

Release Note (January 2021)

Optical Disc Archive File Manager2 Version 3.1

[About File Manager2]

File Manager2 is an application software to perform file-management with the Optical Disc Archive Drive Unit, ODS-L10 or ODS-L30M.

[Main Features of File Manager2]

File Manager2 consists of File Manager mode, File Server mode and Virtual Tape mode. File Manager mode takes over the functions of the old product File Manager (call this as "File Manager1" in this document). File Server mode makes it possible to access Optical Disc Cartridges by Windows standard filesystem interface (corresponding NTFS). Virtual Tape mode makes it possible to access Optical Disc Archive Drive Unit as virtual tape devices.

- File Manager mode
 - You can control ODS-L10 or ODS-L30M and manage to archive and retrieve files.
 - It supports the configuration; ODS-D55U, ODS-D77U, ODS-D280U and/or ODS-D380U are directly connected to the control PC.
 - You can search Optical Disc Cartridges in shelves, as well as cartridges in ODS-L10 or ODS-L30M.
- File Server mode
 - You can control ODS-L10 or ODS-L30M and manage to archive and retrieve files through Windows standard filesystem (corresponding NTFS).
 - It supports the configuration; ODS-D55U, ODS-D77U, ODS-D280U and/or ODS-D380U are directly connected to the control PC.
- Virtual Tape mode
 - You can control ODS-L30M equipped with ODS-D77F/ODS-D280F/ODS-D380F as virtual tape devices and backup/restore files by backup software.
 - You can control ODS-D55U/ODS-D77U/ODS-D280U/ODS-D380U as a virtual tape device.

[New Features in v3.1]

- File Manager mode
 - Improved archiving performance over the network when MD5 is enabled.
 - Improved retrieve performance.
 - Improved volume replication performance.
- File Server Mode
 - "Barcode" can be used for the cartridge folder name on the virtual volume.
 - The search range has been expanded so that files can be searched for all cartridges from the cartridge screen.

[New Features in v3.0]

- File Manager mode
 - Support ODS-D380U and ODS-D380F.
 - Support ODC5500R.
 - Support Microsoft Windows Server 2019 Standard.
 - Enhance the performance of archiving and retrieving.
 - Enhance the performance of archiving through watched folder.

- File Server Mode
 - Support ODS-D380U and ODS-D380F.
 - Support ODC5500R.
 - Support Microsoft Windows Server 2019 Standard.
 - A supported application below is added.
 - Windows Explorer
 - You can choose the archiving method from two options.
 - File unit sync: Files are synchronized to the cartridge in units of file.
 - Cartridge unit sync: Files are synchronized to the cartridge in units of cartridge.
 - Enhance the performance of creating new files to the same directory.
 - Simplify the recovery process.
 - Enhance the performance of archiving.
- Virtual Tape Mode
 - Support ODS-D380U and ODS-D380F.
 - Support ODC5500R.
 - Support Microsoft Windows Server 2019 Standard.
 - Veritas Backup Exec 20.1 is added as a supported application.
 - IBM Spectrum Protect 8.1.8 is added as a supported application.

[New Features in v2.2]

- File Server Mode
 - Cartridges became able to be inserted into the ODS-L30M while system status is "working".
 - You became able to eject cartridges from ODS-L30M via "Cartridge Screen" while system status is "working".
- Virtual Tape Mode
 - Commvault V11 SP16 is added as a supported application.

[New Features in v2.1]

- A supported application below is added.
 - Teknowmics SmartDocs v6.6
- "SmartDocs" became selectable from [File Server Setting] > [Detail Setting] > [Setting Template] in Library Software Configuration Tool.

[New Features in v2.0]

- Virtual Tape Mode
 - You can control Optical Disc Archive Drive Unit, ODS-L30M via the virtual tape interface.

[Notes on upgrades]

- Even when you uninstall the previous version before installing V3.1, database is migrated to V3.1 because File Manager uninstaller does not delete user data.
 - After you upgrade to V3.1, please do Library Software Configuration Tool again.
 - However, when you uninstall the previous version completely, and delete the database, then V3.1 installer cannot migrate the database from the previous version to V3.1.
 - Please do not shut down the computer during the installation.
- Migration of database from the previous version to V3.1 is possible: Make a backup copy of data on the previous version, and restore the data on V3.1.

- If the system configuration is changed, please perform Library Software Configuration Tool again.
- Database used on V3.1 cannot be used on the previous version.
 - Backup data made on V3.1 cannot be restored on the previous version.

[DB Migration from File Manager1]

You can operate File Manager2 which takes over database of File Manager1. To migrate database, please setup File Manager2 according to the following procedure.

1. Uninstall software in the following order.
(Please uninstall software by Windows.)
 - ODAFileManager
 - Apache Tomcat 7.0 Tomcat7
 - Java7
 - Java8(64-bit)
2. Install File Manager2
3. Complete Settings by Library Software Configuration Tool.
4. Confirm that your cartridge information of File Manager1 is taken over.
 - If you configure File Manager mode, please confirm that cartridge information of File Manager1 is displayed in the library pane of "archive" page.
 - If you configure File Server mode, please confirm that cartridge information of File Manager1 is displayed in the cartridge list of "cartridge" page.

