

HP OpenVMS CIFS Version 1.2 Migration Guide



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About This Document

This document describes how to migrate from the HP Advanced Server for OpenVMS (also referred to as "Advanced Server") to the HP OpenVMS Common Internet File System (CIFS).

Intended Audience

This document is intended for OpenVMS system administrators and network administrators. For more information about the HP CIFS Server, see the HP CIFS Server documentation:

<http://h71000.www7.hp.com/doc/CIFS.html>

Document Organization

The document is organized as follows:

- Chapter 1 **Introduction** Provides an overview of the migration process.
- Chapter 2 **Migration Process** Describes the migration process for file share on the same node and for two different nodes. This chapter also describes the SAM database and hostmapping migration along with file security migration.

Typographic Conventions

Table 1 lists the typographic conventions used in the document.

Table 1 Typographic Conventions

Convention	Description
...	A horizontal ellipsis in a figure or examples indicates the following possibilities: <ul style="list-style-type: none">• Additional optional arguments in a statement have been omitted.• The preceding item or items can be repeated one or more times.• Additional parameters, values, or other information can be entered.
.	A vertical ellipsis indicates the omission of items from a code example or command format; the items are omitted because they are not important to the topic being described.
()	In command format descriptions, parentheses indicate that you must enclose choices in parentheses if you specify more than one. In installation or upgrade examples, parentheses indicate the possible answers to a prompt, such as: <code>Is this correct? (Y/N) [Y]</code> .
[]	In command format descriptions, brackets indicate optional choices. You can choose one or more items or no items. Do not type the brackets on the command line. However, you must include the brackets in the syntax for OpenVMS directory specifications and for a substring specification in an assignment statement.
{}	In command format descriptions, braces indicate required choices; you must choose at least one of the items listed. Do not type the braces on the command line.
Example	This typeface indicates code examples, command examples, and interactive screen displays. In text, this type also identifies website addresses, OpenVMS command and pathnames, PC-based commands and folders, and certain elements of the C programming language.
<i>italic type</i>	Italic type indicates important information, complete titles of manuals or variables. Variables include information that varies in system output (for example, Internal error number), in command lines (<code>/PRODUCER=name</code>), and in command parameters in text (where <code>dd</code> represents the predefined code for the device type).
UPPERCASE TYPE	Uppercase indicates the name of a command, routine, file, file protection code, or the abbreviation of a system privilege.

Table 1 Typographic Conventions *(continued)*

Convention	Description
-	A hyphen at the end of a command format description, command line, or code line indicates that the command or statement continues on the following line.
WARNING	A warning calls attention to important information that if not understood or followed will result in personal injury or nonrecoverable system problems.
CAUTION	A caution calls attention to important information that if not understood or followed will result in data loss, data corruption, or damage to hardware or software.
IMPORTANT	This alert provides essential information to explain a concept or to complete a task.
NOTE	A note contains additional information to emphasize or supplement important points of the main text.

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HP encourages your comments and suggestions on this document. Please send comments to: openvmsdoc@hp.com

1 Introduction

This chapter provides an overview of the migration process.

It addresses the following topics:

- “Prerequisites”
- “Installing the Migration Kit”

The migration process facilitates the migration of data from the Advanced Server to the HP CIFS Server on the same node or across two different nodes. Data can be migrated if the Advanced Server is configured as a member server or as a Primary Domain Controller (PDC).

The following can be migrated from the Advanced Server member server to the HP CIFS Server member server:

- File shares
- Files and folders, and their security
- Hostmappings
- Security Accounts Manager (SAM) database accounts

The following can be migrated from the Advanced Server PDC to the HP CIFS PDC:

- File shares
- Files and folders, and their security
- Hostmappings

The utility provided for the PDC migration cannot generate SAM database–related reports such as USERS and GROUPS. To migrate the SAM database, follow the procedure described in section “SAM Database Migration” (page 12).

The following data cannot be migrated from the Advanced Server to the HP CIFS Server:

- Alertnames
- Share and file audit policies
- Registry parameters
- WINS address
- Number of clients configured on the Advanced Server

If you are migrating data from a member server, the following cannot be migrated from Advanced Server to HP CIFS Server:

- Workstation restriction details
- Logon flags, such as the login script is executed, the account cannot be deleted, the account is locked out, the password cannot be changed and the password is expired.
- Account passwords

1.1 Prerequisites

Before migrating the Advanced Server to the HP CIFS Server, you must ensure the following:

- HP CIFS Server Version 1.1 with ECO1 or later patch must be installed. For information on installing the migration kit, see “Installing the Migration Kit” (page 8).
- HP Advanced Server Version 7.3B for OpenVMS is installed on the Advanced Server system.



NOTE: Use the latest patch on HP Advanced Server Version 7.3B for OpenVMS. If you do not have the latest patch, contact the HP customer service center.

- Backup Advanced Server data is present in the PWRK\$ROOT directory along with all the Advanced Server shares and the related data.

- In case of member servers, migration can be done only if the Advanced Server and the HP CIFS Server have been configured as the member server and both are in the same domain.
- Migration across different Advanced Server and HP CIFS Server configurations is not supported.
- The `ASV_MIGRATION.BCK` file must be copied to a node where the Advanced Server is installed.
- Migration of data from the Advanced Server to the HP CIFS Server must occur in the order described in the Chapter 2 (page 9).
- In case of the member server, the `SAMBA$ROOT:[LIB]SMB.CONF` file must contain the following parameters in the `[global]` section:
 - `idmap UID` and `idmap GID` parameters with valid entries. For information about `idmap UID` and `idmap GID` parameters, see the *HP OpenVMS CIFS Administrator's Guide*.
 - `username map` parameter. For information about username mapping, see the *HP OpenVMS CIFS Administrator's Guide*.
- For `SAMBA$ROOT:[LIB]SMB.CONF` for PDC migration, see “SAM Database Migration” (page 12).
- The procedure for migration of the PDC and the member server remains the same except for the SAM database migration.

