



VMS Software

Samba V4.10-16D for VSI OpenVMS

Release Notes

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Operating Systems: VSI OpenVMS x86-64 Version 9.2-2 or higher
VSI OpenVMS IA-64 Version 8.4-1H1 or higher
VSI OpenVMS Alpha Version 8.4-2L1 or higher

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1. Introduction

VMS Software Inc. (VSI) is pleased to provide you with a new version of Samba for VSI OpenVMS. This release of Samba for VSI OpenVMS Alpha, Integrity, and x86-64 servers is based on Samba 4.10.16 and represents a significant update from the previous 4.6-5x versions of Samba for VSI OpenVMS. This is primarily a bug-fix release which addresses various issues identified in the previous 4.10-16C kit.

For a more detailed description of new features, enhancements, and known issues, please refer to the release notes found at the following links. Please be aware that some product features may be platform-specific.

- <https://www.samba.org/samba/history/samba-4.10.0.html>
- <https://www.samba.org/samba/history/samba-4.10.16.html>

2. Samba Documentation

For the latest information about Samba, see <https://www.samba.org/samba/docs/>. Please be aware that some features may be specific to Samba on OpenVMS and therefore are described only in this document.

3. New and Changed Features

This release of Samba for VSI OpenVMS is based on Samba 4.10.16. Since V4.6-5D, a number of changes in operation and configuration of Samba for OpenVMS needed to be made according to the changes that were introduced in Samba 4.10.16. See the list of changes below:

- The RMS protection mask of the SAMBA\$SETTINGS.COM file now includes `W:E` by default.
- The value of the "client ldap sasl wrapping" parameter was changed from "plain" to "sign" in SAMBA\$CONFIG.COM.
- The SAMBA\$CONFIG Server Comment option now supports the percent sign (%).
- The SMBSHOW symbol definition has been modified to include the headers from the **SHOW SYSTEM** display.
- The SAMBA\$DEFINE_COMMANDS.COM no longer sets the process parse style to EXTENDED.

A list of significant issues from the previous release of Samba for VSI OpenVMS that were fixed in this release, is provided in *Section 15, "Specific Issues Fixed Since the V4.10-16C Release"*.

4. Requirements

Operating system and layered product software versions requirements for Samba V4.10-16D for VSI OpenVMS servers are listed below.

- VSI OpenVMS x86-64 Version 9.2-2 or higher, VSI OpenVMS IA-64 Version 8.4-1H1 or higher, VSI OpenVMS Alpha Version 8.4-2L1 or higher.

Important

This will be the last Samba release supported on VSI OpenVMS version 8.4-1H1 and will also be the last version provided for VSI OpenVMS Alpha systems. Future releases of Samba for VSI OpenVMS Integrity will require version 8.4-2L1 or higher.

- VSI TCP/IP Services for OpenVMS, HPE TCP/IP Services for VSI OpenVMS, or MultiNet TCP/IP.
- Samba for VSI OpenVMS must be installed and run on an ODS-5 file system volume. The software cannot be installed on an ODS-2 file system volume and ODS-2 file systems cannot be used for file shares.
- The VSI OpenVMS internationalization data kit (VMSI18N) must be installed for Samba to be able to correctly display international characters in file names.
- For VSI OpenVMS version 8.4-2L3 users, it is recommended that the RTL update VMS842L3I_RTL-V0600 be installed.
- VSI SSL3 V3.0.8 or higher
- VSI LDAP V2.6.3 or higher

The user should be familiar with the installation, configuration, and use of open-source products such as Samba in the VSI OpenVMS environment.

4.1. Recommended Reading

Before using Samba V4.10-16D on OpenVMS, VSI recommends that users read the documentation available at <https://www.samba.org/samba/> in order to understand how to configure and manage the software.

5. Before Installing the Kit

Make sure your system meets the following requirements before you install Samba for VSI OpenVMS.

Samba requires the SYSGEN parameters listed in the table below to be set at least to the specified minimum value, otherwise the installation will fail. Note that each time you change the values of these SYSGEN parameters, you must run AUTOGEN for the changes to take effect and then reboot your system.

Parameter	Minimum Value	Add to MODPARAMS.DAT
PROCSECTCNT	512	MIN_PROCSECTCNT = 512
CHANNELCNT	2560	MIN_CHANNELCNT = 2560
PQL_DPGFLQUOTA	256000	MIN_PQL_DPGFLQUOTA = 256000

If you are upgrading or migrating from the old CIFS for OpenVMS to Samba for VSI OpenVMS, VSI strongly recommends that you backup the existing CIFS SAMBA\$ROOT directory tree prior to installing Samba.