[Supported Web browser]

<Windows>

- Google Chrome, Microsoft Internet Explorer 11 or Microsoft Edge

<Mac>

- Google Chrome or Apple Safari 11, 12, 13

[Supported Control PC OS]

File Manager Mode

<Connecting to ODS-L10 or ODS-D55U/ODS-D77U/ODS-D280U/ODS-D380U>

- Microsoft Windows 10 64bit Pro, Enterprise

< Connecting to ODS-L30M>

- Microsoft Windows Server 2012 Standard
- Microsoft Windows Server 2012 R2 Standard
- Microsoft Windows Server 2016 Standard
- Microsoft Windows Server 2019 Standard

File Server mode

- Microsoft Windows Server 2012 Standard
- Microsoft Windows Server 2012 R2 Standard
- Microsoft Windows Server 2016 Standard
- Microsoft Windows Server 2019 Standard

Virtual Tape mode

- Microsoft Windows Server 2012 R2 Standard

- Microsoft Windows Server 2016 Standard
- Microsoft Windows Server 2019 Standard

[Supported Devices]

- Optical Disc Archive Software Version 5.2.0
 - Any earlier version than version 5.2.0 does not support File Manager2 v3.1. Please upgrade your current one to version 5.2.0.
 - While File Manager2 is running, Optical Disc Archive Filer included with Optical Disc Archive Software cannot be launched. Terminate File Manager2 service first, and then start Optical Disc Archive Filer.
- Please use the following combination of the versions.

File Manager2	3.1
Optical Disc Archive Software	5.2.0
ODS-D55U/F	1.30
ODS-D77U/F	2.10
ODS-D280U/F	2.50
ODS-D380U/F	1.10
ODS-L10	1.05
ODS-L30M/ODS-L60E/ODS-L100E	3.11

For further information on each version, please contact Sony service representatives.

[Required Software]

The installer of File Manager2 installs the following software automatically.

- Apache Tomcat 7.0 Tomcat 7
- MariaDB 10.2
- Zulu JRE 8.50
- Dokan 1.3.0.1000

[Installation]

<Download>

- Please download the installer from the Sony professional product site.
- The installer is provided in the form of "ODAFileManager2_3_1_0.zip".

<Procedures>

- Please execute Windows Update and make sure Windows is up to date before you install File Manager2. Otherwise, there is a possibility that installation of File Manager2 cannot success completely.
- To start the installer of File Manager2, please double-click the installer and proceed with the installation according to the instructions.
- After installation, please execute Library Software Configuration Tool and configure the File Manager.
- When you have already installed the previous version of File Manager2, please uninstall Optical Disc Archive File Manager2 by using "Program & Features" in Control Panel. File Manager installer does not support upgrade installation.

<Activation>

- A serial key "ODSZ-FM2" is required to activate File Manager2. You can use File Manager mode by this serial key.
- If you would like to use File Server mode, please activate File Server mode by a serial key "ODSZ-FSL1".
- If you would like to use Virtual Tape mode, please activate Virtual Tape mode by a serial key "ODSZ-VTL1".
- A set of serial number can be used to activate File Manager2 on a single computer.
- The serial key used for activating the previous version of File Manager can be used in File Manager2 v3.0

<Note>

- If beta version is installed, please install official version of File Manager2 after uninstall beta version completely. Please refer [Uninstallation section] for completely uninstallation.

[Uninstallation]

- To uninstall File Manager2, there are two ways shown below.
 1. Uninstalling File Manager2 by Windows
 2. Uninstalling File Manager2 completely (Application uninstallation and related data deletion)
- When uninstalling File Manager2 by Windows, the metadata and the database created by File Manager2 are not deleted.
- When uninstalling File Manager2 completely, the metadata and the database created by File Manager2 are deleted.
- Before uninstall File Manager2, please backup database from "database" pane in the settings page.
- If you would like to uninstall File Manager2 normally, please follow the step below.
 - Uninstall software in the following order.
(Please uninstall software by Windows.)
 - Optical Disc Archive File Manager2
 - Apache Tomcat 7.0 Tomcat7
 - Zulu JRE
 - Dokan Library
- If you would like to uninstall File Manager2 completely, please follow the steps below.
 1. Uninstall software in the following order.
(Please uninstall software by Windows.)
 - Optical Disc Archive File Manager2
 - Apache Tomcat 7.0 Tomcat7
 - Zulu JRE
 - MariaDB
 - Dokan Library
 2. Delete following folders.
 - C:\ProgramData\MariaDB 10.2
 - C:\Program Files\Apache Software Foundation\Tomcat7.0

Note: C:\ProgramData is a hidden folder by default. Please enable the option to show hidden folders.
 3. If you used File Server mode, please delete the cache folder you configured.

[Note on Use File Manager2]

- About switching mode

- In case switching File Manager mode and File Server mode, please run Library Software Configuration Tool and select mode in the "Select Mode" page.
Note: If incomplete jobs are registered in the job lists, please do not execute Library Software Configuration Tool. There is a possibility that jobs are failed and canceled.
- About management of key store file regarding HTTPS
 - Please backup keystore file which is made according with "Generating a keystore file" in the Installation Guide to any other location of "C:/Program Files/Zulu/zulu-8-jre/bin". A keystore file may be deleted in the process of Java uninstallation that is one of the procedure of uninstallation of File Manager2.
- About the maximum number of connected drives of ODS-L30M
The operation of each mode has been verified with the following number of drives.
 - File Manager mode: 6 drives
 - File Server mode / Virtual Tape Mode: 4 drives
- About drive connection automatic recognition in Direct-Mode
 - In Direct-Mode, the drive is automatically recognized.
 - File Manager2 enables the drive when it detects a drive connection, and disables it when it detects a disconnection. Therefore, even if the drive is disabled by screen operation, it will be immediately enabled again if the drive is connected.

