

SONY

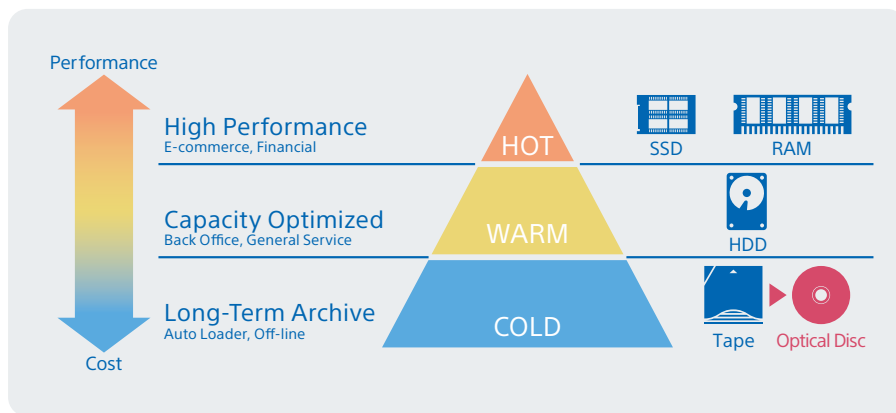
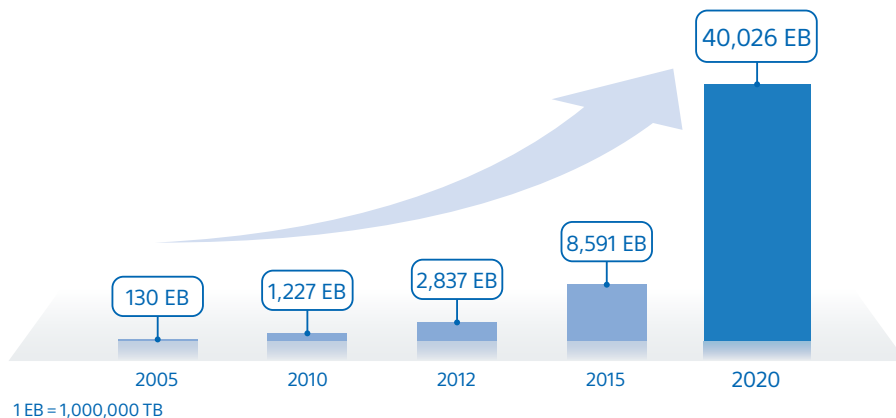


Optical Disc Archive

The new standard for data archiving

1 | Explosively increasing digital data

Ever-increasing volumes of digital data are mounting up every day due to rapidly growing internet technology, widespread use of SNS, data transmission between network-connected devices, and other trends. Within the video production industry, data-heavy video content (for example, 4K, 8K, and 4K/8K high-frame-rate video) is becoming a major source of video broadcasting. Somehow, these newly created assets need to be managed effectively, stored safely, and utilized along with the old assets.

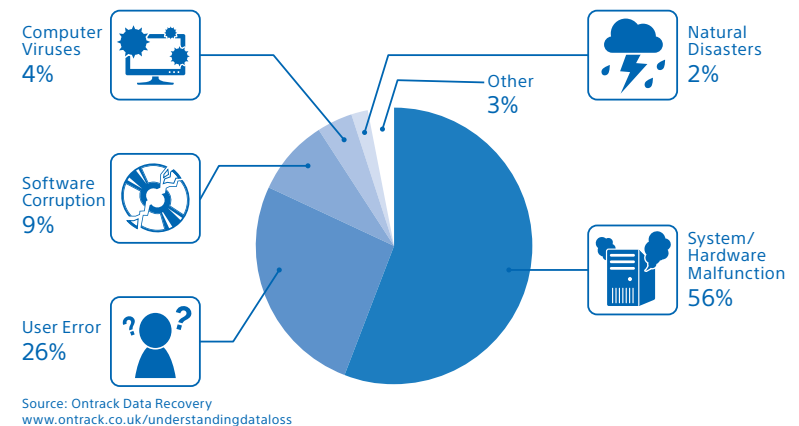


Source: International Data Corporation (IDC)

2 | Why data management is important

Today, files can be lost from computers in any number of ways—you might accidentally delete a file, a virus might wipe one out, or there could be a complete hard drive failure. When a hard drive dies an untimely death, it can feel like a house has burnt down. Important personal items are usually gone forever—photos, significant documents, downloaded music, and more.