Wherever the procedure is different for PDC or member server, the same has been noted explicitly in Chapter 2 (page 9). Also, the procedure for the migration of ASV Backup Domain Controller (BDC) to HP CIFS BDC is same as the PDC migration, wherein the HP CIFS Server must be configured as BDC in the same domain as the ASV BDC.

1.2 Installing the Migration Kit

This section describes the procedure to install the migration kit.

To install the migration kit, follow these steps:

1. Install the HP CIFS Server Version 1.1 with ECO1. The latest patch can be downloaded from the following web address:
<ftp://pathwork:support@hprc.external.hp.com/cifs-v11-eco1/>
2. Download the HP CIFS Server Version 1.1 migration zip file from the following web address:
http://h71000.www7.hp.com/network/CIFS_for_Samba.html
3. Unzip the downloaded migration file to your local directory. The following files are extracted:
 - `ASV_MIGRATION.BCK`
 - `CIFS_MIGRATION.PDF`
 - `CIFS_MIGRATION.PS`
 - `CIFS_MIGRATION.TXT`
4. Copy the `ASV_MIGRATION.BCK` file to a node where the Advanced Server is installed. For information about the `ASV_MIGRATION.BCK` file, see “Generating Reports for Advanced Server Data” (page 9).

2 Migration Process

This chapter describes how to migrate file share on the same node and for two different nodes. It also describes how to migrate the SAM database and hostmapping along with the Access Control List (ACL) file.

This chapter addresses the following topics:

- “Migration Procedure on the Advanced Server”
- “Migration Procedure on the HP CIFS Server”



NOTE: The procedure for migrating data from the Advanced Server to the HP CIFS Server on the same system or from the Advanced Server to the HP CIFS Server that runs on two different systems is the same except for a few differences that are discussed in the sections below.

2.1 Migration Procedure on the Advanced Server

This section describes the migration procedure to be followed on the Advanced Server node. It includes the following sections:

- “Generating Reports for Advanced Server Data”
- “Cleaning Up the Files”
- “Transferring Reports to the HP CIFS Node”

2.1.1 Generating Reports for Advanced Server Data

This section describes how to generate reports on the Advanced Server data.

To generate reports on the Advanced Server node, follow these steps:

1. Verify that the Advanced Server is running.
2. Restore the contents of the `ASV_MIGRATION.BCK` file to any working directory.

For example, to restore the contents of the `ASV_MIGRATION.BCK` file to the `DISK$DATA1:[ASV_MIGRATION]` directory, enter the following command:

```
$ BACKUP ASV_MIGRATION.BCK/SAVE DISK$DATA1:[ASV_MIGRATION]
```

This creates the following files:

```
PWRK$MIGRATION.EXE
```

```
GET_DRIVER_INFO.EXE
```

```
GET_QUEUE_INFO.EXE
```

```
PWRK$CIFS_MIGRATION.COM
```

```
EXPORTPWD.EXE
```

3. To migrate to or from a member server, you must have administrator privileges on the Advanced Server member server.

Login using an account that is a member of the local Administrators group on the Advanced Server. This can be any of the following:

- Domain Account
- An Account in a Trusted domain
- Local member server account

To migrate to or from the PDC, you must have administrator privileges on the Advanced Server.

Login using an account that is a member of the Administrators group on the Advanced Server.



NOTE: If you are logging in as a member server, ensure that the security policy "Network access: Allow anonymous SID name translation" is enabled on the domain controller. This policy must be enabled to manage permissions on the member server using domain accounts.

4. Execute the following command:

```
$ @PWRK$CIFS_MIGRATION.COM
```



NOTE: During the migration procedure, the system verifies whether the ASV is configured as a PDC or member server. Based on this configuration, the system displays the appropriate menu for the migration. For more information, see "ASV Configured as Member Server" and "ASV Configured as PDC".

ASV Configured as Member Server

If the ASV is configured as member server, the following message is displayed:

```
Advanced Server for OpenVMS to HP OpenVMS CIFS migration utility
```

```
Welcome to Advanced Server to CIFS migration utility
```

```
The migration procedures require administrator privileges
on the Advanced Server member server. Therefore, you must
logon using an account that is a member of the local
Administrators group on the Advanced Server. This can be any of the below:
```

- Domain account
- An Account in a Trusted domain
- Local Member Server account

```
Logon Menu:
```

- 1 - Domain Logon
- 2 - Trusted Domain Logon
- 3 - Local Member Server logon
- [E] - Exit

```
Enter your option:
```

```
Choose the options to login correspondingly.
```

```
Once you login successfully you will get the below menu where you can generate the reports.
```

```
This migration utility generates reports required as input for migrating Advanced Server
data to CIFS.
```

```
Advanced Server to CIFS Migration utility comprises the options:
```

- 1 - Display reports to be generated
- 2 - Generate Individual reports
- 3 - Generate all reports
- 4 - Display reports
- 5 - Edit File and Print share report
- 6 - Backup reports
- [E] - Exit

```
Enter your option:
```

Option 1 - You can select this option to view reports that can be generated on the Advanced Server node.

Option 2 - You can select this option to generate individual reports. For example, you can generate a report only for the File Security migration.

Option 3 - You can select this option to generate all reports at a time for the following:

- User and group migration report, in case of a member server
- Hostmapping report

- File share related reports
- File security report

Option 4 - You can select this option to view any of the already generated reports.

Option 5 - You can select this option to edit the file share report. You may have to change the device or logical name in the share path so that it is valid on the HP CIFS Server, or you may have to remove shares from the report so that they are not migrated.