[How to get logs]

- Please get logs by designating data from in the maintenance pane of settings page.
- If you cannot access to the maintenance pane, please get following logs manually.
 - Get all files in the folders described below. Note that C:\ProgramData is a hidden folder by default. Please enable the option to show hidden folders.
 - C:\ProgramData\Sony\ODSFileManager\logs
 - C:\Program Files (x86)\Sony\Optical Disc Archive Software\log
 - C:\Program Files\Apache Software Foundation\Tomcat 7.0\logs
 - Get designated files described below.
 - C:\ProgramData\MariaDB 10.2\data
 - my.ini
 - *.pid
 - *.err
 - C:\Users\{LOGIN_USER}\AppData\Local\Temp
 - Dokan_Library_*.log
 - fm_msi.log
 - FileManagerInstallerLog.txt
 - FileManagerUnInstallerLog.txt
 - mariaDB-install-log.txt

File Manager Mode

[Note on Use]

1. About this application

- If a web-service-based application other than File Manager2 has been installed, File Manager2 may not work properly.
- While File Manager2 is running, Optical Disc Archive Filer included with Optical Disc Archive Software cannot be launched. Terminate File Manager service first, and then start Optical Disc Archive Filer.
- File Manager2 will not work properly if using Bulk Import in ODS-L30M. Please set Bulk Import to OFF.
- When you set Fast Load to ON in ODS-L30M setting, a cartridge can be moved before the previous cartridge imported into a drive has finished loading, reducing the net time required to move a cartridge to a drive.
- When less space than 3GB is left on a drive or device used with this application, this application may stop the system for the sake of safe operations. In that case, please increase the free space and operate again.
- In a network environment where the Mac Address changes dynamically, activation may be required repeatedly. Do not use this application in an environment where MacAddress changes dynamically.
- If you are using Windows 10 on the control PC, File Manager2 can be accessed from up to 20 devices simultaneously

2. Installation

- Please do not shut down the computer during the installation.
- Reactivation may be required after hardware configuration changes. In that case, please activate again with the same serial number you have already registered.
- The existing database and metadata can be used even for after a new installation, unless you do not delete the database by uninstalling the application completely.
- When you use a multi-card reader, you may fail to install File Manager2. Please install File Manager2 after disabling the Multi-Card Reader by Windows Device Manager.

3. Network settings

- This application could be accessed by any unintended third party on the network, depending on a usage environment. Please connect to a secure network.
- When you access to the control PC from client PCs, please pay attention to the TCP port 8080 inbounds. Some Internet security software, such as anti-virus software, may block 8080 inbound. If this is the case, please make settings so that they access 8080 inbounds.
- If you use a proxy server in a Local Area Network (LAN), please bypass the proxy server for local addresses.
- In the Local Area Network (LAN) settings of the web browser, please select the "Bypass proxy server for local addresses" check box.
- This application may not work properly depending on the status of network connections.

4. Web browser

- This application does not operate properly when Compatibility View is turned on in Internet Explorer 11.
- This application may take long time to display some pages on Internet Explorer depending on the performance of the computer. In that case, please use Google Chrome.
- In Google Chrome, some extensions block requests. When you use such kind of extensions, File Manager2 application does not work properly.

- This application may not work properly depending on the browsing history. If this is the case, please delete the browsing history and restart this application.
- It is recommended to use the latest version of web browser.

5. Network drives

- This application may not work properly depending on the state of the network drive.
- When you add a network drive to base path, please do not select a network drive mapped by Windows Explorer. Please add a network drive in UNC format (e.g. \\server_name\folder).
- When you add a network drive to base path, please do not select a computer name only (e.g. "\\server_name") or an IP address only (e.g. "\\xxx.xxx.xx.xx"). In such a case, please enter the shared folder name with server name or IP address, (e.g. "\\server_name\shared_folder" or "\\xxx.xxx.xxx.xxx\shared_folder").
- When you add a root folder of network drive to base path, you cannot archive whole content of the folder (e.g. "\\server_name\folder", "\\xxx.xxx.xx.xx\folder").
- Immediately after you delete a path of a network drive, you may not be able to add a folder having the same IP address. Please add the folder again after a brief interval.
- The network drive may not be used properly if the user name and the password are not set depending on the security setting of the network drive.

6. About Exporting a catalog data

- In Google Chrome, some characters of file name for export files may be converted to other characters.

7. About Watched Folder Archive

- Watched Folder Archive may not work properly when you copy files to the watched folder in other operating environments than Windows OS.
- Please do not select a folder on a write-protected drive, XDCAM or XDCAM Server.
- Files in the watched folder will be deleted after archiving.
- Folders in the watched folder will not be deleted automatically. They need to be deleted manually.
- Read-only files created under watched folder cannot be archived.

8. About Formatting and Finalizing Cartridge

- Formatting and Finalizing a cartridge may fail when another process is using the cartridge. Please end the process which is using the cartridge and then format or finalize again.

9. About Backup and Restore

- Please do not exit this application while restoring data. When you exit this application while restoring data, please restart the computer.
- Please do not shut down the computer while restoring data. When the computer shuts down while restoring data, please uninstall completely and re-install this application, and then restore the data again.

10. Administrator password

- If you forget your password, the password can be reissued to the e-mail address registered in the mail notification settings.

- If mail notification setting is not enabled, please reinstall File Manager2 after performing a complete uninstallation.
(Please note that the metadata and the database are deleted by uninstalling the application completely.)

11. Java update

- Please do not update the Java.

12. About preventing long-term loading of cartridges

- The cartridges may be accessed, depending on the software installed on the computer, even if you do not intentionally read or write. This may lead to early replacement of the optical head or may adversely affect the media. Therefore, when using ODS-L10 or ODS-L30M, cartridges that have not been used for a certain period of time are automatically moved from the drive to the slot to prevent long-term loading of cartridges.

13. About control PC redundancy

- The control PC can be made redundant by deploying a spare PC that has the same configuration as the control PC. You can keep a backup of your database on a network drive on a regular basis and restore your database from the network drive if the spare PC needs the database.
- For network drive settings, refer to the help "Adding a Network Drive".

14. Improvement of transfer speed of 10G network

- In a 10 Gbps Ethernet environment, enabling jumbo frames on the network adapter is expected to improve the performance of archiving and retrieving via the network.
- The method to enable jumbo frame is as follows.
 1. Open Device Manager.
 2. Open the properties of the network adapter.
 3. Select "Jumbo Packet" from the properties of the advanced settings, and select "9014 Bytes" as the value.