There are many options for backing up content without any sophisticated equipment—you can use DVDs, external hard drives, optical discs, or even online storage. It's a good idea to back up data to multiple places.



Optical Disc Archive

Sony's Optical Disc Archive storage system offers the solution, with a low total cost of ownership through the use of long-life media, and it includes inter-generational compatibility based on the same optical disc technology used in DVDs and Blu-ray discs.

Optical Disc Archive

An entirely new optical disc-based storage system is the Optical Disc Archive. The system involves the use of multiple bare discs contained within a very robust cartridge and a dedicated disc drive unit with an associated software driver able to manipulate discs individually—providing a seamless read/write capability.

Advantages

Long Life

- Using new generation high-capacity optical disc “Archival Disc”
- More than 100 years life by ISO based acceleration testing*

*Generation 2

Robust

- Durable and resilient in a wide range of environmental conditions
- Water disaster resistant
- Readable more than one million times

High Speed

- Average read rate of 250MB/s*
- World’s first 8-channel optical drive unit*
- “On-the-fly” verification for error-free recording

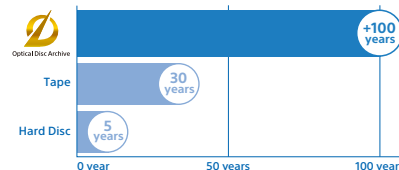
*Generation 2

Accessibility

- UDF format for random access
- Non-contact read/write technology
- Minimized number of switching recording media

Low TCO

- Extremely low TCO (Total Cost of Ownership)
- Only 700W needed to manage 1.7PB data
- Generation compatibility minimizes migration cost

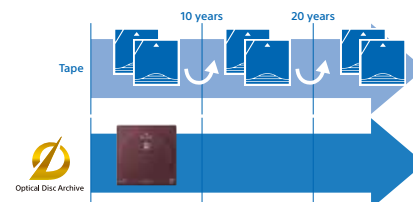
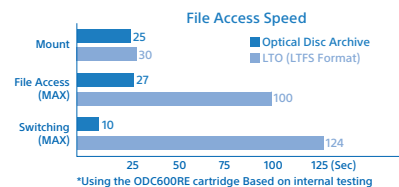
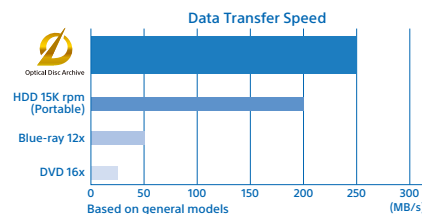


Temperature

-10~55°C

Humidity

3%~90%RH



Usage

Video Archiving



Secure Data Management



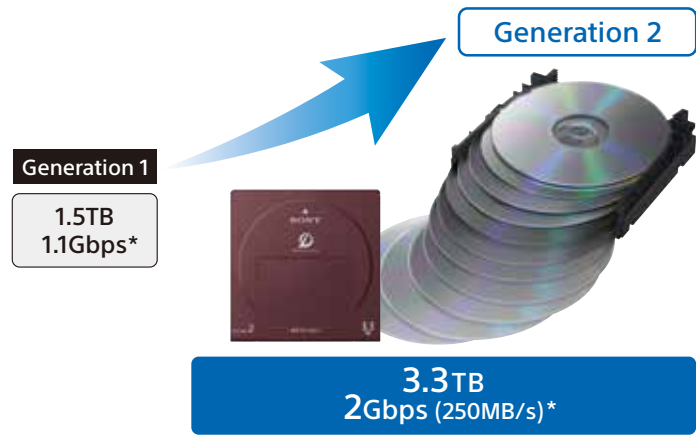
S&D Data Archiving



- Storage for Data Center
- Storage of CAD Data
- Medical Images Storage
- Security Video Storage
- Storage of Official Documents
- Big Data Storage
- Storage of Uncompressed Image Data
- Storage of Art and Cultural Assets