Make sure enough space is allocated to process dynamic memory. For details, see *Section 13, "Memory Requirements"*.

5.1. Important Cluster Considerations

Running the old CIFS for OpenVMS and Samba for VSI OpenVMS in the same cluster is not supported. Existing CIFS for OpenVMS configurations will be migrated to Samba for VSI OpenVMS equivalents when SAMBA\$CONFIG.COM is executed.

Multiple instances of Samba can be run in a cluster. An instance is defined by the SAMBA\$ROOT: directory tree. If there are two separate SAMBA\$ROOT: directory trees, the cluster will contain two instances of Samba. Cluster members that share the same SAMBA\$ROOT: directory tree form a Samba cluster.

Each Samba instance requires a unique Samba cluster alias name. For example, in a cluster with three nodes, the following configurations are possible:

- All nodes can be members of a single Samba cluster instance.
- Two nodes can be members of a Samba cluster instance while the third node runs a separate, standalone instance of Samba.
- All three nodes can run separate standalone instances of Samba.

Warning

No two instances of Samba should allow access to the same share directories and files in a cluster as this can lead to data corruption. Separate instances of Samba do not share file locking details with other instances.

6. Installing the Kit

The Samba kit is provided as a compressed VSI OpenVMS PCSI kit, named VSI-AXPVMS-SAMBA-V0410-16D-1.PCSI\$COMPRESSED for Alpha, VSI-I64VMS-SAMBA-V0410-16D-1.PCSI\$COMPRESSED for Integrity, and VSI-X86VMS-SAMBA-V0410-16D-1.PCSI\$COMPRESSED for x86-64 servers. It can be installed by a suitably privileged user via the following command:

```
$ PRODUCT INSTALL SAMBA
```

By default, Samba will be installed to SYS\$SYSDEVICE:[VMS\$COMMON.SAMBA]. The **/DESTINATION** qualifier may be used to install the software into an alternative location.

Note

If a previous version of Samba for VSI OpenVMS that was installed using the **/DESTINATION** qualifier to specify a non-default location for the installation exists on the system, the same non-default location must be specified via the **/DESTINATION** qualifier when installing this new version of Samba.

If multiple cluster members will share the same SAMBA\$ROOT: directory tree, Samba must be installed onto a device that is mounted by all cluster members.

To allow mixed-architecture cluster nodes to be members of the same Samba instance, install Samba on a node of each architecture type but specify the same installation location using the **/DESTINATION** qualifier.

If you plan to run Samba on multiple cluster members of the same architecture which do not have a common system disk, install Samba on one cluster member only. Then, follow the post-installation

instructions described in *Section 7, "Post-Installation Steps"* to complete the installation on other cluster members.

The installation directory of Samba for VSI OpenVMS is associated with the SAMBA\$ROOT logical name. SAMBA\$ROOT is a rooted logical name that defines the root location for the Samba configuration files, logs, and other product files. Samba configuration files are stored in SAMBA\$ROOT:[LIB] and, by default, logs are stored in SAMBA\$ROOT:[VAR]. The SAMBA\$ROOT logical name is defined in SYS\$STARTUP:SAMBA\$DEFINE_ROOT.COM (which is executed from the Samba start up procedure, SYS\$STARTUP:SAMBA\$STARTUP.COM).

Below you can see a sample installation log. Note that your output may differ slightly from that shown below, depending on the platform and other factors.

```
Performing product kit validation of signed kits ...
```

```
The following product has been selected:
```

```
VSI I64VMS SAMBA V4.10-16D                Layered Product
```

```
The following product has been selected:
```

```
VSI I64VMS SAMBA V4.10-16D                Layered Product
```

```
Do you want to continue? [YES]
```

```
Configuration phase starting ...
```

```
You will be asked to choose options, if any, for each selected product and for any products that may be installed to satisfy software dependency requirements.
```

```
Configuring VSI I64VMS SAMBA V4.10-16D: VSI OpenVMS SAMBA
```

```
© (c) Copyright 2023 VMS Software, Inc.
```

```
OpenVMS SAMBA is released under the terms of GNU Public License.
```

```
This installation procedure requires that all the following conditions are satisfied:
```