Option 6 - You can select this option to back up the generated Advanced Server reports. You must back up reports only after you have generated all the reports about the Advanced Server.

ASV Configured as PDC

If the ASV is configured as a PDC, the following message is displayed:

```
Advanced Server for OpenVMS to HP OpenVMS CIFS migration utility
```

```
    Welcome to Advanced Server to CIFS migration utility
```

```
    PWRK_DOMAIN_NAME = "ZINXEDDOM"
```

Logon Menu:

```
        1 - Domain Logon
    [E] - Exit
```

Enter your option:

Choose the option to login.

Once you login successfully you will get the below menu where you can generate the reports. This migration utility generates reports required as input for migrating Advanced Server data to CIFS.

Main Menu

Advanced Server to CIFS Migration utility comprises the options:

```
    1 - Display reports to be generated
    2 - Generate Individual reports
    3 - Generate all reports
    4 - Display reports
    5 - Edit File and Print share report
    6 - Backup reports
    [E] - Exit
```

Enter your option:

Option 1 - You can select this option to view reports that can be generated on the Advanced Server node.

Option 2 - You can select this option to generate individual reports. For example, you can generate a report only for the File Security migration.

Option 3 - You can select this option to generate all reports at a time for the following:

- Hostmapping report
- File share related reports
- File security report

Option 4 - You can select this option to view any of the already generated reports.

Option 5 - You can select this option to edit the file share report. You may have to change the device or logical name in the share path so that it is valid on the HP CIFS Server, or you may have to remove shares from the report so that they are not migrated.

Option 6 - You can select this option to back up the generated Advanced Server reports. You must back up reports only after you have generated all the reports about the Advanced Server.



NOTE: The migration procedure does not interfere with the normal working of the Advanced Server. You do not need to copy any Advanced Server images to the system directory. It has a separate interface with the Advanced Server so that you can continue to use the Advanced Server while generating the report.

If you select File and Print share related reports as part of option 2 or if you select option 3, the following prompt appears:

```
Are you migrating Advanced Server data to HP CIFS Server on this node  
itself [N]?:
```

If you want to migrate data on the same node, answer "YES" otherwise say "NO".

2.1.2 Cleaning Up the Files

Once all the reports are generated, you can either keep the restored files or clean up the files from your working directory.

2.1.3 Transferring Reports to the HP CIFS Node

This section describes the procedure to transfer all the Advanced Server generated reports to the HP CIFS node.

To transfer all the generated reports from the Advanced Server to the HP CIFS node, follow these steps:

1. Verify if the `AS2CIFS_MIGRATION_REPORTS.BCK` file is located in the `DISK$DATA1:[ASV_MIGRATION]` directory. If not, enter the following command to back up the reports:

```
$ @PWRK$CIFS_MIGRATION.COM
```

2. Copy `AS2CIFS_MIGRATION_REPORTS.BCK` to the HP CIFS node.



NOTE: This step is not required for same node migration.

3. On the HP CIFS node, restore the files present in the backup saveset `AS2CIFS_MIGRATION_REPORTS.BCK` to the `SAMBA$ROOT:[BIN]` directory.

2.2 Migration Procedure on the HP CIFS Server

This section describes the migration procedure to be followed on the CIFS node. It includes the following sections:

- "SAM Database Migration"
- "Hostmapping Migration"
- "File Migration"
- "File Share Migration"
- "File Security Migration"

2.2.1 SAM Database Migration

This section describes how to migrate the SAM database from the Advanced Server to the HP CIFS Server. The SAM database migration process is different, depending on whether the Advanced Server is configured as a PDC or member server. Hence, the PDC and member server migration process is explained in two different sections.

User and Group Account Migration on Member Server

This section describes the procedure to migrate user and group accounts from the Advanced Server member server to the HP CIFS Server member server.



NOTE: HP does not support the migration of data from the Advanced Server member server to the HP CIFS Server member server, where HP CIFS Server member server exists in a different domain.

To add user and group account information on a node running the HP CIFS Server configured as a member server in a domain, follow these steps:

1. Log in to the OpenVMS system with a privileged account.
2. Verify that HP CIFS Server is a member server, and enter the following commands:

```
$ @SAMBA$ROOT: [BIN] SAMBA$DEFINE_COMMANDS.COM
$ TESTPARM
...
Server role: ROLE_DOMAIN_MEMBER
```

If you have configured HP CIFS Server as a member server, then the server role is displayed as above.

3. To verify if HP CIFS Server is a member of the same domain as that of the Advanced Server, enter the following command:

```
$ NET RPC TESTJOIN
```

The result must indicate "Join to 'domainname' is OK", where 'domainname' matches the domain name of the Advanced Server.

4. Create a privileged local administrator account on HP CIFS Server by following this procedure:

- a. Create an OpenVMS account 'CIFSADMIN' and grant full privileges.

For example, to add an OpenVMS account 'CIFSADMIN', enter the following command:

```
$ MC AUTHORIZE
UAF> ADD CIFSADMIN/UIC=[400,1]/PRIV=ALL/DEFPRIV=ALL
/ADD_IDENTIFIER -
_UAF> /OWNER=CIFSDOM/DEVICE=SAMBA$ROOT/DIRECTORY=[USERS] -
_UAF> /NOBATCH/NOLOCAL/NODIALUP/NOREMOTE/FLAGS=NODISUSER
```



NOTE: You can provide a User Identification Code (UIC) of your choice.