Optical Disc Archive Cartridge

New Generation of High-Capacity Optical Disc



A variety of high-capacity media cartridges are available for the Optical Disc Archive System, From 300 GB to 3.3 TB, Write-once and Rewritable, you can select the media capacity that best fits your workflow.
* Read Speed

Mass Storage Media with Proven Optical Disc Technology

The cartridge contains multiple discs that appear to the user as one volume of mass storage. The file format is UDF (Universal Disk Format). Each cartridge allows random access to files and high-speed data retrieval.
* The cartridge cannot be opened by users.

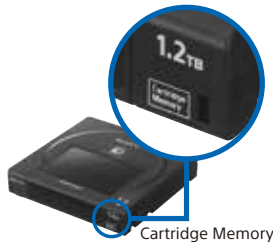


High Reliability & Durability, Optimized for Long-Term Archiving

The non-contact read/write technology of optical disc enables high reliability. Optical disc technology is extremely robust with a media archival life estimated at 100 years, substantially longer than other storage media in the market. The cartridge is designed to be highly durable and resilient in a wide range of environmental conditions. This enables you to store the media in the typical office environment and does not require special climate controlled conditions.
*Estimated average archival life based on internal acceleration testing (the ODC3300R).

More Convenient, Efficient Asset Management

The media has a built-in “Cartridge Memory”. This provides seamless integration between the cartridge and drive by storing basic content recording information. With the future release of application software, the cartridge memory feature will allow users to identify the contents of the media with mobile devices for efficient asset management, such as cartridge tracking and digital asset inventory control.



	Optical Disc Archive 2	Optical Disc Archive 1			
Model Name	ODC3300R	ODC1500R	ODC1200RE	ODC600R	ODC600RE
Media Type	Write Once	Write Once	Rewritable*1	Write Once	Rewritable*1
Capacity*2	3.3 TB	1.5 TB	1.2 TB	600 GB	
Recording Time*3 MPEG HD422 50Mbps	104 Hours	48 Hours	38 Hours	18.5 Hours	
Rewritable Cycles	-	-	More than 1,000 times	-	More than 1,000 times
Read Cycles*4	More than 1,000,000 times				
Operation Temperature	5°C to 55°C (41°F to 131°F)				
Storage Temperature/ Humidity	-10°C to +55°C (14°F to 131°F) / 3% to 90% RH (Short-term transportation condition) 10°C to 30°C (50°F to 86°F) / 30% to 70% RH (Long-term recommended)				
Estimated Archival Life*5	100 years	50 years			

*1: Only the index reference is changed when the user deletes a file and the capacity on the disc is not restored, unless it is the last recorded file on disc. The initial capacity can only be restored by re-formatting the cartridge.
*2: Recording capacity depends on the usage environment. Actual recordable capacity may be less than indicated on the cartridge.
*3: The recording time is for reference only and based on a fully recorded disc at the specified data rate.
*4: Read cycles = Number of times for reading data in the disc.
*5: Estimated average archival life based on internal acceleration testing.

Optical Disc Archive

ODS-D280U Drive ODS-D77UA



A starter system ideal for the camera owner / operator or a small studio is Sony's single-user solution - a choice of stand-alone drives. These USB 3.0 drives plug directly into compatible Macintosh and Windows computers. They provide a desktop solution that is ideal for long-term file protection and management, and are an easy choice because a cartridge loaded with multiple discs functions as a single unified volume.

