Supported Environments

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DIVA Library

For more information about DIVA, browse the DIVA library at telestream.net/telestream-support/DIVA/support.htm.

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DIVA Supported Environments

This chapter provides setup details for environments that DIVA supports. It also provides details for architecture and server-sizing purposes.

Topics

- Overview
- Core Options and Licensing Metrics
- Product Compatibility
- Hardware and Software Requirements
- Supported Libraries and Control Software
- Supported Drives
- Supported Disks
- Supported Object Storage
- Supported Partial File Restore Formats
- Supported Unmanaged Storage Repositories
- Supported Tape Formats
- Supported Transcoders
- Supported Third-Party Components
- Supported Avid Environments

Overview

The DIVA architecture allows the integration of many different types of servers and technologies, such as Broadcast Video Servers, Storage Area Networks, and Enterprise Tape Group Managed Storage. DIVA can support interoperability among systems, helping to ensure long term accessibility to valued content, and keeping up with evolving storage technologies.

DIVA supports system installations on Windows 2016, 2019, 2022, and 2025. All Windows installations must be in English only.

The installation of DIVA varies from site to site. The exact configuration of your specific DIVA platform is not covered in this guide. For details on your specific DIVA System

installation and configuration, consult with the Telestream Installation and Delivery Team.

Note: Telestream recommends keeping the operating system up to date with the latest security patches.

Core Options and Licensing Metrics

The following table identifies Core options and licensing metrics.

Description	Licensing Metric
DIVA System	Per Server
DIVA Single	Per Server
DIVA Actor	Per Server
DIVA Avid Connector	Per Avid Archive Provider
DIVA Partial File Restore	Per System
DIVA Analytics	Per Server
Managed Storage Capacity	Per 500 TB Block
Unlimited Storage Capacity	Per System

Product Compatibility

DIVA is compatible with other DIVA Core product lines including the following:

Postgres Database and DIVA Backup Service

The Database and Backup Service components are installed as integral parts of the standard DIVA system installation; typically on the same server as DIVA. The DIVA Backup Service manages and monitors the entire backup process.

Scheduled backups using the DIVA Backup Service are configured in the Backup Service configuration file. DIVA, through version 9.5, supports Postgres Database version 14. DIVA 9.6 and later support Postgres Database version 17.

The DIVA Backup Service is also used to back up the MongoDB database and Elasticsearch, which are both required for metadata storage and searching.

DIVA Connect 4.0

DIVA Connect 4.0 supports DIVA 8.0, 8.1, 8.3, 9.0 and above. DIVA Connect 4.0 works with DIVA API versions 9.0 and below. The DIVA Connect 4.0 ClientAdapter doesn't inter-operate with the DIVA Connect Core Adapter 3.2 and below. Either DIVA Connect

2.0 or Legacy DIVA Connect must be used when running DIVA Core releases earlier than DIVA Core 7.3.1.

If operating a DIVA Core release earlier than 7.3.1, refer to the *DIVA Connect Installation, Configuration, and Operations Guide*.

Supported API Releases

The following legacy API releases and configurations are supported for each major DIVA Core and DIVA release. That is, the last two version-number changes.

Note: Telestream has deprecated the DIVA C++ API and the DIVA Java API.

Note: Telestream strongly recommends that you use the DIVA REST API rather than previous APIs such as the DIVA C++ API. The DIVA C++ API is deprecated, but supported for backward compatibility. The DIVA REST API offers new and enhanced features and security.

DIVA REST API

DIVA exposes its functionality through a REST interface. It is self-contained in DIVA and all future DIVA releases. The API is used by the DIVA Web App and other internal components (for example, SPM, Migration Service, and so on).

For detailed information, see the *DIVA Application Programming Guide*.