- b. To create an HP CIFS Server account, enter the following commands:

```
$ @SAMBA$ROOT: [BIN] SAMBA$DEFINE_COMMANDS.COM
$ pdbedit -a CIFSADMIN
new password: Any1willd0
retype new password: Any1willd0
```

- c. Edit the SAMBA\$ROOT: [LIB] SMB.CONF file and add the following line under the [global] section:

```
[global]
admin users = CIFSADMIN
```

5. Create an account with the same user name, that is, CIFSADMIN, and the same password in the domain. You can create the account on the PDC emulator using the Active directory users and computers applet or from the Advanced Server member server by entering the following commands:

```
$ ADMIN LOGON ADMINISTRATOR
```

```
$ ADMIN ADD USER CIFSADMIN/PASSWORD="Any1willd0"  
_ $ /MEMBER="DOMAIN ADMINS"
```

6. If you are migrating on the same node, shut down the Advanced Server by entering the following command:

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

7. To restart HP CIFS Server, enter the following commands:

```
$ SMBSTOP  
$ SMBSTART
```

8. To migrate users, enter the following command:

```
$ @SAMBA$ROOT:[BIN]PWRK$USER_MIGRATION.COM
```



NOTE: If there are any errors while executing this command procedure, the error messages are logged in the PWRK\$USER_MIGRATION.LOG file. You must review this log file and take corrective actions.

NOTE: To migrate passwords, use the IMPORTPWD utility. You cannot use the PWRK\$USER_MIGRATION to migrate the passwords from ASV.

For more information on migrating passwords, see "Password Migration" [p. 16]

9. To migrate groups, enter the following command:

```
$ @SAMBA$ROOT:[BIN]PWRK$GROUP_MIGRATION.COM
```

Specify CIFSADMIN as the user name and password when it prompts for the user name and password.



NOTE: If there are any errors while executing this command procedure, the error messages are displayed on the screen. You must review these and take corrective actions.



NOTE: To prevent multiple execution of these scripts, the PWRK\$USER_MIGRATION.COM and PWRK\$GROUP_MIGRATION.COM scripts are not executed if there is a corresponding log file that already exists.

SAM Database Migration on PDC

This section describes the procedure to migrate the SAM database information from the Advanced Server PDC to the HP CIFS PDC.

To migrate the SAM database information to the HP CIFS PDC, follow these steps:



NOTE: Before proceeding with the migration, it is recommended that you start a fresh setup without entries in the specified `username.map`, `passwd.tdb`, or `secrets.tdb` file. Also, ensure that there are no users of the type `cifs$xxxx` in the `SYSUAF` database or at least ensure that the specified `idmap uid` range does not clash with the existing users of the type `cifs$xxxx` in the `SYSUAF` database. Ensure that the migration process is not interrupted while it is running.

1. Configure HP CIFS as BDC in the domain where the Advanced Server is acting as the PDC. Edit the `SAMBA$ROOT:[BIN]SMB.CONF` file and in the `[global]` section, add:

```
workgroup = <AsVdomainname>
domain logons = yes
domain master = no
client schannel = no
username map = samba$root:[lib]username.map
idmap uid = <uid range>
idmap gid = <gid range>
add user to group script = @samba$root:[bin]samba$addusertogroup.com
%g %u
set primary group script = @samba$root:[bin]samba$addusertogroup.com
%g %u
```

2. Edit the `samba$root:[lib]lmhosts` file and add the following entries:

```
<ip address of ASV PDC> <asvdomainname>#1b
<ip address of ASV PDC> <asv pdc name>#20
```

3. Join the domain as a BDC:

```
$ @SAMBA$ROOT:[BIN]SAMBA$DEFINE_COMMANDS.COM
$ NET RPC JOIN "-S" <ASV-NODE-NAME> "-U<adminusername>%password"
```



NOTE: Sometimes, the `SCSNODE` name of an OpenVMS system can be different from the `listenname` of Advanced Server. Here `ASV-NODE-NAME` means `listenname` of the Advanced Server. To find out the `listenname`, execute:

```
$ @SYS$STARTUP:PWRK$DEFINE_COMMANDS.COM
$ REGUTL SHOW PARAMETER * LISTENNAME
```

4. Start the HP CIFS Server:

```
$ SMBSTART
```

5. Replicate the SAM accounts from the Advanced Server PDC:

```
$ NET RPC VAMPIRE "-S" <AS-NODE-NAME> "-U<adminusername>%password"
```



NOTE: If there are special users who have more than 12 characters, or there are users with non-alphanumeric characters that SYSUAF cannot handle, the migration automatically creates users of type `cifs$xxxx` in the SYSUAF database. It then updates the specified `username.map` file with special users and then updates the `passwd.tdb` database with the mapped users.

For example, if the users `Administrator`, `user 123`, or `Veryverylonguser` are encountered, the `username.map` file is updated as shown:

```
cifs$03E8=ADMINISTRATOR
cifs$03E9="USER 123"
cifs$03EA=VERYVERYLONGUSER
```

The `passwd.tdb` database is updated as shown:

```
cifs$03EA:65668074:
cifs$03E9:65602537:
cifs$03E8:65537000:
```

6. Verify the accounts that exist on the HP CIFS BDC:

```
$ PDBEDIT "-L"
$ NET GROUPMAP LIST
```



NOTE: During the migration process, the following error message may be displayed:

```
"Unable to modify passwd TDB! Error: Record does not exist occurred while
storing the main record (USER_guest) during net rpc vampire."
```

You can ignore this error message.

Password Migration

The `NET RPC VAMPIRE` command does not migrate the passwords of users and machines properly. To update the passwords at the HP CIFS side, follow these steps:

1. Stop the server on the ASV:

```
$ @SYS$STARTUP:PWRK$DEFINE_COMMANDS.COM
$ PWSTOP
```

2. Dump the passwords by executing the `EXPORTPWD.EXE` utility:

```
$ RUN EXPORTPWD.EXE
```

The password hash information is stored in the current directory in the file `password_dump.txt`.



NOTE: This dumps all the password hashes to a file called `password_dump.txt` on the local directory.