Main Features

● Fast Transfer Speeds

Provides an average read rate of 2 Gbps (250 MB/s) and an average write rate of 1 Gbps (125 MB/s) with verify.

		Optical Disc Archive 2	Optical Disc Archive 1*2
		ODS-D280U*3	ODS-D77UA
Read		2 Gbps*1	1.1 Gbps
Write Verify On	Write Once	1 Gbps*1	440 Mbps
	Rewritable	–	160 Mbps

*Performance varies based on cartridge type. *Performance might be affected based on PC environment.

*1 Using the ODC3300R Cartridge. *2 Optical Disc Archive 1 can not use the ODC3300R Cartridge.

*3 The ODS-D280U/F can read a data from all cartridges, but can write a data to the ODC3300R only.

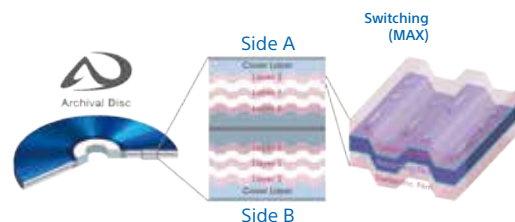
Please use the ODS-D77UA if you need to write a data to Optical Disc Archive 1 cartridge (P4).

- Long Life - write-once (WORM) and rewritable large volume media – stores from 300 GB to 3.3 TB in a single data cartridge Virtually data migration-free system
- Fast random file access to data files
- Easy-to-connect USB 3.0 interface
- Open Platform Architecture-Universal Disk Format (UDF)
- Supplied with Content Manager license

New Technology (ODS-D280U)

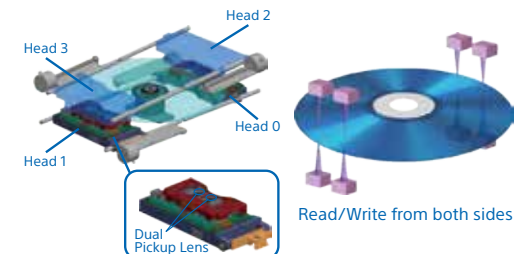
High-Capacity Disc Structure

By implementing six discrete recording layers (three on each side) and recording on both land and groove, the new standard achieves a revolutionary jump in storage capacity, to 300 GB per disc.



8-Channel Optical Drive Unit

Sony's original drive unit holds four laser head assemblies, each containing two heads for a total of eight laser heads. With two assemblies positioned at the top and two at the bottom, the system can read/write both sides of the disc at the same time.



Content Manager

A Content Manager software license is supplied with the drive for stand-alone usage.

- Simple graphical user interface to manage files easily
- Supports troublesome tasks including creating metadata
- Printing labels to improve efficiency
- Automatically generates proxy and thumbnail generation
- Supports a variety of formats for creating metadata
- MD5 checksum for archive data
- Import/export metadata created in the cartridge unit

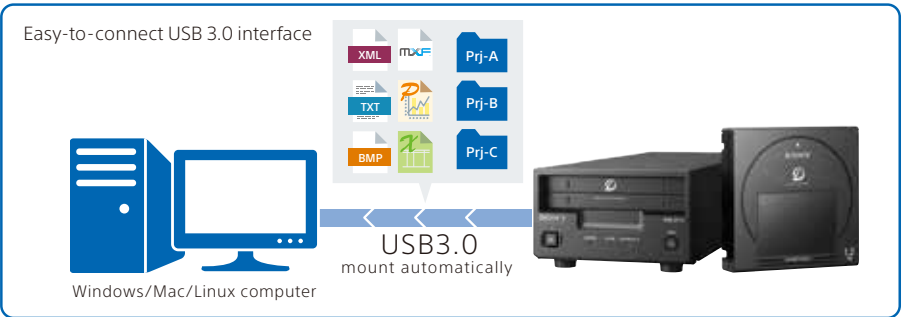
User Interface



Support Format for Creating Metadata

	File Format
XAVC	MXF
MPEG HD 422	MXF
MPEG HD 420	MXF
MPEG HD	MP4
AVCHD	MTS, M2TS
MPEG IMX	MXF
HDV	M2T (Windows), MOV (Mac)
DV	AVI (Windows), MOV (Mac)
ProRes	MOV
DNxHD	MOV