1. This procedure is running on an Itanium processor.
2. The system is running OpenVMS V8.4-2L1 or later.
3. SSL3 IA64 installed version V3.0.8 or later.
4. LDAP IA64 installed version V2.6.3 or later.
5. All required privileges are currently enabled.
6. No CIFS or SAMBA images are running on this node or anywhere in the cluster that make use of common samba\$root installation directory.
7. ODS5 filesystem only.
8. SYSGEN Parameter values:

Parameter	Minimum Required
-----	-----
CHANNELCNT	2560
PROCSECTCNT	512
PQL_DPGFLQUOTA	256000

```
Do you want to continue? [Please, type N or NO if you don't want to continue, any other answer means YES]
```

```
* This product does not have any configuration options.
```

```
Execution phase starting ...
```

The following product will be installed to destination:

VSI I64VMS SAMBA V4.10-16D DISK\$I64V841H1SYS:[VMS\$COMMON.]

Portion done: 0%...10%...20%...30%...40%...50%...60%...70%...80%...90%

User Accounts and User Identification Codes (UICs)

The OpenVMS SAMBA installation creates five OpenVMS accounts: SAMBA\$SMBD, SAMBA\$NMBD, SAMBA\$GUEST, SAMBA\$TMPLT and SMBADMIN. The default UIC group number for these new accounts depends on the following:

- o If you are installing the server for the first time, the default is the first unused UIC group number, starting with 360.
- o If any of these accounts already exists, then the default UIC group number will not be used to change the UIC of any existing accounts.

For more information about UIC group numbers, see the OpenVMS System Manager's Manual.

Enter default UIC group number for SAMBA accounts

Group: [360]

Creating OpenVMS accounts required by SAMBA

Created account SAMBA\$SMBD
Created account SAMBA\$NMBD
Created account SAMBA\$GUEST
Created account SAMBA\$TMPLT
Created account SMBADMIN

SAMBA\$ROOT is defined as "DSA102:[SYS0.SYSCOMMON.SAMBA.]"

Setting file protections...

File protections are set

Creating Samba for OpenVMS root definition file SYS\$COMMON:[SYS\$STARTUP]SAMBA\$DEFINE_ROOT.COM...

File created
Save startup files
Setup SAMBA logical environment
Successfully finished

In a cluster, on all the nodes that are going to use common samba\$root installation directory as the current node, copy the following files to SYS\$STARTUP directory of each node:

SYS\$STARTUP:SAMBA\$STARTUP.COM
SYS\$STARTUP:SAMBA\$SHUTDOWN.COM
SYS\$STARTUP:SAMBA\$DEFINE_ROOT.COM

To automatically start OpenVMS SAMBA during system startup add the following line to the file SYS\$MANAGER:SYSTARTUP_VMS.COM after the TCPIP startup command procedure:

\$ @SYS\$STARTUP:SAMBA\$STARTUP.COM

To shut down OpenVMS SAMBA during system shutdown
add the following line to the file SYS\$MANAGER:SYSHUTDOWN.COM:

```
$ @SYS$STARTUP:SAMBA$SHUTDOWN.COM
```

Press Enter to continue:

To configure OpenVMS SAMBA on any of the nodes in OpenVMS
cluster that will share the common samba\$root installation
directory as the current node, execute:

```
$ @SYS$STARTUP:SAMBA$DEFINE_ROOT.COM  
$ @SAMBA$ROOT:[BIN]SAMBA$CONFIG.COM
```

Define symbols for all Samba utilities:

```
. ..100% $ @SAMBA$ROOT:[BIN]SAMBA$DEFINE_COMMANDS.COM
```

The following product has been installed:

VSI I64VMS SAMBA V4.10-16D Layered Product

7. Post-Installation Steps

After you have successfully installed Samba for VSI OpenVMS, follow these steps to configure it:

1. Verify that the SAMBA\$ROOT logical name is set:

```
$ SHOW LOGICAL SAMBA$ROOT  
"SAMBA$ROOT" = "$1$DGA400:[SYS1.SYSCOMMON.SAMBA.] "
```

If the logical name is not defined, execute the following command:

```
$ @SYS$STARTUP:SAMBA$DEFINE_ROOT
```

2. Define symbols for all Samba utilities:

```
$ @SAMBA$ROOT:[BIN]SAMBA$DEFINE_COMMANDS.COM
```

3. In a cluster, copy the files from SAMBA\$ROOT:[CLUSTER] to the
SYS\$COMMON:[SYS\$STARTUP] directory on the nodes in the cluster that meet both of the
following requirements:

- Use the same SAMBA\$ROOT directory tree as the installation node.
- Do not boot from the same system disk as the installation node.