If the ASV is running when this utility is executed, the following message appears:

```
"EXPORTPWD: The Advanced Server or another utility is currently
running."
```

Stop the ASV before `EXPORTPWD` is executed.

3. After the `password_dump.txt` is generated, start the ASV:

```
$ @SYS$STARTUP:PWRK$DEFINE_COMMANDS.COM
$ PWSTART
```


4. Copy the file `password_dump.txt` to a local directory on the HP CIFS Server.
5. Execute the `IMPORTPWD` utility by calling the location of the `password_dump.txt` as shown:

```
$ IMPORTPWD password_dump.txt
```

The passwords are updated on reading the `password_dump.txt` file. The system password is also updated. If the users are mapped, it updates the passwords of the mapped users. If there is no password set, it indicates the same. If for some reason, any problems are encountered, it fails with a message indicating that password updation has failed.

A few examples are cited below:

```
Update of user "test1" successfull
Update of user "test2" successfull
Update of user "wrkstn1$" successfull
Update of user "wrkstn2$" successfull
Update of user "macnm$" successfull
No Lanman password for user: user with space
No NT password for user: user with space
Update of user "user with space" successfull
No Lanman password for user: veryverylonguser
No NT password for user: veryverylonguser
Update of user "veryverylonguser" successfull
No Lanman password for user: usr 123
No NT password for user: usr 123
Update of user "usr 123" successfull
Update of user "my usr" successfull
Update of user "Administrator" successfull
Username not found : Guest
Update of user "ASUTEAM" successfull
Update of user "ASVTEAM" successfull
```

Configuring HP CIFS as PDC After Migration

To configure HP CIFS as the PDC, follow these steps:

1. Shutdown the Advanced Server:


```
$ @SYS$STARTUP:PWRK$SHUTDOWN.COM
```
2. Configure HP CIFS Server as the PDC. Edit the `SAMBA$ROOT:[LIB]SMB.CONF` file and in the `[global]` section set, modify:


```
domain master = yes
```
3. Remove the following two entries from the `SAMBA$ROOT:[LIB]LMHOSTS` file:


```
<ip address of ASV PDC> <asvdomainname>#1b
<ip address of ASV PDC> <asv pdc name>#20
```
4. Start the HP CIFS Server:


```
$ SMBSTART
```

2.2.2 Hostmapping Migration

This section describes how to migrate the hostmap accounts from the Advanced Server to the HP CIFS Server. The hostmap migration must be executed only after completing the SAM database migration. The OpenVMS accounts created on the node running HP CIFS Server do not have the `EXTAUTH` flag set in the `SYSUAF` database. Moreover, these accounts are not set for interactive login. Only `NETMBX` and `TMPMBX` privileges are granted by default. The system administrator must modify the OpenVMS accounts if any changes are required.

To migrate hostmapping information on a node running HP CIFS Server, follow these steps:

1. Edit `SAMBA$ROOT:[LIB]SMB.CONF`, and add the following under `[global]` section:

```
[global]
username map = /samba$root/lib/username.map
```



NOTE: If the `username.map` file is not present in the specified location, you can create the `username.map` file by entering the following command:

```
$ create samba$root:[lib]username.map
$ set file/attrib=(rfm:stm,mrs:0,lrl:0) samba$root:[lib]username.map
```

2. To add hostmappings, enter the following command:

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



NOTE: This procedure assumes that HP CIFS Server accounts and domain accounts already exist. It does not verify the validity of the accounts. It updates the `SAMBA$ROOT:[LIB]USERNAME.MAP` file by mapping OpenVMS accounts to the local HP CIFS Server accounts or domain accounts or both.

2.2.3 File Migration

This section describes how to transfer files and directories in a share directory tree from the Advanced Server to the HP CIFS Server node. The system administrator transfers files and directories from the Advanced Server to the HP CIFS Server node. When you copy files across nodes or across different disks, ensure that the directory structure remains the same as that of the Advanced Server node. If the device names and logical names pointing to the share path differ on the HP CIFS Server node, update the share report and file security report with the appropriate device name and logical name information. To copy files across devices or nodes, system administrators can use a mechanism that is convenient to them, such as the `BACKUP` utility to back up and restore files. This step can be ignored if it is a same node migration or if the new HP CIFS Server has access to the data in exactly the same way as the Advanced Server.

2.2.4 File Share Migration

This section describes how to migrate file shares from the Advanced Server to the HP CIFS Server. Before migrating the file share related information, ensure that you have completed the “SAM Database Migration”, “Hostmapping Migration”, and “File Migration” as described above. To migrate file share related information on a node running HP CIFS Server, follow these steps:

1. The file share migration procedure generates the following reports:

ASV_SHARE_INFO.COM

ASV_SHARE_INFO.COM – This command procedure contains commands for migrating the file shares. For each file share generated, the command contains the following entry:

```
$ <image-name>
```

```
"<share-name>|<Description>|<share-path>|<connections-info>|<RMSTypes>
```

where:

<image-name> can be either "add_prnshare" or "add_dskshare".

<share-name> is the name of the share.

<share-path> is the VMS format path name where the share is hosted.

<RMS Types> can be UDF(none), Sequential Fixed, Stream or StreamLF.

For example, the below entry is generated for the NETLOGON share.

```
$ ADD_DSKSHARE "NETLOGON|LOGON SCRIPTS
```

```
Directory|PWRK$LMROOT:[LANMAN.REPL.IMPORT.SCRIPTS]|0|2"
```

You must manually edit this command procedure and make the required changes appropriately. If you do not want a specific file share to be migrated, you must comment out the entry with an "!" as shown in the example below:

```
$! ADD_DSKSHARE "NETLOGON|LOGON SCRIPTS
```

```
Directory|PWRK$LMROOT:[LANMAN.REPL.IMPORT.SCRIPTS]|0|2"
```

2. If you are migrating data on the same node, shut down the Advanced Server.
3. Perform the file share migration. The script requires the IP address of the HP CIFS Server, and the user name and password of an administrator account.

```
$ @SAMBA$ROOT:[BIN] CIFS$SHARE_MIGRATION.COM
```

If the HP CIFS Server is configured as a member server, use the 'CIFSADMIN' account.