System Example



Specifications

	Optical Disc Archive 2	Optical Disc Archive 1
	ODS-D280U	ODS-D77UA
Power Requirements	19.5 V DC*1	
Power Consumption	80 W	48 W
Operating Temperature	5°C to 40°C (41°F to 104°F)	
Storage Temperature	-20°C to +60°C (-4°F to +140°F)	
Mass	4.8 kg	4.3 kg
Dimensions (W H D)*2	146 x 94.2 x 414.4 mm	146 x 84 x 398 mm
Input/Output	Super Speed USB (USB3.0)	
Supplied Accessories	AC Adaptor (1), USB3.0 Cable (1), Operation Manual (1), Operation Manual CDROM (1), Serial Number Sheet for Contents Manager (1) AC adapter x1 *3 USB3.0 cable x1 Operation guide x1 Operation manual (CO-ROM) x1 Serial number sheet for Content Manager (License key) x1	

*1 AC adaptor supplied

*2 Excluding protrusion

*3 AC power code is not bundled

Optical Disc Archive PetaSite Scalable Library

ODS-L30M Master Unit

ODS-L60E Extension Unit (Drive and Cartridge)

ODS-L100E Extension Unit (Cartridge only)

ODS-D280F Drive Unit

ODS-D77F Drive Unit



File Manager

- Fully scalable
- Automated failover of library control path
- Co-existence of automated library operation and offline shelf management
- High performance of end-to-end operation
- Best solution for partial retrieve
- Interoperability between library and standalone drive
- File format-agnostic

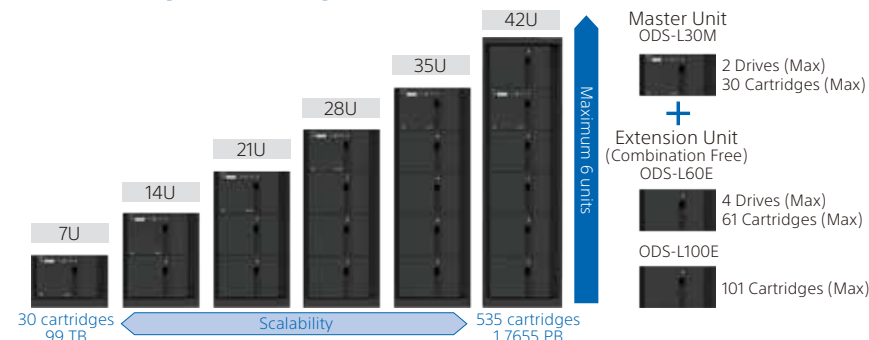
Expandable with up to 5 Extension Units

The ODS-L30M forms the basis of the PetaSite scalable library that is easily scalable with ODS-L60E (Drive and Cartridge) and ODS-L100E (Cartridge only) extension units.

The ODS-L60E extends the PetaSite, scalable library operating alongside the ODS-L30M and ODS-L100E (Cartridge only) expansion units, while the ODS-L100E extends the PetaSite, scalable library operating alongside the ODS-L30M and ODS-L60E (Drive and Cartridge) expansion units.

Up to a maximum of five expansion units can attach to the ODS-L30M to make a single 42U library offering a maximum of 535 cartridges (1.7655 PB), depending on the extension units used.