15. Others

- Please restart the computer whenever you change your computer's time or time zone.
- File Manager2 may not work properly when several users simultaneously log on the computer on which File Manager2 is installed.
- This application may not work properly when the computer goes to a sleep mode.
- The folders including inaccessible folders or files may not be archived properly.
- When a filepath is too long, the file may not appear on UI.
- When too many files or folders are requested for archive or retrieve all at once, this application may not register the jobs properly or display a list of the jobs properly depending on the performance of the computer or the status of the network.
- When too many files or folders are added to the Placeholder, this application may fail to add the files or folders properly depending on the performance of the computer or the status of the network.
- When you add a local disc drive to base path, you cannot archive whole content of the root folder.

- When you retrieve data to XDCAM, the retrieve may be failed because the file format may be changed automatically. In that case, please uncheck "Enable strict file compare when retrieving", and then retrieve the data to XDCAM.
- When you changed hardware configuration(especially when USB connections of ODS-D55U or ODS-D77U in ODS-L10 are changed), please perform Library Software Configuration Tool again.
- If you get logs simultaneously by File Manger2 and Optical Disc Archive Utility, it may not work properly, so please refrain from getting logs simultaneously.
- Even if you cancel volume duplication, copying may be completed.
- If the write-protect tab of a cartridge is set and try to archive a file to the cartridge, the job is failed.
- The number of jobs that can be registered for one archive request is 10,000 jobs. However, there is no limit when you use watched folders.
- You cannot expand a folder which has 1,000 or more child folders in tree view of the archive screen. However, you can refer inside of the folder via list area.
- Only the contents of folders that have less than 480,000 files and folders all together can be shown in the list area of the archive screen.

File Server Mode

[Supported Application]

File Server mode allows you to access Optical Disc Cartridge by Windows standard filesystem interface (corresponding NTFS). However, we support only following applications. We do not support Mac Finder.

If you export a virtual volume as a shared folder by SMB, please change SMB timeout value according to the "Note on Use" described below. If you connect with shared folder from Mac OS, File Server mode may not work properly.

As described "Note on Use", please exclude a virtual volume from monitoring target of anti-virus software, or File Server mode may not work properly.

- **Windows Explorer**
 - You can archive files by copying files from a local storage to the virtual volume. You can retrieve files by copying files from the virtual volume to a local storage.
- **Non-linear editing software**
 - You can export your contents to the virtual volume by setting export folder to the virtual volume. So, you can archive your contents by using File Server mode. Please refer to a help page of each software for exporting contents.
 - We support only Windows OS.
 - It is not supported to create a project of Non-linear editing software in the virtual volume directly. We only support exporting contents.
 - Here are supported software.
 - DaVinci Resolve 15.0.0073, Blackmagic Design Pty Ltd.
 - EDIUS Pro 9.20.3340, Grass Valley K.K.
 - Media Composer 18.5.0.48725, Avid Technology Inc.

- Adobe Premiere Pro CC 12.1.2, Adobe Systems Co., Ltd.
- VEGAS Pro 15.0.387, MAGIX Software GmbH.
- **Content management software**
Here are supported software.
 - Teknowmics SmartDocs v6.6
 - You can archive or retrieve files through the SmartDocs.
 - Except ODS-L10 mode
 - If the cartridge goes offline just before or during file download, incomplete files may be downloaded.

[How to Use File Server Mode]

1. About virtual volume

- When you start File Server mode, a virtual volume is mounted with drive letter (hereafter Z: drive) that you designated in the settings.
- The total capacity of Z: drive is the sum of the capacity of online cartridges.
- The structure of root folder of Z: drive is lists of online cartridges and one folder corresponds to one cartridge. Offline cartridges, that is to say cartridges in a shelf, are not shown in the root folder.
- An example of a folder structure is shown below. Online cartridges with cartridge media serial number name are listed in the root folder of the Z: drive.

Z:

```
|--- 001 ABCDEFGH      (media serial number : 001 ABCDEFGH)
|--- 001 GHIJKLMN     (media serial number : 001 GHIJKLMN)
|--- 001 OPQRSTU     (media serial number : 001 OPQRSTU)
|--- ...
```

- A folder structure under a cartridge folder is same as the real folder structure of the cartridge.
- You can archive files through the virtual volume and retrieve files from virtual volume.

2. About relation between virtual volume and cache folder

- A cache folder is set by using Library Software Configuration Tool or File Manager Web GUI. When you set a cache folder please refer to the [Note on Use] described in the following section.
- A file written in the virtual volume is stored in the cache folder temporarily. The file is archived in the cartridge asynchronously according to the setting value "flush interval" which is set in the Library Software Configuration Tool or File Manager Web GUI. For example, in case of 30 seconds for flush interval, an archiving process starts in about 30 seconds after you finish to write a file. If you update the file within about 30 seconds, the archiving process is canceled and a new archiving process starts in about 30 seconds after you finish to update the file. If an archive job is processing, the job is canceled and the update request is accepted. As same as above, the archiving process is started in about 30 seconds.
- When you read a file in the virtual volume, you can read it immediately if the file is already stored in the cache folder. If the file is not stored in the cache folder, you can read it after

the file is retrieved from the cartridge. In this case, your read access is blocked until the retrieve is completed.

3. About Access Control List (ACL)

- You can update ACL of cartridge folder and directories / files under the cartridge folder.
- If there are many folders or files in a folder, it will take much time to update ACL. We recommend to update ACL in the early stage (when new folder is created).
- Please set ACLs by using Windows Explorer.

4. About File Sharing (SMB)

- You can access to a virtual volume remotely by setting SMB file sharing.
- If you use SMB access, there is a possibility that SMB timeout is occurred. Please set the SMB timeout value according to the following section [Note on Use].
- If you use SMB access, the restrictions on the file paths conform to the SMB protocol.
 - Folders with file paths starting with "." or ".." cannot be sent.

[Note on Use]

1. File Server mode

- File Server mode includes limitations of File Manager mode. Please refer to the [Note on Use] in the File Manager mode section for the details.
- When you start maintenance, you need to wait until all files sync with cartridges.
- When you start File Server mode, there is a possibility that jobs are generated to sync with cartridges. You need to wait the synchronization to access the virtual volume.