4. Configure the Samba server:

Note

For this release of Samba for VSI OpenVMS, the server must be configured as a standalone server or a domain member server.

Run the Samba configuration utility to generate the Samba configuration files. These files are not created during installation and must be generated as described below. Note that the Samba configuration utility also migrates existing CIFS for OpenVMS configurations to Samba (see *Section 8, "Migrating CIFS for VSI OpenVMS"*).

When configuring multiple cluster members that share the same SAMBA\$ROOT: directory tree, be aware of the following:

- The Core and Generic menu options are shared by all members of the same Samba cluster instance; changes to these options affect all cluster members. The System Specific menu options are unique to the cluster member on which they are set.
- On the first cluster member, at the main menu, select option “A” to configure all options.
- On subsequent cluster members, at the main menu, select only option 1 – System Specific options.

\$ SMBCONF

SAMBA Configuration Utility

Use this utility to configure the server role, create TCP/IP services, and configure other options.

The following conditions must be met prior to configuring Samba:

1. Log into OpenVMS using a privileged system account.
2. Shutdown Samba. If Samba is running on multiple cluster members, shutdown Samba on all cluster members which share the same SAMBA\$ROOT: directory tree as the node being configured.

For more information about Samba Server configuration, please refer to the Samba for OpenVMS release notes.

Press Enter to continue:

NOTE: The Option "1 - System Specific setup" should be executed on each of the nodes sharing common samba\$root installation directory.

On an OpenVMS cluster, please execute the following options from the OpenVMS Samba Main Configuration Options Menu on only one of the cluster nodes that share the common samba\$root installation directory:

- 2 - Generic options
- 3 - Core environment

If Samba Server is being configured afresh on this node, choose option:

A - Configure options 1 - 3

Press Enter to continue:

Checking for existing Samba Server configuration...

OpenVMS Samba Main Configuration Options Menu

Configuration options:

- 1 - System specific setup

```
2 - Generic options
3 - Core environment
A - Configure options 1 - 3
[E] - Exit Menu
```

Enter configuration option:

Configure Samba as appropriate using the menu options provided. To generate a minimal basic configuration, select the "A" option and accept the defaults as you step through each submenu.

The TESTPARM utility should be used to review the final configuration.

For additional information about configuring Samba, please refer to the documentation available at <https://www.samba.org/samba/>.

5. Supported Character Sets

Samba supports all character sets supported by the VSI OpenVMS internationalization data kit (VMSI18N), including ISO8859: ISO8859-1, ISO8859-2, ISO8859-5, ISO8859-7, ISO8859-8, ISO8859-9, ISO8859-15. The default character set is UTF-8. For example, to configure Samba to use the ISO8859-1 character set, perform the following steps:

- a. Add the following line to the [global] section of SAMBA\$ROOT:[LIB]SMB.CONF:

```
unix charset = iso8859-1
```

- b. Add the following line to SAMBA\$ROOT:[BIN]SAMBA\$SETTINGS.COM:

```
$ DEASSIGN/NOLOG DECC$FILENAME_ENCODING_UTF8
```

6. Start the Samba server:

```
$ SMBSTART
```

```
Creating NMBD Process...
```

```
%RUN-S-PROC_ID, identification of created process is 000143A2
```

```
Enabling SMBD services...
```

```
Successfully enabled TCPIP SMBD services
```

7. Add the following command to the system startup procedure to start Samba when the system is booted. Note that this command must be added after the command that starts TCP/IP.

```
$ @SYS$STARTUP:SAMBA$STARTUP.COM
```

8. Add the following command to the system shutdown procedure to stop Samba during system shutdown:

```
$ @SYS$STARTUP:SAMBA$SHUTDOWN.COM
```

9. Use the SMBMANAGE utility to manage Samba shares, users, groups, and account policies as necessary.

10. You may wish to run the following command to add a version limit on the subdirectories in SAMBA\$ROOT:[VAR.CORES] to prevent unnoticed process dump files from consuming huge amounts of disk space. You may use an alternative value for the version limit as appropriate to your environment.

```
$ set file/version_limit=10 samba$root:[var.cores]*.dir
```