Flexible System Expansion



System Expansion Image

ODS-L30M Master Unit	ODS-L60E Drive/Cartridge Extension Unit	ODS-L100E Cartridge Extension Unit	Maximum Number of Cartridges	Maximum Capacity (ODC3300R / 3.3 TB)
1	0	5	535	1765.5TB
	1	4	495	1633.5TB
	2	3	455	1501.5TB
	3	2	415	1369.5TB
	4	1	375	1237.5TB

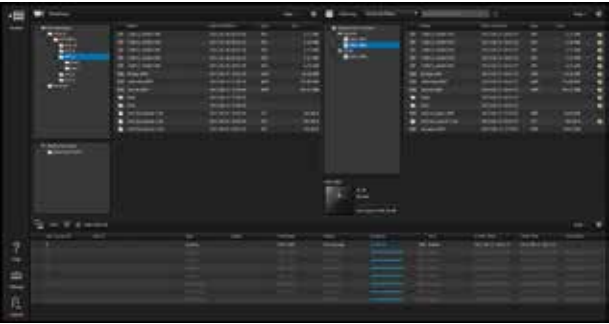
Mounting Optical Disc Archive Drive Unit : ODS-D280F and ODS-D77F.
The usable capacity may be less than the maximum capacity.

File Manager

After File Manager software has been installed on a host computer, all operations can be controlled with a web-based GUI from each client computer.

- Simple graphical user interface to manage files easily
- Supports troublesome tasks including creating metadata
- Printing labels to improve efficiency
- Automatically generates proxy and thumbnail generation
- Supports a variety of formats for creating metadata
- MD5 checksum for archive data
- Import/export metadata created in the cartridge unit

User Interface



Support Format for Creating Metadata

Host Computer	
Processor	Intel Core i5 3 GHz or higher
Memory	8 GB or more
Hard Disc Drive	1. 500 GB(or more) of capacity for OS and DB 2. 2 TB (or more) of cache space per drive;configuration; RAID is recommended; you can also use other storage (NAS, etc.) as cache
OS*	Windows 7/8.1 Professional 64bit, Windows Server 2008 R2, 2012, 2012 R2
Port	2 x Ethernet port, 1 x USB3.0 port per drive
Client Computer	
Hardware	Any computer, provided common web browsers function correctly
OS*	Windows 7/8.1/10 64bit, Mac OS 10.8, 10.9, 10.10, 10.11
Web Browser*	Chrome 22 or above; Internet Explorer 10 or above

* These are verified for proper operation of the software. Please check the latest release note.

Ideal for Deep and Near-Online Archives

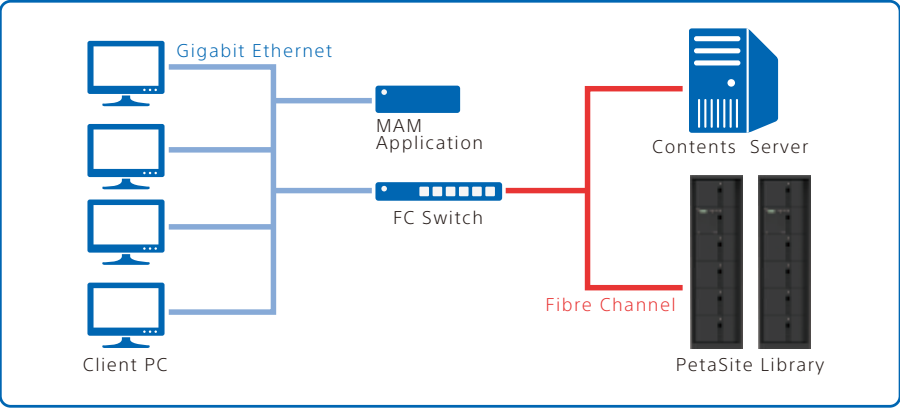
Sony's Optical Disc Archive system is ideal as a deep archive for very long- term archiving, such as broadcaster archives where a data tape does not provide the assurance of (or meet the need for) write-once, very long- term archiving. It can provide a second-copy archive at remote sites, and is ideal for business continuity/disaster recovery, for post-house and post-production backup, and for video, film, and stock footage archives or national archives. The system can also be used for news and sports clips that need to be near-online, and as an online browse and proxy clip store.

