS name of the Samba server to verify that the NetBIOS name server works. If this fails then the probe will restart the Samba resource.
- If all Samba processes have died, `pmf` will interrupt the probe to immediately restart the Samba resource.
- If the Samba resource is repeatedly restarted and subsequently exhausts the `Retry_count` within the `Retry_interval` then a failover is initiated for the Resource Group onto another node.

■ Winbind

- Sleeps for `Thorough_probe_interval`
- Retrieves the defined `<ntuser>` by using `getent passwd <ntuser>`. If this fails then the probe will restart the Winbind resource.
- If the Winbind resource is repeatedly restarted and subsequently exhausts the `Retry_count` within the `Retry_interval` then a failover is initiated for the Resource Group onto another node.

Note – If `nscd` is on (default) and the defined `<ntuser>` is cached by the `nscd` daemon, then `getent` will return a success even if winbind itself isn't working.

Debug Sun Cluster HA for Samba

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

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

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

Each Samba component has a `DEBUG` file under `/opt/SUNWscsmb/xxx/etc`, where `xxx` is a three character abbreviation for the respective Samba component.

These files allow you to turn debug on for all Samba instances or for a specific Samba 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, you will need to repeat this step on all nodes within Sun Cluster.

1. Edit `/etc/syslog.conf`

Edit `/etc/syslog.conf` and change `daemon.notice` to `daemon.debug`

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

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

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

2. Edit `/opt/SUNWscsmb/samba/etc/config`

Perform this step for the Samba component (`smb`), then repeat for the optional Winbind components that requires debug output, on each node of Sun Cluster as required.

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

```
# cat /opt/SUNWscsmb/samba/etc/config
#
```



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

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

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