2. About limitations of operations of File Server mode

- You cannot operate to cartridges (formatting, finalizing, insert / eject and so on) during File Server mode operation. Please do them during maintenance mode.
- If you operate to cartridges from any other applications during File Server mode, File Server mode may not work properly.
- During maintenance mode, if you access to a cartridge from application except for File Manager, a job of DB synchronization may be generated. In this case, please wait the job before you finish maintenance mode.
- Please set full access rights (ACL) for "Administrator" and "SYSTEM" to a cache folder of File Server mode. If not so, File Server mode may not work properly.
- Please do not change access rights (ACL) of "Administrator" and "SYSTEM" in the virtual volume. If you change it, File Server mode may not work properly.
- Please do not access the cache folder you set except for recovery maintenance. If you access the cache folder, File Server mode may not work properly.
- If the write-protect tab of a cartridge is set and try to write a file to the cartridge, the job is failed and File Server mode become error status. In this case, please recover files according with the section [How to recover archive failed files] described above.
- Catalog metadata created in File Manager mode cannot be inherited to File Server mode.

3. About limitations of filesystem of File Server mode

- Mac Finder are not supported.
- NFS export is not supported. Please use SMB export.

- The maximum length of file name is 127 letters.
- The maximum number of folder hierarchy is 64.
- File Server mode reserve following file attributes.
 - FILE_ATTRIBUTE_ARCHIVE
 - FILE_ATTRIBUTE_OFFLINE
- The maximum size of Access Control List (ACL) is 64KB.
- The maximum size of Alternate Data Stream (ADS) is 64KB.
- Compress and encrypt attributes are now supported. If set them, the system may not work properly.
- Hard links, junctions and symbolic links are not supported. If create them, the system may not work properly.
- Filesystem return an error if the total size of opened files exceeds cache size.
- Filesystem return an error if a file size exceeds a cartridge capacity.
- Filesystem may return an error even if there is a free capacity in the cartridge. This is because File Server mode has a margin to prevent write access that exceeds cartridge capacity. The margin is calculated from management information of filesystem, parity information and so on.
- Filesystem may return an error if new file is created in case that the file count of cartridge is around upper limit and jobs related to the cartridge are in processing. Please try again after all jobs are finished.
- In case reading/writing a file, the file in the cartridge is retrieved if the cached file does not exist in the cache. In this case, the file I/O is blocked until the retrieve job is completed.
- In case deleting/moving a file or directory, the file I/O is blocked until the processing is reflected in the cartridge.
- If cache size is small, there is a possibility that the cache folder is occupied with un-archived files. It may cause drastically performance degradation and the system may not work properly because filesystem blocks some access until archiving jobs of un-archived files are completed. Please increase cache size or reduce the size of writing data to the virtual volume when cache size become tight. You can watch the cache usage on the system dashboard of Web GUI.
- The maximum number of simultaneous access is the number of drives that are connected to the system.
- In the Library Software Configuration Tool and Web GUI setting, please set virtual volume name with only half-width alphanumeric. If not so, the system does not work properly.
- please exclude a virtual volume from monitoring target of anti-virus software, e.g. Windows Defender, or File Server mode may not work properly.

4. About SMB access of File Server mode

- If you access by SMB from Mac OS, File Server mode may not work properly.
- You cannot access to the virtual volume correctly if SMB timeout is occurred. And it may cause data corruption. Please set the value of SMB timeout by following manual.
- [How to set on Windows client PC]
 - Using registry editor, please change following registry key. If the key does not exist, please create new one. After settings, please restart client PC.

 Registry Key:

\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters\
Name: SessTimeout
Type: Dword
Data: 65535

5. About DB restore of File Server mode

- If File Manager2 is installed on the clean environment, DB information and information on the online cartridges are synchronized with the current system automatically. However, a part of metadata of file system, such as timestamp, Access Control List (ACL) and Alternate Data Stream (ADS), are not restored. To restore them, it is needed to backup DB information from the old environment in advance and restore it to File Manager2 installed newly. Please note that ACL cannot be taken over if the Windows domains which the old environment and the new environment belongs to is different.
- When you restore DB, please make the cache folder empty. Otherwise, the system may not work properly.
- When you start File Server mode, please wait that completion of the DB restore. If File Server mode starts before DB restore start or during restoring, the system may not work properly.

6. About changing the path of a cache folder of File Server mode

- If you change the path of a cache folder by File Manager2 Web GUI or Library Software Configuration Tool, files and folders in the old cache folder is deleted.
- Please do not change the path of a cache folder when the files written in the virtual volume are not synchronized to the cartridge. Otherwise, unarchived files may be deleted.

Virtual Tape Mode

[Basic Function as Virtual Tape]

In addition to the basic functions as tape, the following functions are supported.

- Compression function (compression method is LZ4)
- WORM support

The following functions are not supported in this version.

- Multipartition (LTFS)
- Encryption

Also, since all ODA cartridges are treated as WORM media, the following functions are not supported.

- Physical format
- Erase

Although WORM media is supported, the following functions are not supported

- Quick erase (short erase)

[Supported Application]

Virtual Tape mode allows you to access Optical Disc Archive Drive Unit via virtual tape interface and backup / restore files by backup software.

- Here are supported software.
 - Arcserve Backup 17.5, Arcserve LLC
 - Veritas NetBackup 8.1, Veritas Technologies LLC
 - Commvault V11 SP16, CommVault Systems, Inc.

