



CONVERSION GUIDE  
OHSM & SAM-QFS TO VSM

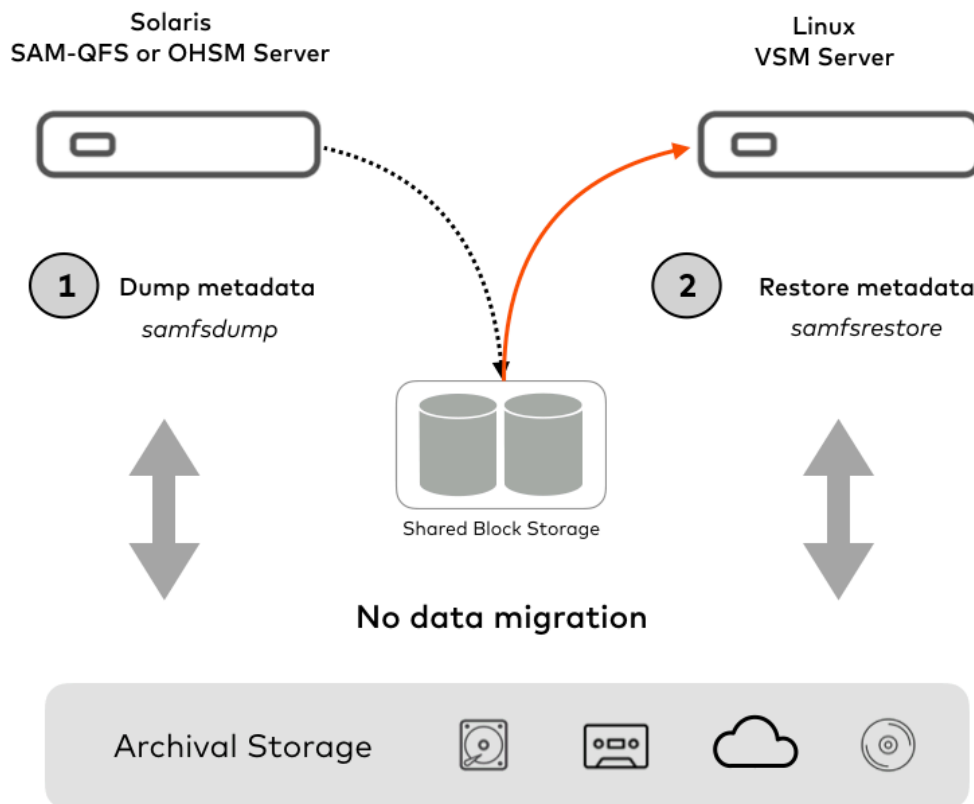
## Introduction

The Oracle HSM (OHSM) and SAM-QFS archive products share a compatible file system format with Versity Storage Manager (VSM). The common format enables OHSM and SAM-QFS customers to quickly and easily convert to VSM without migrating archived data.

OHSM and SAM-QFS are able to snapshot all of the file system metadata to a dump file using the `samfsdump` utility. This utility allows the storage administrator to protect file system metadata so that in the event of data loss or even loss of an entire file system namespace, the metadata may be recovered. The `samfsrestore` utility is used to restore files from a dump file back into the file system namespace.

This metadata dump/restore functionality is unique to archiving file systems where the data resides on media that is physically separate and external to the local file system devices. Once the metadata is restored, the file appears in the namespace with the data marked as in the offline state, meaning it is archived. The normal stage (read) process can bring the file back online and make the file contents available to the application.

The VSM `samfsrestore` utility is able to read both the VSM dump file formats as well as the OHSM and SAM-QFS dump file formats.