2.2.5 File Security Migration

This section describes how to migrate file security from the Advanced Server to the HP CIFS Server.

The file security migration procedure generates command procedure in the following format:

```
PWRK$FILEEACLMIG_<share-name>_<xxxx>.COM
```

where:

<share-name> is the name of the share on which this procedure will migrate file and directory security.

xxxx is a number sequence starting at 00000 and incremented for every 50,000 ACL entries within a share.

A new procedure is created for each share or when a procedure has processed 50,000 ACL entries.

For example, if we have the below shares with the following number of ACL entries, the scripts are generated as shown below:

Share name	No. of ACLs entries on files in the share	Files generated
Share1	5K	PWRK\$FILEACLMIG_SHARE1_0000.COM
Share2	65k	PWRK\$FILEACLMIG_SHARE2_0000.COM PWRK\$FILEACLMIG_SHARE2_0001.COM
Share3	125k	PWRK\$FILEACLMIG_SHARE3_0000.COM PWRK\$FILEACLMIG_SHARE3_0001.COM PWRK\$FILEACLMIG_SHARE3_0002.COM

If you do not want to migrate a particular share, you need to ignore the corresponding files that are generated.

In the above example, if you do not want to migrate share2 security, then you must not execute the following scripts:

```
PWRK$FILEACLMIG_SHARE2_0000.COM
PWRK$FILEACLMIG_SHARE2_0001.COM
```

The file security migration script contains the commands for setting the directory, subdirectory, and file security, such as ACL and OWNER field.

For each directory, subdirectory, and files it sets the OWNER field. Before setting the OWNER field, it obtains the corresponding USER on the HP CIFS Server using the `wbinfo` switch "`--domainname-to-hostname`". This switch returns the appropriate host USER if it already exists. If it does not exist, it checks whether a mapping exists for that user. If both conditions fail, it creates the VMS host USER and returns it. The OWNER field is set using the following command:

```
$ SET SECURITY/OWNER
```

While setting the OWNER field, the procedure checks whether the owner name is "SYSTEM". If so, it sets the OWNER as `SYSTEM [1, 4]`.

For example, if there is an entry "SYSTEM" set on the FILE1.TXT, which is in the directory USER1:[CIFSHR1], the OWNER field is set using the following command:

```
$ SET SECURITY/OWNER=[1, 4] USER1:[CIFSHR1] FILE1.TXT
```

For setting each ACL entry, it obtains the corresponding user or group on the HP CIFS Server using the `wbinfo` switch "`--domainname-to-hostname`". This `wbinfo` switch returns the appropriate host user or group if it already exists. If it does not exist, it checks whether a mapping exists for that user. If both conditions fail, it creates the VMS host user or group and returns it. After successfully obtaining the corresponding host user, it maps the NT ACLs to the VMS ACLs. If a directory entry is encountered, it obtains and sets the "`options=default`" ACL for inheritance of the ACLs that are created under this directory.

In case of the member server, the `wbinfo` utility and the scripts handle the domain users, domain groups, local users, and local groups appropriately. In case of local users, the permission or the OWNER field is set based on the mapped user. In case of PDC, `wbinfo` utility handles the domain users and groups appropriately.

If an entry for "Power Users", "SYSTEM", or "CREATOR OWNER" is encountered, these entries are ignored, because the "Power Users" group exists for providing backward compatibility. The "SYSTEM" ACL entry is an internal Windows NT system account and has no equivalent account on the HP CIFS Server. There is no equivalent security entry for the "CREATOR OWNER" group either.

While setting the ACL entry, the procedure checks whether the group name is set to "Everyone". Because there cannot be a hostname associated for this group, this group entry is mapped to the corresponding RMS world category.

For example, if there is an entry "Everyone = Read" set on the FILE1.TXT, which is in the directory USER1: [CIFSHR1], the protection is set using the following command:

```
$ SET SECURITY/PROTECTION=(W:R) USER1: [CIFSHR1] FILE1.TXT
```

If the share is hosted on an ODS-5 disk, the process parse style is set to "extend" to process the special characters while executing the DCL commands. This will again reset back to "traditional".

Because obtaining the hostname from the wbinfo is a time consuming operation, the script caches the obtained entry from the wbinfo using a logical in a name table specifically created for this migration. If the corresponding hostuser cannot be obtained from the cache, it uses the wbinfo to obtain the same.

This command procedure generates the log file PWRK\$FILEACLMIG_<share-name>_<xxxx>.LOG corresponding to each of the scripts that is executed. The log entry gets created with the details, if for any reason the procedure is unable to set the ACL. You need to take appropriate actions if there are any errors while setting the ACL.

Prerequisites

The following prerequisites for file security migration must be met before executing the PWRK\$FILEACLMIG_<share-name>_<xxxx>.COM command procedure.

- All Advanced Server Users and Groups are migrated to the node where HP CIFS Server is running.
- All Advanced Server file shares are migrated to the node where HP CIFS Server is running.
- All Advanced Server files are migrated to the node where HP CIFS Server is running.