[Operation Confirmed Function]

- Arcserve Backup 17.5, Arcserve LLC
 - Backup
 - Archive
 - Restore
 - Schedule
 - Job Management
 - Media Management
 - Inventory
 - Media Pool
 - Compression
 - Disk Staging
 - Tape Staging
 - Staging Restore
 - Synthetic Backup, Restore
 - Multistreaming
 - RAW Backup, Restore
 - Vault
- Veritas NetBackup 8.1, Veritas Technologies LLC
 - Backup
 - Archive
 - Restore
 - Schedule
 - Compression
 - Encryption (only executed by agent)
 - Catalog Backups
 - NetBackup Management
 - Synthetic Backup
 - Multiplexing Backups
 - Disk Staging
 - Spanning Volumes for Large Images
- Commvault V11 SP16
 - Backup
 - Archive
 - Restore
 - Schedule
 - Compression

- Software Encryption
- Catalog Backups
- Commvault Management
- Synthetic Backup
- Multiplexing Backups
- Disk Staging
- Spanning Volumes for Large Images
- Tape to Tape Copy
- Veritas Backup Exec 20.1, Veritas Technologies LLC
 - Backup
 - Archive
 - Restore
 - Schedule
 - Compression
 - Software Encryption
 - Catalog Backups
 - Backup Exec Management
 - Synthetic Backup
 - Disk Staging
- IBM Spectrum Protect 8.1.8, International Business Machines Corporation
 - Backup
 - Archive
 - Restore
 - Retrieve
 - Schedule
 - Compression
 - Software Encryption
 - Database Backups
 - Spectrum Protect Management
 - Multiplexing Backups
 - Disk Staging (Second copy, migrate)
 - Spanning Volumes for Large Images

[Note on Use]

1. About limitations of operations of Virtual Tape mode
 - You cannot set a folder that contains multibyte characters in the full path as a cache folder. Please specify a folder whose full path consists only of ASCII characters.
 - Enter an ASCII character string of 1 to 256 characters (excluding control characters) in CHAP Name.
 - Enter an ASCII character string of 12 to 16 characters (excluding control characters) in CHAP Secret.
2. About limitations of configuration of Virtual Tape mode
 - Please do not start a service that accesses the virtual tape devices before connection between the iSCSI initiator and the iSCSI targets completes successfully.

3. About limitations of library configuration
 - It does not support the operation in the library in which ODS-D77F, ODS-D 280F and ODS-D380F are mixed. Please disable either one or remove it.
4. About limitations of Library Software Configuration Tool
 - If you change the configuration of Optical Disc Archive System after performing the initial settings, you will need to set it again with the Library Software Configuration Tool.
5. About limitations of drive letter
 - Please do not change the drive letter of the Optical Disc Archive Drive Unit after setting the virtual tape once with Library Software Configuration Tool.
 - If you change the drive letter, you need to set it again with Library Software Configuration Tool.
6. About limitations of configuration of Virtual Tape mode
 - Please do not start a service that accesses the virtual tape devices before connection between the iSCSI initiator and the iSCSI targets completes successfully.
7. About limitations of backup application
 - Please do not operate on directories or files on cartridges recorded as virtual tapes.
 - Please do not use the cartridge with backup applications in which did not write to it.
 - Functions not compatible with WORM media cannot be used.
8. Note on the backup application
 - It is recommended that you use blank media when using it as a virtual tape for the first time.
 - The number of files that can be handled depends on the backup application.
 - The limit on the number of files in the Optical Disc Archive file system does not a matter in design in Virtual Tape mode.
9. About firewall settings
 - If File Manager2 and backup software are not installed in the same computer, you have to open specific port of the firewall.
 - Please follow the below steps to configure Windows firewall settings.
 - Apply the setting 1, 2 to the computer on which File Manager2 is installed.
 - Apply the setting 1 to the computer on which backup software is installed.
 - Permit iSCSI service
 - 1-1 Press [Control Panel] > [Windows Defender Firewall].
 - 1-2 Press [Allow a program or feature through Windows Firewall].
 - 1-3 Place a check mark in the check box to the left of "iSCSI service".
 - 1-4 Place a check mark in the check boxes of "Private" and "Public" as needed.
 - 1-5 Press [OK] to save the settings.
 - 2. Permit Sony Optical Disc Archive iSCSI Target Service
 - 2-1 Press [Control Panel] > [Windows Defender Firewall].
 - 2-2 Press [Allow a program or feature through Windows Firewall].
 - 2-3 Press [Allow another app...]
 - 2-4 Press [Browse...]

- 2-5 Select the executable file of the Sony Optical Disc Archive iSCSI Target Service. (Usually, the full path is "C:\Program Files\Sony\ODAFFileManager2\odavt\ODAiScsiTarget.exe".)
- 2-6 Press [Open].
- 2-7 Press [Add].
- 2-8 Verify that "Sony Optical Disc Archive iSCSI Target" is shown in "Allowed programs and features".
- 2-9 Place a check mark in the check boxes of "Private" and "Public" as needed.
- 2-10 Press [OK] to save the settings.

10. About multipath

- Multipath I/O (MPIO) and Multiple Connections per Session (MCS) are not supported in this version.

11. About multi initiator

- Multi initiator is supported in this version.
- If the virtual tape device receives requests for connection from more than one iSCSI initiators simultaneously, we recommend to use virtual tape device with exclusive access for preventing occurring unpredictable event .

12. About other limitations

- If you plug or unplug the Fiber Channel cable of the drive connected to the ODS-L30M while the system is running, the media may not be read and may not be visible from Backup Software. Restart the computer to recover.

[Note on Use with Arcserve Backup]

1. About the serial number assigned automatically by Arcserve Backup

- "Serial No." in "Media Information" will be set depending on the system configuration when the cartridge is inserted and the existence of a barcode label on the cartridge as below.
 - ODS-L30M
 - If There is a barcode label:
value printed on the barcode label
 - Otherwise:
media serial number written on the cartridge memory

2. Direct Mode

- N/A

2. How to make Arcserve Backup recognize virtual devices

- When you use ODS-L30M, you have to perform "Regular Inventory" after Library Software Configuration Tool is executed.
- Otherwise, backup or archiving cannot be executed even if you can see virtual tape devices or cartridges (volumes) in the Device Configuration Dialog.
 1. Arcserve Backup automatically recognizes virtual tape drives and a virtual tape library at startup.