## Metadata Format Compatibility

OHSM and SAM-QFS file system format versions 1 to 6 are supported. Versions 7 and 8 are also supported with certain limitations. Version 7 includes support for Solaris extended attributes, however if the site does not utilize extended attributes, the dump format reverts to version 6. If the site does utilize extended attributes, the files will be restored to VSM without the extended attributes. Version 8 includes support for the LTFS format. If the site does not utilize LTFS, the dump file will be restored normally. If the site does utilize LTFS for some copies, but the standard OHSM format for other copies, then the standard OHSM formatted copies will be restored and the LTFS copies will not be restored. If all of the media is in LTFS format, no restore is currently supported.

To determine the OHSM or SAM-QFS dump file version, it is necessary to examine the raw bytes in the dump file using the following procedure.

```
$ hexdump -Cn 12 <dumpfile>
```

This will output something like the following:

```
00000000 78 73 64 63 06 00 00 00 b7 ac f1 51 |xscd.....Q|
```

The 00000000 is the starting byte address, the next 4 bytes are the csd header identifier, the next 4 bytes (in this case 06 00 00 00) are the dump file version. This example shows 0x06 = version 6.

This will show up as `63 64 73 78 00 00 00 06` on a big-endian platform.

## VSM Configuration

### Setup Archive Daemons

Setup configuration files archiver.cmd, diskvols.conf, defaults.conf and stager.cmd following VSM Admin Guide. It is recommended to idle the archiver daemon while restoring many files. This gives the admin an opportunity to examine and correct any issues before the archiver accesses the files (if configured to do so).

### Setup File System

Setup configuration files mcf and fstab following VSM Admin Guide.

Mount the file system. You may need to mount the filesystem at the same mount point as was mounted on the OHSM server if the dump file has absolute file paths. You can list the contents of the dump file with the following command to see if the file paths are absolute (beginning with "/") or relative (beginning with "."). Replace "./dumpfile" with the path to the OHSM dump file.

```
# samfsrestore -t -f ./dumpfile
```

Typically, samfsdump will dump relative paths by default. So for this case, you can mount the file system at any desired mount point. Then change directory to the top level file system directory and run the samfsrestore commands from there.

## Restoring Files

The samfsrestore utility will automatically detect dump file format and version, so no extra options are necessary for restoring files from OHSM dump file.

It is recommended to restore with statistics output when restoring full namespace. This will list how many files and directories successfully restored.

```
# samfsrestore -T -f ./dumpfile
```

The samfsrestore utility will output any errors and warnings it encounters as it runs. This may include files that are damaged, do not have any archive files, etc.

## Staging Files

VSM supports both disk and tape archive targets written by OHSM with the exclusion of LTFS volumes (contact Versity if you need LTFS support). Once files are restored, data can be staged from the media that was previously written by OHSM. No migration to VSM formats is necessary.

## Unsupported Features

VSM will not attempt to restore Solaris ACLs. A warning will be displayed that the file will be restored without the ACL.

Currently, VSM will not restore any extended attributes from an OHSM dump. These were added in later versions of the dump file, and will be supported once support for those later versions are finalized. This includes POSIX ACLs since those are contained within extended attributes.

LTFS media and import targets are not supported by VSM samfsrestore.

## Supported Features

WORM retained files.

## Advanced Concepts

Versity has been asked if it is possible to test VSM while also running OHSM. It is **NOT** recommended to have both VSM and OHSM accessing the tape devices at the same time. However, it is possible for both to access the disk archive targets at the same time. VSM supports read only mounts (typically from NFS shares) for disk archive targets. This allows the OHSM system to continue running while testing samfsrestore to the VSM file system. Data can be staged from the read only NFS mount to verify file data access. Once testing is done, a final samfsdump from OHSM and samfsrestore to VSM can be completed. Once the OHSM server is unmounted, archiving and tape archive targets can be enabled on the VSM file system.

## Conclusion

Versity Storage Manager offers a stable long term path forward for OHSM and SAM-QFS customers with a quick and easy conversion process. The archive media formats are fully compatible with VSM and therefore do not require any data migration. Minimal downtime is needed to convert to the VSM archive solution.