	ODS-L30M	ODS-L60E	ODS-L100E
Maximum Number of Drives	2	4	0
Maximum Number of Cartridges	30	61	101
Max. Data Capacity	99 TB	201.3 TB	333.3 TB
Host Interface	Fiber Channel 8Gbps		
Maintenance Interface	Gigabit Ethernet		
Power Requirements	100 V AC to 240 V AC, 50 Hz/60 Hz		
Power Consumption*1	179W	12W	-
Operating Temperature	5°C to 35°C (41°F to 95°F)		
Operating Humidity	20% to 80% (relative humidity)		
Mass*2	31kg	25kg	23kg
Dimensions (W x H x D)	445 x 308 x 940 mm (17 5/8 x 12 1/4 x 37 1/8 inches) (excluding protrusions)		

*1 The values of Watt for the OSD-L30M/L60E are the values without drive unit.

*2 Excluding cartridge and rack (body mass only).

System Example

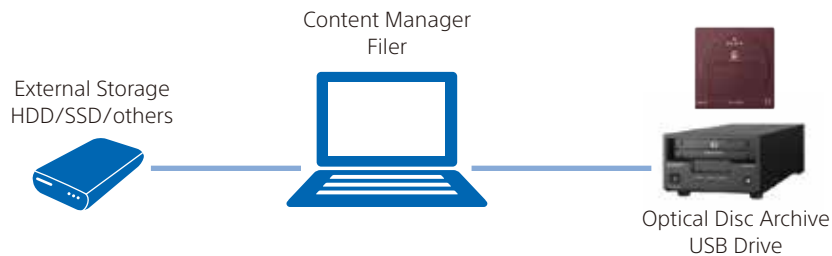


Use Case

ODA can be utilized in different scales and for various applications across a wide range of industries, based on its longevity and accessibility. For example, from a laptop-based compact archive to a huge data center solution.

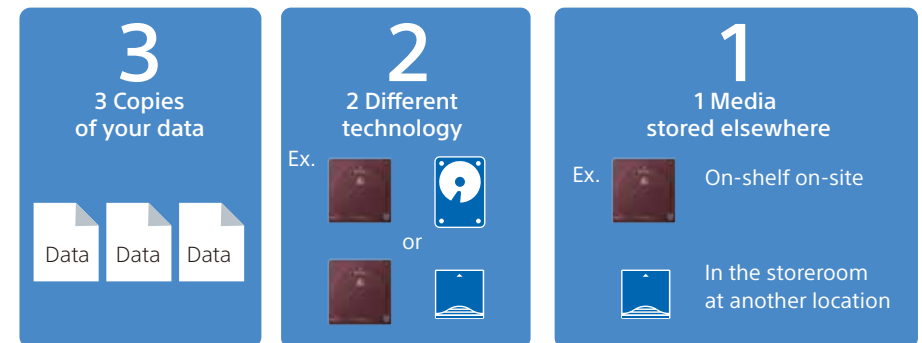
Archive/Backup with a stand-alone drive

Laptop-based compact archive



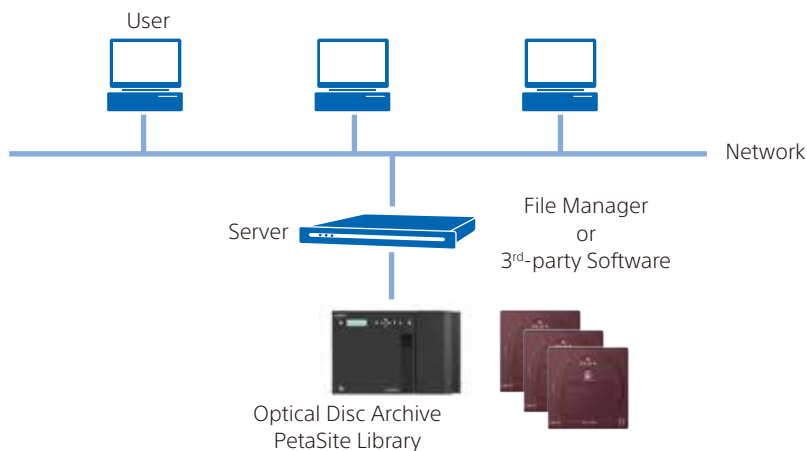
"3-2-1 Best Practice" as an archive industry standard

Follow the "3-2-1 rule" for safe, long-term data storage. ODA is a perfect fit as one of media in this rule.