Web Services APIs

- DIVA REST API: the DIVA REST API is embedded in DIVA.
- WS 2.1: REST and SOAP require the DIVAS component. (Deprecated)
- WS 2.2: REST and SOAP require the DIVA Enterprise Connect component. (Deprecated)

Supported and Tested Legacy API Configurations

The following API configurations are supported in DIVA and later:

- DIVA C++ API 7.5 to 5.5 on Windows
- DIVA Java API 7.5 to 6.5 on Windows
- Enterprise Connect (latest release) on Windows with the following configurations:
  - –http, rest, xml, connect directly to DIVA
  - –http, rest, form_url_encoded, connect directly to DIVA
  - –http, soap, xml, connect directly to DIVA
  - –https, rest, xml, connect directly to DIVA
  - –https, rest, form_url_encoded, connect directly to DIVA
  - –https, soap, xml, connect directly to DIVA

Untested Configurations

The following API configurations are untested. Use them at your own risk:

- C++ and Java Legacy API 7.6 and newer.
- DIVA Core Symphony; that is, DIVAS that uses WSO2 application server.
- Older Enterprise Connect (older than latest release). That is, if another EC is released, only the latest release will be tested.
- Enterprise Connect connected using the DIVA Core Adapter mode.

Hardware and Software Requirements

These are the minimum hardware and software requirements to install and operate the DIVA software. Refer to *General Storage Requirements* for detailed disk configuration information.

RAM usage for MongoDB and Elasticsearch

MongoDB uses RAM heavily to optimize performance by minimizing disk I/O. Its WiredTiger storage engine maintains a large in-memory cache that stores frequently-accessed data and indexes. By default, MongoDB can use up to half the available RAM minus 1GB to this cache, ensuring that most read and write operations take place in memory rather than on disk.

Even if MongoDB appears to use 60% or more of the RAM, it's typically intentional and beneficial. This helps keep the database fast and responsive. Only when the server experiences swapping or memory pressure might this become problematic.

Elasticsearch uses a large amount of RAM to deliver fast full-text search and analytics by keeping data and indexes in memory. This relies on the Java Virtual Machine (JVM), which reserves a fixed heap space — typically 50% of available RAM (up to 32 GB max) — for internal operations like caching, indexing, and query execution.

DIVA Architecture

A DIVA system uses a combination of software modules which can run on a single computer, or can be distributed across different systems.

Note: Make sure Network Time Protocol (NTP) is working and verified on the server where you are installing your DIVA components stack.
NTP helps prevent certificate expiry between Manager, REST APIs, Actors, and Tier 3 components. NTP also makes log-file analysis easier when DIVA components are spread across servers.

The main DIVA components are as follows:

Manager

The DIVA component of the archive also hosting the archive system database.

Manager Cluster
Based on the Microsoft Cluster configuration. Manager Cluster is valid only in a Windows-based environment.

Actor
Responsible for all data transfers to storage media (Archive, Restore, Copy, Repack, and so on).

Actor and Manager (Single Computer)
Systems running both Actor and Manager functions on a single computer. Try to avoid this configuration for performance reasons. This is only usable for entry level configurations.

DIVA Connect 2.1 and Later
Used in DIVA Connect configurations for unified access. DIVA Connect 2.1 and later aren't drop-in replacements for the legacy DIVA Connect. DIVA Connect 2.1 and later are specifically designed for compatibility with DIVA Core 7.5, and later, Windows installations. DIVA 2.1 and later aren't backward-compatible with DIVA Core releases before 7.3.1.

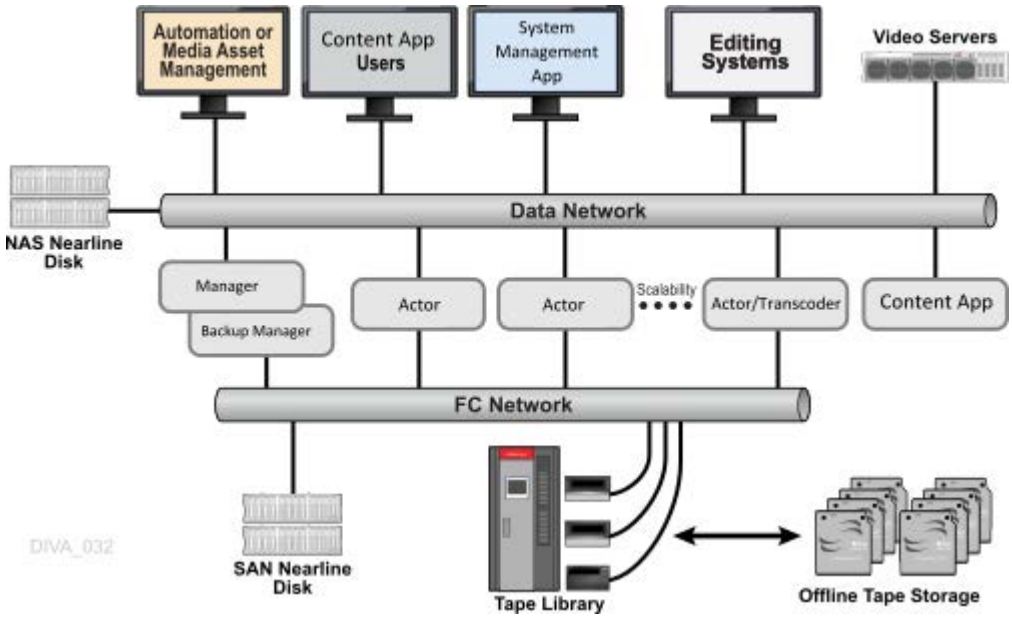
Note: DIVA Connect 4.0 has been released with DIVA.