11. By default, when the SMBCLIENT utility is connected to a share on a Samba for VSI OpenVMS host, it does not support paths using the VSI OpenVMS directory syntax. To enable the support of the VSI OpenVMS directory syntax for SMBCLIENT, add the following entry to the [global] section of SAMBA\$ROOT:[LIB]SMB.CONF:

```
vms path allow = yes
```

8. Migrating CIFS for VSI OpenVMS

Run SAMBA\$CONFIG.COM after installation to migrate an existing CIFS for OpenVMS configuration to Samba for OpenVMS. SAMBA\$CONFIG.COM runs SAMBA\$MIGRATION.COM, which renames the appropriate CIFS users/groups and their associated OpenVMS account and identifier names (changing CIFS to SAMBA) and updates references in .CONF and USERNAME.MAP files. SAMBA\$CONFIG.COM also has routines to migrate obsolete, deprecated, and modified parameters from CIFS for OpenVMS to their equivalents in Samba for OpenVMS.

The Samba migration process saves the old CIFS for OpenVMS configuration files to a subdirectory in SAMBA\$ROOT:[BACKUP_MIGRATION] and produces a log file named according to the following format: SAMBA\$ROOT:[VAR]SAMBA\$MIGRATION_date_time.LOG.

To undo or roll back the migration if problems occur, proceed as follows:

1. Run the migration procedure (SAMBA\$MIGRATION.COM) and specify the path where the backup migration files are stored. In the following example, the backed up CIFS configuration files are stored in the SAMBA\$ROOT:[BACKUP_MIGRATION.30APR2019_103511] directory:

```
$ @SAMBA$ROOT:[BIN] SAMBA$MIGRATION -  
_$_ SAMBA$ROOT:[BACKUP_MIGRATION.30APR2019_103511]
```

2. Reinstall CIFS for OpenVMS

9. WINBIND Support

WINBIND is a component of Samba that provides user and group identity mapping. In Samba for OpenVMS, WINBIND is a separate daemon process with one to four subprocesses.

Note

In CIFS for OpenVMS, there is no separate WINBIND process; the WINBIND functionality is included in each SMBD process instead.

When deciding whether to enable or disable WINBIND, consider the following:

- If Samba is configured in a standalone server role, WINBIND provides no useful purpose and would typically be disabled.
- If Samba is configured as a member server, WINBIND is required and provides three main functions:
 - WINBIND is used when authenticating domain users (including trusted domain users). If WINBIND is not running, domain users cannot be authenticated and will fail to connect.

- WINBIND allows for referencing domain user and group accounts when managing Samba. For example, to add or remove domain user and group accounts as members of local Samba groups.
- WINBIND allows system administrators to create OpenVMS user accounts dynamically. Each Samba user requires an OpenVMS account with a unique UIC in order to be distinguished from other users for security purposes. Administrators may create the necessary OpenVMS accounts manually or allow WINBIND to create OpenVMS accounts for Samba users dynamically, as they are needed. When properly configured, WINBIND creates a new OpenVMS account with a unique UIC for any domain user who successfully authenticates but does not already have an OpenVMS account mapped to their Windows account.

9.1. Configuring WINBIND

Before configuring WINBIND on a member server, determine what functionality is desired. If configured to dynamically create VSI OpenVMS user accounts, WINBIND requires a range of values (specified in decimal) to allocate as user identifiers and from which a unique VSI OpenVMS username and UIC are derived.

The range is specified in decimal using the format “low-value - high-value”, where the low-value must be less than high-value. Due to the OpenVMS UIC number restrictions, the low-value should not be less than 256 and the high-value cannot exceed 16382.

If WINBIND is configured to prevent dynamic creation of OpenVMS accounts for Samba users, the range can be a minimum of 1; for example, 10000 - 10001.

If WINBIND is configured to allow dynamic creation of OpenVMS accounts for Samba users, the range specified should be large enough to accommodate the expected number of user accounts that could possibly be created. However, the high value of the range can be increased at any time to provide additional user identifiers if necessary.

For example, a UIC number range of 5000 - 6000 allows WINBIND to create a total of 1001 OpenVMS user accounts.

When creating an OpenVMS user account, the ID number allocated by WINBIND is converted to hexadecimal and appended to the string “SAMBA\$” to produce an OpenVMS username. The allocated WINBIND ID number is also converted to octal and used as the UIC group and member number assigned to the OpenVMS account. For example, if WINBIND allocates ID 5200 to a new user, the OpenVMS account name will be SAMBA\$1450 and its UIC will be [12120,12120].