2. Normally this process completes immediately and you can see virtual tape devices and cartridges (volumes) from the device screen.
3. However, when you use ODS-L30M, backup and archiving cannot be executed as it is.
- In order to use recognized volumes, it is necessary to manually perform "Regular Inventory" as following procedure after Tape Engine starts.
 1. Select [Quick Start] > [Administration] > [Device].
 2. Select "LIB-VL1" from the left window.
 3. Open the context menu by right clicking and select [Inventory Slots].
 4. Select the recognized volume and perform "Regular Inventory".
3. How to recover from the backup error
 - If error occurs when performing backup and archiving in Arcserve Backup, additional write to the cartridge becomes unable.
 - Please try to recover the cartridge in the following procedure.
 1. Eject the cartridge from a virtual tape drive.
 2. Insert the cartridge ejected in step 1 again. If the system is based on ODS-L30M, please select the cartridge and perform "Regular Inventory".
 3. When the cartridge is mounting, automatic recovery works and the media becomes writable additionally.
Note: Recovery may fail depending on media condition.
4. Note on using two or more drives
 - The basic feature of Arcserve Backup does not support libraries with more than one tape drives.
 - If you want to use libraries with more than one tape drives, "Arcserve Backup for Windows Tape Library Option" is required.
5. How to use WORM cartridges
 - All cartridges are treated as WORM tape cartridge in Virtual Tape mode.
 - Place a check mark in the checkbox of "Use WORM Media" in "Backup" screen > "Schedule" tab for every scheduling.
6. How to span across the next media when you exhaust the capacity of the cartridge with backup in Direct Mode.
 - If you want to span across the next media when you exhaust the capacity of the cartridge with backup in Direct Mode, please perform following procedure when setup backup.
 1. Select [Quick Start] > [Administration] > [Backup].
 2. Press [Options] on the menu bar.
 3. Select "Operation" tab.
 4. Select "Eject media." in "Eject backup media upon completion".
 - Note:
 - Please note that cartridge cannot eject when recording to the end of the cartridge in Direct mode if the above option is not enabled.
7. How to read data in the second and subsequent span media at restore in Direct Mode.
 - If you want to read data in the second and subsequent span media at restore in Direct Mode, please perform following procedure.

1. The message dialog will be shown saying "Please mount media <the name of next media>" when the cartridge is read to the end of it.
 2. Press [EJECT] and eject the cartridge from the drive.
 3. Wait for about 1 minute and insert the next cartridge.
 4. Press [OK] after the cartridge is mounted.
- Note:
 - If the same message dialog appears by pressing [OK], Arcserve has not been able to detect replacing the media.
 - In this case, please eject the cartridge and wait for about 1 minute, then insert it again.
8. About the case that the cartridge that was used for backup cannot use for archive
 - In this case, the following causes are considered. If applicable, please change the settings.
 - The "Use WORM Media" option was not enabled at the time of backup.
 - The cartridge is assigned to the media pool for backup.
 9. About the thread monitoring error
 - If the error shown below occurs and a backup job or an archive job finished with an error, authentication error is occurring in Arcserve Backup.
 - "YYYY/MM/DD hh:mm:ss W2250 Monitoring thread for child job <Job ID> has been ended with error. (EC=<Error Code>)"
 - In the case that license violation error is observed in "Activity Log" > "Generic Logs"
 - When the license is valid.
 - Retry backup or archive until it succeeds or reboot the computer.
 - When the license is expired.
 - Input valid license.
 - Otherwise, backup jobs or archive jobs will fail.

[Note on Use with Veritas NetBackup]

Please refer to "*System Integration Guide - Using Virtual Tape Mode with Veritas NetBackup -*". Here the parts not described in the guide are shown below.

1. About the barcode of cartridges.
 - If you connect via a virtual library and a barcode label is attached to the cartridge, the character string of the barcode label will be used as the barcode information.
 - If the bar code is not attached to the cartridge, serial number recorded in cartridge memory truncated to conform to Veritas NetBackup barcode rules (trailing 14 characters except white space) is used as the barcode information.
2. How to recover from the backup error
 - Veritas NetBackup performs retry processing if a backup error occurs.
 - Also, backup error occurs if this retry processing fails.
 - After backup error occurs, the status of the cartridge in which the error occurred will be "Frozen" and the status of the tape drive in which error occurred will be "Down".
 - As it is, additional recording to that cartridge is not performed and tape drive is not used for backup restore, so it is necessary to recover this.
 - Cartridge recover procedure

1. Press [Media and Device Management] > [Media] in the left pane.
 2. Cartridges will be shown in the right pane. Open a context menu by selecting and right clicking the cartridge in which error occurred, then select [Unfreeze].
 3. "Unfreeze" dialog will be shown, then press [OK].
- Cartridge recover procedure
 1. Press [Media and Device Management] > [Device Monitor] in the left pane.
 2. Drives will be shown in the right pane. Open a context menu by selecting and right clicking the tape drive in which error occurred, then select [Up Drive].
 3. Press sometimes [Refresh] and confirm the status will be "Up". (It may take about 1 minute.)
 - Note:
 - If the status does not become "Up" for a long time, you need to execute Library Software Configuration Tool.
3. Mount error in the system based on ODS-L30M and how to resolve it
 - If the mount process takes much time and error occurs during backup, device index (the number assigned in the order in which it is recognized from the Windows OS) may have changed from that when just performed "Configure Storage Device".
 - In order to resolve this error, please retry "Configure Storage Devices" by the following procedure.
 1. Stop Media Server from [Stop/Restart Media Manager Device Daemon].
 2. Select [Media and Device Management] > [Devices] > [Drives] and delete all devices in the right pane. (Restarting Media Server is not required.)
 3. Select [Media and Device Management] > [Devices] > [Robots] and delete all devices in the right pane. (Restarting Media Server is not required.)
 4. Open [Control Panel] > [iSCSI Initiator] and disconnect virtual tape targets (The end of the virtual tape target's IQN is odavt-target#n; #n is a number from 0 to 5).
 5. Open [Settings] screen > [Library] page of File Manager2 Web GUI and check the correspondence between the drive slot and iSCSI target.
 6. Reconnect the iSCSI target in ascending order of the "Location" value of the drive.
 7. Retry "Configure Storage Devices".
 4. Operation after recording data to cartridge full in Direct Mode
 - Veritas NetBackup aborts the backup job and asks the operator to replace it with a new cartridge if you record data to cartridge full in Direct Mode.
 - To restart the backup job, please follow the steps below.
 1. Remove the ejected cartridge and inject a new cartridge.
 2. After confirming that the cartridge has been mounted successfully, select [Media and Device Management] > [Device Monitor].
 3. Press the refresh button at the top of the right pane.
 4. Select the aborted job at the bottom of the right pane.
 5. Right click and select [Assign Request] from displayed menu.