See the DIVA Connect documentation on the Telestream DIVA Support Portal for detailed DIVA Connect information.

DIVA Web App
Used for configuring, monitoring and managing the DIVA system.

Note: Telestream recommends using the Chrome browser to use the DIVA Web App.

The following figure represents a DIVA configuration with the main DIVA software components installed on different servers. DIVA Connect (used to access multiple DIVA systems) is not represented and is generally installed on a dedicated server.



System Component Interconnectivity

On the data path, a DIVA solution is connected on the storage side to the Tape Group library, shared disks, Object Storage, or any combination of these. On the source and target side, it is connected to the video servers, nonlinear editors, or file servers.

Storage Connection

SAN (Storage Area Networks), NAS (Network Attached Storage), or Direct Attached technologies can be used. Different types of interfaces are required on the servers to support the different types of storage devices as follows:

- Fiber Channel HBA (Host Based Adapter) for SAN
- SCSI Bus or HBA for Direct Attach
- 10 Gigabit Ethernet for NAS
- Cloud Storage
- Tape Libraries

Intel and Microsoft Windows

Telestream can deliver x86 architecture servers matching or exceeding the recommendations provided in the following sections (except the Windows license to be purchased). Partners can also purchase servers from other vendors if the minimum requirements are met. Telestream does not qualify or recommend specific models from other vendors.

Note: The operating system installed on all computers must be installed in the English language. Telestream does not support DIVA computers that have the operating system installed in other languages.

DIVA Appliance and DIVA Turnkey Bundle

The DIVA appliance, also referred to as DIVA Turnkey Bundle, is a pre-built system available to customers that includes hardware and software ready to rack and turn on.

The appliance is supported by the DIVA installer and creates a site-production system to match the hardware of the appliance.

Operating System Compatibility

Use the following table to confirm that you have the proper operating system installed for each computer in the system when upgrading your DIVA installation.

Note: The minimum server operating system for using complex objects is Windows Server 2016.

Component	DIVA Release	Operating System Compatibility (for upgrades only)
DIVA and Actor	9.0 up to 9.5	Windows Server 2016 Windows Server 2019 Windows Server 2022 Windows Server 2025
DIVA and Actor	9.6 and later	Windows Server 2019 Windows Server 2022 Windows Server 2025
DIVA Connect	2.3.1 and later	Windows Server 2016 Windows Server 2019 Windows Server 2022 Windows Server 2025

Manager

HDD sizing for the Manager is now more complex. With the addition of MongoDB, Elasticsearch, and Postgres, more space is required for successful operations. The following server platform is the minimum requirement recommended for the installation of the Manager software:

- Rack mount chassis
- Intel® Xeon® Silver 4214R 2.4Ghz 12C/24T or equivalent (optional second processor possible)

- 64GB RAM
- Two 2 TB HDD 15,000 RPM or SSD (configured in RAID 1) system disks (and an optional third disk used as a hot spare)

Note: If DIVA is used to archive complex objects like DPX or Avid sequences, it is advisable to ask for a specific recommendation based on the estimated traffic (in terms of size and number of objects to be archived per day). In general, if complex objects need to be archived, Telestream recommends using a minimum of two 2 TB HDD with 15,000 RPM. This recommendation is also valid for the Backup Manager or an Actor if an Actor server is used for the Backup Manager.