To configure WINBIND, use the SAMBA\$CONFIG utility. From the Main Configuration Options menu, option “3 - Core environment” includes the following WINBIND configuration option:

```
4. Enable WINBIND:
```

To disable all WINBIND functionality, set option 4 to `no`. This will prevent the WINBIND process from starting.

To enable WINBIND, set option 4 to `yes`. Note that WINBIND is required on domain member servers. When WINBIND is initially enabled, SAMBA\$CONFIG will prompt the user for the UIC number range. After specifying the range, SAMBA\$CONFIG returns to the core configuration menu and displays the following WINBIND options:

```
4. Enable WINBIND: yes
```

- 4A. UIC number range: **10000–10001**
- 4B. Allow Samba to create OpenVMS accounts on-the-fly: **yes**

To prevent WINBIND from dynamically creating OpenVMS user accounts, specify **no** for the 4B option.

9.2. Samba WINBIND Configuration Parameters

The Samba configuration parameter `"idmap config * : range = "` specifies the UIC number range that WINBIND uses when allocating user identifiers.

Note that the TESTPARM utility will display the following messages when no range is specified. These messages may be ignored:

```
idmap range not specified for domain '*'
ERROR: Invalid idmap range for domain *!
```

The Samba configuration parameter `"idmap config * : read only"` controls WINBIND ID allocation. If set to **yes**, WINBIND is prevented from allocating user IDs. If set to **no** (the default), WINBIND may allocate user IDs.

10. What's Missing?

This release of Samba for OpenVMS does not include the following functionality:

- The classic Primary Domain Controller (PDC) and Backup Domain Controller (BDC) roles are not supported.
- The Active Directory Domain Controller role is not supported in this release. Support for this functionality is being considered and may be added later.
- A copy of the source code for Samba on OpenVMS is not included with the installation kit. However, we will provide a copy of the code on request, contact support@vmssoftware.com.

11. Known Issues

The following list identifies currently known problems and restrictions with this release of Samba for VSI OpenVMS.

- The modified date on some files may change unexpectedly, after the file has been opened but its contents have not been changed. This issue is most commonly observed with Microsoft Office files. In order to avoid this problem, it is necessary to ensure that the logical name `DECC$EFS_FILE_TIMESTAMPS` is defined (with a value of "TRUE") such that the logical name is visible to Samba processes, and to ensure that any file systems serving the files in question has file access times set on (per the **SET VOLUME/VOLUME_CHARACTERISTICS=ACCESS_DATES** command).
- If a file and directory have the same name and exist in the same directory, both objects are displayed as directories.
- The WINBIND process may become unresponsive or crash on Alpha hosts if the `SYSGEN PQL_DPGFLQUOTA` parameter value is less than 256000. `PQL_DPGFLQUOTA` is a dynamic `SYSGEN` parameter.

- To use Kerberos authentication (via the `-k` option) with the `SMBCLIENT` utility, perform the following steps:
 1. If necessary, disable elevated process privileges (`NOIMPERSONATE`, `NOSYSRPRV`, `NOREADALL`, and `NOBYPASS`):

```
$ SET PROCESS/PRIVILEGE=(NOALL,TMPMBX,NETMBX)
```
 2. Obtain a Kerberos ticket using your domain username:

```
$ net ads kerberos kinit --user domain-username
```
 3. Optionally (and if possible) elevate process privileges (to avoid potential non-fatal errors); for example:

```
$ SET PROCESS/PRIVILEGE=ALL
```
 4. Run `SMBCLIENT`, specifying values for server and share names as appropriate:

```
$ SMBCLIENT -k \\server\share
```
- The OpenVMS owner of new objects created by users with a local Samba account that is included in the admin users list is incorrectly set to `SAMBA$SMBD` instead of the owner of the parent directory. In many environments, this issue can be avoided by adding the following line to the applicable share section in `SAMBA$ROOT:[LIB]SMB.CONF`:

```
inherit owner = yes
```
- The `"net rpc user rename"` command is not supported by Samba for OpenVMS. This is consistent with previous CIFS for OpenVMS behaviour.
- The use of Samba for OpenVMS is not supported for Microsoft Windows XP and Windows 7 clients.
- If the Samba share parameter `"inherit owner"` equals `"no"` and a parent directory is owned by a resource identifier, when a user creates a new file or folder, Samba sets the file owner to the UIC of the user creating the file rather than the resource identifier. To retain the usual OpenVMS behaviour (that is, to set the resource identifier as the file owner), add `"inherit owner = yes"` to the applicable `[share]` sections in `SMB.CONF`.
- For systems running the TCPware TCP/IP stack, Samba is not able to auto-detect the active TCPware IP interface addresses. Therefore, the list of interfaces available for use by Samba must be configured manually (see *Section 14, "Systems Running TCPware TCP/IP"* for additional information).
- The `SMBCLIENT "more"` command, which displays the contents of a file, requires the GNV for OpenVMS to be installed. The GNV kit and the associated documentation are available at <https://sourceforge.net/projects/gnv/>.