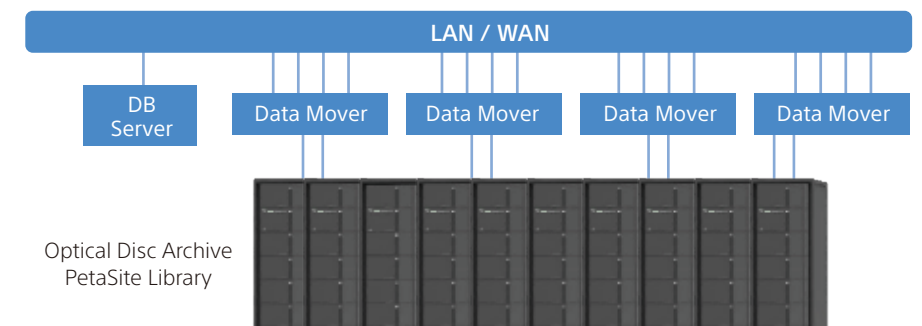
Archive/Backup with a library system

Scalable archive solution with ODA library



Data center solution

Large data center-type solution with multiple libraries.



Towards Wider Use of the Optical Disc Archive

Sony is promoting an open platform approach and providing technologies and support to encourage independent software vendors or SI's to develop supporting products for the Optical Disc Archive. This cooperation is opening up a wide range of total archiving solutions from small to large companies. Quite a few data archiving, HSM or media asset management applications have already supported Sony Optical Disc Archive.



Optical Disc Archive Product

Stand-Alone Drive Unit



Optical Disc Archive 2 Drive Unit
ODS-D280U



Optical Disc Archive 1 Drive Unit
ODS-D77UA

Archive Software

Content Manager License Key
ODSZ-CTM1

File Manager License Key
ODSZ-FM1

* Software is available in Sony Creative Software homepage.
URL:<http://www.sonycreativesoftware.com>

PetaSite Scalable Library



Master Unit
ODS-L30M



Extension Unit (Drive and Cartridge)
ODS-L60E



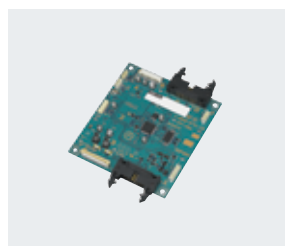
Extension Unit (Cartridge Only)
ODS-L100E



Optical Disc Archive 2 Drive Unit
ODS-D280F



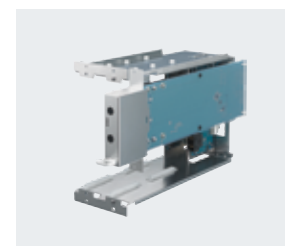
Optical Disc Archive 1 Drive Unit
ODS-D77F



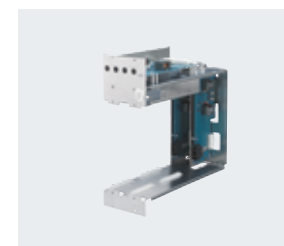
Extension Kit for
ODS-L30M
ODBK-103



Power Supply for
ODS-L30M / ODS-L60E
ODBK-201



Power Supply Base Unit
for ODS-L30M
ODBK-202



Power Supply Base Unit
for ODS-L60E
ODBK-203

* The ODBK-202 or ODBK-203 is needed for replacement of the ODS-D77F to the ODS-D280F.



Optical Disc Archive

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