- Redundant power supply and fans
- Dual on-board GbE or 10GbE interfaces (copper RJ45 interfaces)
- Dual port 16Gb Fiber Channel HBA (Host Bus Adapter) for Tape library control (only if a tape library is used and requires the use of a dedicated FC connection)
- Windows Server
  - See *Operating System Compatibility*

See the *Minimum Partition Sizing for a Server Hosting Databases* table.

Manager Cluster

The following server platform (two identical servers) is the minimum requirement recommended for the installation of the Manager software in a cluster environment. A Manager Cluster is only valid in a Windows-based environment.

- Rack mount chassis
- One Intel® Xeon® Silver 4214R 2.4Ghz 12C/24T or equivalent (optional second processor possible)
- 64GB RAM
- Two 2TB HDD 15,000 RPM or SSD (configured in RAID 1) system disks (and an optional third disk used as a hot spare)

Note: If you use DIVA to archive complex objects like DPX or Avid sequences, it is advisable to ask for a specific recommendation based on the estimated traffic (in terms of size and number of objects to be archived per day). In general, if complex objects need to be archived, Telestream recommends using a minimum of two 2TB HDD with 15,000 RPM. This recommendation is also valid for the Backup Manager or an Actor if an Actor server is used for the Backup Manager.

- Redundant power supply and fans
- Two on-board GbE or 10GbE interfaces (copper RJ45 interfaces)
- Dual port SAS or FC HBA (for the shared disk bay connection)

Note: A shared disk bay with dual RAID controller (SAS or FC Interface) and seven 300 GB SAS disks connected to both servers to accommodate the database.

- Dual port 16Gb Fiber Channel HBA for Tape library control (only if a tape library is used and requires the use of a dedicated FC connection)
- Windows Server
  - See *Operating System Compatibility*

See the *Minimum Partition Sizing for a Server Hosting Databases* table.

Actor

The following is the minimum server configuration recommended for the installation of the Actor software:

- Rack mount chassis
- One Intel® Xeon® Silver 4214R 2.4Ghz 12C/24T or equivalent
- 32GB RAM
- Two 300 GB HDD 15,000 RPM or SSD (configured in RAID1) system disks (optional third disk can be used as a hot spare)
- RAID5 disk space for cache, at least five 1.8TB disks
- Optional RAID5 disk space for Nearline storage (DIVAgrid Architecture)

Note: The DIVA grid Architecture consists of aggregating direct attached disks from multiple Actors into one single DIVA array. The Manager distributes content it needs to store on this array across the different Actors composing the array. This provides a cost-effective, high performance solution for Nearline disk storage and is ideal in workflows requiring temporary disk storage to enable the creation of multiple object instances and transcoding.

- Redundant power supply and fans
- Two on-board GbE interfaces (copper RJ45 interfaces)
- Dual 10 GbE ports interface
- Dual port Fiber Channel HBA for the connection to an external shared SAN disk (optional)
- Dual port Fiber Channel HBA for the connection to the Tape drives (Qlogic recommended)
- Windows Server
  - See *Operating System Compatibility*

See the *Minimum Partition Sizing for a Server Hosting Databases* table.

Actor and Manager (Single Computer)

The following is the minimum server configuration recommended for the installation of the Actor and Manager software on a single computer. This configuration should be limited to entry level systems for performances reasons:

- Rack mount chassis
- One Intel® Xeon® Silver 4214R 2.4Ghz 12C/24T or equivalent (optional second processor possible)
- 64GB RAM
- Two 2 TB HDD 15,000 RPM or SSD (configured in RAID 1) system disks (and an optional third disk used as a hot spare)

Note: If DIVA is used to archive complex objects like DPX or Avid sequences, it is advisable to ask for a specific recommendation based on the estimated traffic (in terms of size and number of objects to be archived per day). In general, if complex objects need to be archived, Telestream recommends using a minimum of two 900 GB HDD with 15,000 RPM. This recommendation is also valid for the Backup Manager or an Actor if an Actor server is used for the Backup Manager.

- RAID5 disk space—at least five 2TB disks, Redundant power supply, and fans
- Two on-board GbE interfaces
- Two 10 GbE interface (optional)
- Dual port Fiber Channel HBA for the connection to an external shared SAN disk (optional)
- Dual port 16Gb Fiber Channel HBA for the connection to Tape drives (Qlogic recommended)
- Windows Server
  - See *Operating System Compatibility*

See the *Minimum Partition Sizing for a Server Hosting Databases* table.