After installing GNV, perform the following tasks to allow the `SMBCLIENT "more"` command to function correctly:

1. Define the GNU logical name by running the command below (you may wish to add this command to the system start up procedure):

```
$ @SYS$STARTUP:GNV$STARTUP.COM
```
2. Make the GNV utilities available by running the following command, which ensures that the logical name `DCL$PATH` is correctly defined in order for users to access more and

other GNV commands. You may wish to add this command to your LOGIN.COM file or to SYS\$MANAGER:SYLOGIN.COM.

```
$ @GNU:[LIB]GNV_SETUP.COM
```

3. If the process has a MORE symbol defined, it must be deleted:

```
$ SHOW SYMBOL MORE
$ DELETE/SYMBOL[/GLOBAL] MORE
```

12. DNS Requirements for Samba Member Servers

A Samba member server requires a proper DNS configuration to avoid long delays or timeouts when attempting to locate domain controllers.

If an OpenVMS host is configured to use the same DNS domain as the domain Samba will join, no changes are required.

However, if Samba is connected to a domain which is not the same DNS domain configured on the OpenVMS host, the OpenVMS host should be configured as a cache-only BIND server and use a stub zone or conditional forwarding for the domain that Samba will connect to. Additionally, the DNS name resolver on the OpenVMS host should be configured to use localhost as its DNS server.

Prior to connecting the Samba server to a domain, customers should verify the OpenVMS host is capable of resolving DNS SRV record types for the domain. For example, use the following command to verify that Samba will connect to a domain named example.com:

```
$ dig SRV _kerberos._tcp.example.com +noall +answer +additional
```

The response should be a list of domain controllers.

13. Memory Requirements

Since Samba defines many OpenVMS process logical names and dynamically activates image libraries, systems running Samba may require increased amounts of process dynamic memory space. The process dynamic memory size is controlled by the SYSGEN CTLPAGES parameter. Samba may consume the following amount of process dynamic memory:

Architecture	Memory Consumed
Alpha	115KB
IA-64	220KB
x86-64	250KB

On IA-64 and x86-64 hosts, the default value of CTLPAGES is 1056 pagelets (528KB), which is typically sufficient to support Samba requirements. On Alpha, however, the default is just 288 pagelets (144KB), which may be insufficient.

When the process dynamic memory space is insufficient, Samba administrators may encounter errors similar to the following:

- When executing SAMBA\$ROOT:[BIN]SAMBA\$DEFINE_COMMANDS.COM:

```
%SYSTEM-F-INSMEM, insufficient dynamic memory
```

- When executing Samba utilities, such as SMBSTATUS, SMBCLIENT, and NET (the displayed image name may be different):

```
%DCL-W-ACTIMAGE, error activating image LIBAUTHKRB5-SAMBA4-CLI-EIMGNAME, image file
$1$DGA25:[SYS0.SYSCOMMON.SAMBA.][LIB.ALPHA.PRIVATE]SAMBA$LIBAUTHKRB5-SAMBA4.EXE;1
-SYSTEM-F-INSFP1POOL, insufficient process dynamic memory
```