To add file ACL information on a node running HP CIFS Server, follow these steps:

1. If you are migrating data on the same node, shut down the Advanced Server.
2. To migrate file security, enter the following command:

```
$ @SAMBA$ROOT: [BIN] PWRK$FILEACLMIG_<share-name>_<xxxx>.COM
```

For example,

```
$ @SAMBA$ROOT: [BIN] PWRK$FILEACLMIG_SHARE1_0006.COM
```



NOTE: `SAMBA$ROOT: [BIN] PWRK$FILEACLMIG_<share-name>_<xxxx>.COM` is command procedure, which contains commands for setting up the ACLs in VMS native format. The script can be executed either interactively or can be submitted to the batch queue. Because there is no interdependence on ACL entries, these scripts can be executed independently and simultaneously.



IMPORTANT: You must manually edit this command procedure and make changes appropriately, if you are not migrating a particular directory or file.

If you do not want to set the security for a particular share, follow the procedure described in “File Security Migration” (page 19).

You must also ensure that the path is valid on the destination node. The path is set based on the Advanced Server share path and requires manual updation if the same does not hold good on the destination node.

If the share is moved from one storage device to another storage device, you must ensure that you edit the `PWRK$FILEACLMIG_<SHARENAME>_NNNN.COM` command procedure and change all the device references. You can also temporarily define a logical device name that matches the name in the `PWRK$FILEACLMIG_<SHARENAME>_NNNN.LOG` file and associate it to the device name where the share is actually stored.

For example, on the Advanced Server, the `PW32` share is on device `DISK$KITS2` and is moved to `DISK$SAMBA` on Integrity servers, thereby preserving the same directory structure. You can either edit the `PWRK$FILEACLMIG_PW32_0000.COM` command procedure manually and change all `DISK$KITS2` references to `DISK$SAMBA` or you can define the following logical before executing the `PWRK$FILEACLMIG_PW32_0000.COM` command procedure:

```
$ DEFINE DISK$KITS2 DISK$SAMBA:
```

If there are multiple `PWRK$FILEACLMIG_<SHARENAME>_NNNN.COM` command procedures to be edited, define the logical as shown in the above example and execute.

After executing all the `PWRK$FILEACLMIG_PW32_NNNN.COM` command procedures, you can deassign the logicals.

Note that the logical was defined process wide. If you want to execute the `PWRK$FILEACLMIG_<SHARENAME>_NNNN.COM` command procedure in a batch, you must define the logical system wide.

3. After the file security migration is complete, you must execute the `CIFS$MIGRATION_CLEANUP.COM` command procedure to clean up the files.

2.3 Limitations

This section describes the limitations of migration.

- During the PDC migration, local group members are not migrated.
- Migration of `personal` and `hidden` shares are not supported. The `[HOMES]` share on the HP CIFS Server provides features equivalent to the `personal` share on the Advanced Server.
- The host mapping report created by `PWRK$CIFS_MIGRATION.COM` can contain entries that are no longer valid or the SID could not be resolved (that is, an old trust that no longer exists or a user account no longer exists). Hence, the hostmapping report `AS_HOSTMAP_INFO.OUT` that is generated must be reviewed and modified, if necessary.
- In Windows, an ACE granting `NONE` access takes precedence over ACEs in the ACL, but not on the OpenVMS. In Windows, all permissions (except those indicating `NONE`) are cumulative. For example, if a user is listed more than once, they get a superset of those permissions. On OpenVMS, the processing stops with the first ACE that is applied to the user and that is the access the user gets.

- HP CIFS Server does not support share security migration. This will be addressed in a future release of HP CIFS Server.
- HP CIFS Server does not support migration of Print Queues, Print Forms, Print Drivers, and Queue Logicals. This will be addressed in a future release of HP CIFS Server.
- During the member server migration process, while migrating groups, a corresponding resource identifier is added to the rights identifier database. Because VMS has a restriction for creating the identifier name, an algorithm is used to convert the group name to this VMS acceptable resource identifier. If more than one name is converted to the same name, VMS cannot create the resource identifier and an error is displayed. This usually happens with long group names (that is, 26 characters or more) with the same name upto 26 characters.
- If the machine names are longer than 12 characters or have special characters in them, then problems can occur as SYSUAF cannot handle both.

A Mapping ACL from NT ACL to VMS ACL

File ACLs have only one set of entries, whereas if it is a directory file, each NT ACE will have two sets of permissions. The first maps to the permissions on the directory itself and the second set of permissions would be mapped to an "options=default" ACE.

The following table lists the mapping:

Table A-1

NT ACL	VMS ACL
"Full Control (All)"	"READ+WRITE+EXECUTE+DELETE+CONTROL"
"Full Control (All) (All)"	"READ+WRITE+EXECUTE+DELETE+CONTROL" "READ+WRITE+EXECUTE+DELETE+CONTROL"
"Change (RWXD)"	"READ+WRITE+EXECUTE+DELETE"
"Change (RWXD) (RWXD)"	"READ+WRITE+EXECUTE+DELETE" "READ+WRITE+EXECUTE+DELETE"
"Read (RX) (RX)"	"READ+EXECUTE" "READ+EXECUTE"
"Read (RX)"	"READ+EXECUTE"
"List (RX) (Not Specified)"	"READ+EXECUTE"
"Add (WX) (Not Specified)"	"WRITE+EXECUTE"
"Add & Read (RX) (RX)"	"READ+EXECUTE" "READ+EXECUTE"
"Special Access (All)* (Not Specified)"	"READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (All) (X)"	"READ+WRITE+EXECUTE+DELETE+CONTROL" "EXECUTE"
"Special Access (All) (D)"	"READ+WRITE+EXECUTE+DELETE+CONTROL" "DELETE"
"Special Access (All) (W)"	"READ+WRITE+EXECUTE+DELETE+CONTROL" "WRITE"
"Special Access (All) (R)"	"READ+WRITE+EXECUTE+DELETE+CONTROL" "READ"
"Special Access (All) (RX)"	"READ+WRITE+EXECUTE+DELETE+CONTROL" "READ+EXECUTE"
"Special Access (All) (RWX)"	"READ+WRITE+EXECUTE+DELETE+CONTROL" "READ+WRITE+EXECUTE"
"Special Access (All) (None)"	"READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (W) (Not Specified)"	"WRITE"
"Special Access (W)"	"WRITE")
"Special Access (W) (R)"	"WRITE" "READ"