DIVA Connect 4.x

The DIVA Connect configuration provides a consolidated view of a distributed DIVA system. The following is the minimum server configuration recommended for the installation of DIVA Connect 4.x:

- Rack mount chassis
- One Intel® Xeon® Silver 4214R 2.4Ghz 12C/24T or equivalent
- 64GB RAM
- Two 2 TB HDD 15,000 RPM or SSD (configured in RAID 1) system disks (and an optional third disk used as a hot spare)
- One 10 GbE interfaces (optional)

- Windows Server
  - See *Operating System Compatibility*

See the DIVA Connect documentation on the Telestream DIVA Support Portal for detailed DIVA Connect information.

General Storage Requirements

The following table describes the main storage characteristics of the various components:

Server	CPU	System Disks	Cache and Disk	Data Disks
Manager Cluster[1]	1	RAID1	No	No
Manager	1	RAID1	No	No
Actor	1	RAID1	RAID5	Nearline (optional)
Actor and Manager	1	RAID1	RAID5	Nearline (optional)
Actor and Transcoder	2	RAID1	RAID5	Transcoding area plus optional Nearline disk.
DIVA Connect	1	RAID1	No	No

1. Manager Cluster is valid only in a Windows-based environment.

Minimum Partition Sizing for a Server Hosting Databases

The following are the minimum partition sizes for the Manager computer. These minimum sizes are also valid for a Manager Backup configuration or an Actor used as a Backup Manager.

Different sizing requirements may apply depending on your DIVA production workflow. For example, extensive use of Metadata, generation of proxies, the use of Complex Objects have an impact on the volume of data stored in the databases used by DIVA. ContactTelestream Support if you have questions specific to your workflow and Partitions Sizing.

The Postgres database has these minimum requirements:

- Windows 2016 or higher
- 16 GB of RAM

Calculating Backups Retention Space Requirement for the H: Database Backup Folder

To calculate the storage space needed into `H:\divaback\Backups`, you can apply the following rule:

```
Backups Space Retention =
Number of days to keep database backups
x
(
  full and incremental backup size for one day of Postgres backups
+ full and incremental backup size for one day of MongoDB backups
+ full and incremental backup size for one day of Elasticsearch backups
)
```

Calculating Backups Restore Space Requirement for the H: Database Backup Folder

To calculate the storage space needed into `H:\divaback\Restore`, in order to restore the database backups of the three databases that DIVA relies on, you can apply the following rule:

```
Backups Restore Space =
  Unzipped size of Postgres DB located in E:\pg_data
+ Unzipped size of MongoDB located in M:\MongoData\MongoInstance_0
+ Unzipped size of Elasticsearch indexes located in S:\ElasticData\nodes\0
```

Windows Partition	Minimum Size	Present on Server	Comments
C:\	200 GB	Mandatory	DIVA Software including Operating System, DIVA binaries, DIVA operational log files and third-party DB engine binaries used by DIVA
E:\	100 GB	Mandatory	Database Data Files[1]
F:\	Windows: 50 GB (exactly)	Mandatory	Database Archive Logs
H:\	300 GB	Mandatory	Database Backup Folder
M:\	100 GB	Mandatory	MongoDB Metadata Database - used to store normal Object Metadata as well as Complex Objects Metadata.[1]
P:\	n/a	Optional	Proxy files storage. Sizing of the Proxy partition depends on the number of source clips planned for archiving that will be transcoded to generate proxies. Contact Telestream Support for more details.
S:\	500 GB	Mandatory	Elasticsearch Database[1]
T:\	500 GB	Optional	Attachments files storage. Sizing of the Attachments partition depends on the amount of attachment metadatas that will be linked to objects archived into DIVA.

1• To improve performance, the partition should have at least 50% of free space to avoid database page caching.

Caution: All partitions must be protected by RAID.

Supported Libraries and Control Software

The following table identifies Managed Storage and associated control software supported by DIVA LibAttach is valid only in a Windows-based environment.