- When starting Samba (the displayed image names may be different):

```
Creating NMBD Process...
%RUN-S-PROC_ID, identification of created process is 20E00456
Creating WINBIND Process...
%RUN-S-PROC_ID, identification of created process is 20E00457
Enabling SMBD services...
%DCL-W-ACTIMAGE, error activating image LIBGSSAPI-SAMBA4-CLI-EIMGNAME, image file
$1$DGA25:[SYS0.SYSCOMMON.SAMBA.][LIB.ALPHA.PRIVATE]SAMBA$LIBGSSAPISAMBA4.EXE;1
-SYSTEM-F-INSFP1POOL, insufficient process dynamic memory
%DCL-W-ACTIMAGE, error activating image DPML$SHR-CLI-E-IMGNAME,
image file $1$DGA25:[SYS0.SYSCOMMON.][SYSLIB]DPML$SHR.EXE
-SYSTEM-F-INSFP1POOL, insufficient process dynamic memory
%DCL-W-ACTIMAGE, error activating image DPML$SHR-CLI-E-IMGNAME,
image file $1$DGA25:[SYS0.SYSCOMMON.][SYSLIB]DPML$SHR.EXE
-SYSTEM-F-INSFP1POOL, insufficient process dynamic memory
```

To determine the amount of process dynamic memory in use, execute the **SHOW PROCESS/MEMORY** command. If "Free Space" is depleted, increase the value of the CTLPAGES SYSGEN parameter by the following minimum amounts (pagelets):

Architecture	Pagelets
Alpha	230
IA-64	440
x86-64	500

The value of CTLPAGES is used in AUTOGEN calculations, so to change the value, VSI recommends adding the appropriate line to SYSS\$SYSTEM:MODPARAMS.DAT (for example, ADD_CTLPAGES=230), running AUTOGEN, and rebooting the system.

14. Systems Running TCPware TCP/IP

For systems running the TCPware TCP/IP stack, Samba is not able to auto-detect the active TCPware IP interface addresses. Therefore, the list of interfaces available for use by Samba must be manually configured. To do so, use SMB\$CONFIG to configure Samba as a standalone server first, then edit SAMBA\$ROOT:[LIB]SMB.CONF and add the appropriate parameters (explained below) to the [global] section. If desired, run SAMBA\$CONFIG to reconfigure Samba as a member server.

To make all active interface addresses available to Samba, list those addresses and their subnet masks separating them with a comma or a space as values for the "interfaces" global parameter. Be sure to always include the localhost address (127.0.0.1) in the list of allowed interfaces.

For example, you may add an entry similar to the following to SMB.CONF (setting address details as appropriate to your environment and making sure to include localhost):

```
interfaces = 10.100.10.1/24, 127.0.0.1
```

To make only a subset of active interface addresses available to Samba, include just the addresses and the subnet masks of the allowed interfaces in the interfaces list and also specify "bind interfaces only = yes".

For example, if the host has three interfaces: 10.10.1.1/24, 192.168.0.10/16, and 44.4.1.1/10 and Samba is to use only the 10.10.1.1/24 and 192.168.0.10/16 interfaces, then you would specify the following in SMB.CONF:

```
interfaces = 10.10.1.1/24, 192.168.0.10, 127.0.0.1
bind interfaces only = yes
```

15. Specific Issues Fixed Since the V4.10-16C Release

- An issue with the `-f` option of the `smbget` command has been fixed.
- An issue with directories with the same names as files with the `.DIR` extension not being copied has been fixed.
- A PDBEDIT crash issue when VSI OpenVMS account does not have a user identifier has been fixed.
- An issue with Tdbtool incorrect message reporting has been fixed.
- An issue with Tdbbackup using the `-s` option with `"\*"` has been fixed.
- An issue with ignored value for the `vms ofc time interval` parameter has been fixed.
- An issue with using angle brackets in the `/DESTINATION` qualifier value which caused installation to fail has been fixed.
- An issue that caused SMBCLIENT to fail to connect with the `NT_STATUS_NO_MEMORY` has been fixed.
- An issue with using `"%d"` in the log file parameter has been fixed.
- SMBVER no longer displays information for old CIFS for OpenVMS images.
- An issue with the Samba server listing files with `"."` and `"^ . . ; ?"` and consequently non-working Linux Samba client has been fixed.
- An issue with failure to list domain controllers of the trusted domains has been fixed.
- An issue with omitting file names containing reserved Windows characters has been fixed.
- An issue with setting log levels for debug classes has been fixed.
- A memory leak in the `vms_acl.c` module has been fixed.
- An issue with adding `vms root rights = yes` which caused SMBD processes to crash has been fixed.
- An issue with querying alias TCP/IP interfaces has been fixed.
- An issue with Samba sending multiple TCP/IP packets potentially leading to firewall triggers for CVE-2009-3676 has been fixed.