Table A-1 (continued)

NT ACL	VMS ACL
"Special Access (W) (W)"	"WRITE" "WRITE"
"Special Access (W) (P)"	"WRITE" "CONTROL"
"Special Access (W) (D)"	"WRITE" "DELETE"
"Special Access (W) (O)"	"WRITE" "CONTROL"
"Special Access (W) (All)"	"WRITE" "READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (W) (RX)"	"WRITE" "READ+EXECUTE"
"Special Access (W) (None)"	"WRITE" "NONE"
"Special Access (D) (R)"	"DELETE" "READ"
"Special Access (D) (W)"	"DELETE" "WRITE"
"Special Access (D) (P)"	"DELETE" "CONTROL"
"Special Access (D) (D)"	"DELETE" "DELETE"
"Special Access (D) (O)"	"DELETE" "CONTROL" =
"Special Access (D) (All)"	"DELETE" "READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (D) (RX)"	"DELETE" "READ+EXECUTE"
"Special Access (D) (None)"	"DELETE" "NONE"
"Special Access (R) (R)"	"READ" "READ"
"Special Access (R) (W)"	"READ" WRITE"
"Special Access (R) (P)"	"READ" "CONTROL" =

Table A-1 (continued)

NT ACL	VMS ACL
"Special Access (R) (D)")"	"READ" "DELETE"
"Special Access (R) (O)")"	"READ" "CONTROL" =
"Special Access (R) (All)"	"READ" "READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (R) (RX)")"	"READ" "READ+EXECUTE"
"Special Access (R) (None)"	"READ" "NONE"
"Special Access (P) (R)"	"CONTROL" = "READ"
"Special Access (P) (W)"	"CONTROL" = "WRITE"
"Special Access (P) (P)"	"CONTROL" = "WRITE"
"Special Access (P) (D)"	"CONTROL" = "DELETE"
"Special Access (P) (O)"	"CONTROL" "CONTROL"
"Special Access (P) (All)"	"CONTROL" "READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (P) (RX)"	"CONTROL" "READ+EXECUTE"
"Special Access (P) (None)"	"CONTROL" "NONE"
"Special Access (O) (R)"	"CONTROL" "READ"
"Special Access (O) (W)"	"CONTROL" "WRITE"
"Special Access (O) (P)"	"CONTROL" "CONTROL"
"Special Access (O) (D)"	"CONTROL" "DELETE"
"Special Access (O) (O)")"	"CONTROL" "CONTROL"

Table A-1 (continued)

NT ACL	VMS ACL
"Special Access (O) (All)"	"CONTROL" "READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (O) (RX)"	"CONTROL" "READ+EXECUTE"
"Special Access (O) (None)"	"CONTROL" "NONE"
"Special Access (X) (Not Specified)"	"EXECUTE"
"Special Access (X)"	"EXECUTE"
"Special Access (D) (Not Specified)"	"DELETE"
"Special Access (D)"	"DELETE"
"Special Access (P) (Not Specified)"	"CONTROL"
"Special Access (P)"	"CONTROL"
"Special Access (R) (Not Specified)"	"READ"
"Special Access (R)"	"READ"
"Special Access (All)* (Not Specified)"	"READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (All)*"	"READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (All)* (Not Specified)"	"READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (All)*"	"READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (RX) (All)"	"READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (RX) (P)"	"READ+EXECUTE" "CONTROL"
"Special Access (RX) (W)"	"READ+WRITE" "WRITE"
"Special Access (RX) (R)"	"READ+EXECUTE" "READ"
"Special Access (RX) (D)"	"READ+EXECUTE" "DELETE"
"Special Access (RX) (RX)"	"READ+EXECUTE" "READ+EXECUTE"
"Special Access (RX) (None)"	"READ+EXECUTE" "NONE"
"Special Access (RX) (RWX)"	"READ+WRITE" "READ+WRITE+EXECUTE"
"Special Access (RX) (O)"	"READ+EXECUTE" "CONTROL"

Table A-1 (continued)

NT ACL	VMS ACL
"Special Access (RWX) (R)"	"READ+WRITE+EXECUTE" "READ"
"Special Access (RWX) (P)"	"READ+WRITE+EXECUTE" "CONTROL"
"Special Access (RWX) (D)"	"READ+WRITE+EXECUTE" "DELETE"
"Special Access (RWX) (W)"	"READ+WRITE+EXECUTE" "WRITE"
"Special Access (RWX) (All)"	"READ+WRITE+EXECUTE" "READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (RWX) (RX)"	"READ+WRITE+EXECUTE" "READ+EXECUTE"
"Special Access (RWX) (RWX)"	"READ+WRITE+EXECUTE" "READ+WRITE+EXECUTE"
"Special Access (RWX) (None)"	"READ+WRITE+EXECUTE" "NONE"
"Special Access (RWX) (O)"	"READ+WRITE+EXECUTE" "CONTROL"
"Special Access (None) (R)"	"NONE" "READ"
"Special Access (None) (W)"	"NONE" "WRITE"
"Special Access (None) (P)"	"NONE" "CONTROL"
"Special Access (None) (D)"	"NONE" "DELETE"
"Special Access (None) (O)"	"NONE" "CONTROL"
"Special Access (None) (All)"	"NONE" "READ+WRITE+EXECUTE+DELETE+CONTROL"
"Special Access (None) (RX)"	"NONE" "READ+EXECUTE"
DEFAULT:	"READ"

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