[Note on Use with Commvault]

Please refer to "*System Integration Guide - Using Virtual Tape Mode with Commvault -*". Here the parts not described in the guide are shown below.

1. About the barcode of cartridges.
 - If you connect via a virtual library and a barcode label is attached to the cartridge, the character string of the barcode label will be used as the barcode information.
 - If the bar code is not attached to the cartridge, serial number recorded in cartridge memory truncated to conform to Commvault barcode rules (trailing 14 characters except white space) is used as the barcode information.
2. How to recover from the backup error
 - When a backup error occurs, Commvault sets the status of the cartridge used for backup to write-protected and continues backup using other available cartridges. If you want to add rest data to a cartridge that has failed to be backed up and is write protected, please do the following.
 1. In CommCell browser, please expand [Storage Resources] > [Libraries] > [(library device name)] > [Media By Location] > [Media In Library].
 2. Right click on the target media and select [Options] > [Mark Appendable] from displayed menu.
 3. Right click on the target media and select [All Tasks] > [Verify media] from displayed menu.
 4. After completion of "Verify Media", you can append data to the cartridge again.
3. Mount error in the system based on ODS-L30M and how to resolve it
 - If mount failure occurs during backup or restore, the tape drive location assigned to the library during "Expert Storage Configuration" may not be correct. Refer to "System Integration Guide - Using Virtual Tape Mode with Commvault -" for the correct location.
 - In order to resolve this error, please retry "Expert Storage Configuration" according to the following procedure.
 1. In CommCell browser, please expand [Storage Resources] > [Libraries].
 2. Right click on the target library and select [Deconfigure] from displayed menu.
 3. Open [Control Panel] > [iSCSI Initiator] and disconnect virtual tape targets (The end of the virtual tape target's IQN is odavt-target#n; #n is a number from 0 to 5).
 4. Open [Settings] screen > [Library] page of File Manager2 Web GUI and check the correspondence between the drive slot and iSCSI target.
 5. Reconnect the iSCSI target in ascending order of the "Location" value of the drive.
 6. Retry "Configure Storage Devices".

[Note on Use with Backup Exec]

Please refer to "*System Integration Guide - Using Virtual Tape Mode with Backup Exec -*". Here the parts not described in the guide are shown below.

1. About the barcode of cartridges.
 - If you connect via a virtual library and a barcode label is attached to the cartridge, the character string of the barcode label will be used as the barcode information.
 - If the bar code is not attached to the cartridge, serial number recorded in cartridge memory truncated to conform to Backup Exec barcode rules (trailing 14 characters except white space) is used as the barcode information.

2. About the maximum capacity and remaining capacity of the cartridges.
 - Backup Exec can only display the maximum capacity and remaining capacity of a virtual tape cartridge up to 2G -1 bytes. This is the current UI specification for Backup Exec. There is no effect on actual operation. Please also refer to System Integration Guide.

[Note on Use with Spectrum Protect]

Please refer to "*System Integration Guide - Using Virtual Tape Mode with Spectrum Protect -*". Here the parts not described in the guide are shown below.

1. About the barcode of cartridges.
 - If you connect via a virtual library and a barcode label is attached to the cartridge, the character string of the barcode label will be used as the barcode information.
 - If the bar code is not attached to the cartridge, serial number recorded in cartridge memory truncated to conform to Spectrum Protect barcode rules (trailing 14 characters except white space) is used as the barcode information.
 - You can select the method to label tape volume. One method is to read barcode to be labeled automatically, and the other method is to specify the name of volume to be labeled manually.
2. How to recover from the backup error
 - When a backup error occurs, Spectrum Protect sets the status of the cartridge used for backup to write-protected and continues backup using other available cartridges. If you want to add rest data to a cartridge that has failed to be backed up and is write protected, please execute the following command from administrative command-line client or Operation Center command line.

```
> update volume <volume_name> access=readwrite
```

When a backup error occurs, Spectrum Protect also sets the status of the drive used for backup to offline. If you want to recover the status of drive, please execute the following command.

```
> update drive <library_name> <drive_name> online=yes
```

If the status of library and drive are set to offline after backup failure, please try restarting Spectrum Protect service or Spectrum Protect server.

3. Mount error in the system based on ODS-L30M and how to resolve it
 - If mount failure occurs during backup or restore, the tape drive location assigned to the library during drive configuration or device path of the tape drive may not be correct. Refer to "*System Integration Guide - Using Virtual Tape Mode with Spectrum Protect -*" for the correct location.
 - In order to resolve this error, please configure drive settings as follows.
 - An example where the drive name is "ods-d380", the library name is "petasite" and the server name is "server1", is as follows.

```
> update drive petasite ods-d380 element=<correct location>
```

```
> update path server1 ods-d380 srctype=server desttype=drive library=petasite  
device=<correct device path>
```

Note: If you have already configured correct location/path as a part of another drive settings, you cannot configure drive settings because of the conflict of settings. In this case, we recommend deleting related settings or removing related settings before you re-configure drive settings.

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