Manufacturer	Library	Control Software	Robot Manager Module
Alto	Disk Library	Alto Protocol	ALTO_Robot.dll
ALTO	ALTO-III ALTO-ARX	ALTO Manager	Robot_ALTO
Dell	TL4000/ TL2000[1] ML6010[2]	Direct SCSI/FC	Robot_SCSI
HP	ESL-G3-700 ESL-G3-1500 ESL-G3-3000 ESL-G3-5000 MSL-2024 MSL-2024 G4 MSL-2048 MSL-3040 MSL-6480 1/8 G2 Autoloader 1/8 G3 Autoloader	Direct SCSI/FC	Robot_SCSI
IBM	TS3100 TS3200 TS3310 TS3500 TS4300 TS4500	Direct SCSI/FC	Robot_SCSI
MagStor	M2000	Direct SCSI/FC	Robot_SCSI

Manufacturer	Library	Control Software	Robot Manager Module
Oracle StorageTek	SL8500[3] SL500[4] SL150 9310 5500 L180 L7000 SL24 L80 L40 L20 L1400M	LibAttach 1.4.2[5] Direct SCSI/FC Direct SCSI/FC ACSLS ACSLS ACSLS or Direct SCSI/FC ACSLS LibAttach 1.4.2[5] Direct SCSI/FC Direct SCSI/FC Direct SCSI/FC Direct SCSI/FC	Robot_ACSLS Robot_SCSI Robot_SCSI Robot_ACSLS Robot_ACSLS Robot_ACSLS or Robot_SCSI Robot_ACSLS Robot_ACSLS Robot_ACSLS Robot_ACSLS Robot_ACSLS Robot_ACSLS
Oracle StorageTek	SL4000	LibAttach 1.4.25 Direct SCSI/FC	Robot_ACSLS Robot_SCSI
Oracle StorageTek	SL3000	LibAttach 1.4.25 Direct SCSI/FC	Robot_ACSLS Robot_SCSI
Overland Tandberg	NEO XL Series	Direct SCSI/ SAS	Robot_SCSI
Qualstar	TLS-5000 RLS-85210 Q series	Direct SCSI/FC Direct SCSI/FC Direct SCSI/FC	Robot_SCSI Robot_SCSI Robot_SCSI

Manufacturer	Library	Control Software	Robot Manager Module
Quantum (ADIC)	Scalar i6000	Direct SCSI/FC	Robot_SCSI
	Scalar i500	Direct SCSI/FC	Robot_SCSI
	Scalar i40/i80	Direct SCSI/FC	Robot_SCSI
	Scalar i3/i6/i7	Direct SCSI/FC	Robot_SCSI
	Scalar 100	Scalar DLC or Direct SCSI/FC	Robot_ADIC or Robot_SCSI
	Scalar 1000	Scalar DLC or Direct SCSI/FC	Robot_ADIC or Robot_SCSI
	Scalar 10000	Scalar DLC or Direct SCSI/FC	Robot_ADIC or Robot_SCSI
	Scalar 12000	Scalar DLC or Direct SCSI/FC	Robot_ADIC or Robot_SCSI
	Scalar i2000[6]	Scalar DLC or Direct SCSI/FC	Robot_ADIC or Robot_SCSI
Sony Petasite	S60	PSC 5.00	Robot_Sony
Sony ODA	ODS-L10	Core Robot Manager	Robot_SCSI
	ODS-L30M	Core Robot Manager	Robot_SCSI
	ODS-L60E	Core Robot Manager	Robot_SCSI
	ODS-L100E	Core Robot Manager	Robot_SCSI
Spectralogic	T-Finity	Direct SCSI/FC	Robot_SCSI
	T950	Direct SCSI/FC	Robot_SCSI
	T680, T380, T200	Direct SCSI/FC	Robot_SCSI
	T120	Direct SCSI/FC	Robot_SCSI
	T50e	Direct SCSI/FC	Robot_SCSI

1. The Dell TL2000 is an IBM TS3100 library.
2. The Dell ML6010 is an AIDC i500 library.
3. Operational upon robot failure when configured with multiple LSMs and one robot per LSM.
4. The SL500 library will be transitioned to End of Life (EOL) soon.

5. DIVA supports only 32-bit LibAttach and not 64-bit.
6. Autoclean is not supported, but the Scalar i2000 with partitioning is supported.

Note: The latest qualified release of ACSLS is 8.5.1.

Disk Archive Corporation ALTO

ALTO is an offline, cold storage archive; a secure and convenient alternative to data tape, optical disk, and cloud for Petabyte sized volumes of valuable media assets. ALTO uses data file replication to create multiple non-segmented replicas of files on removable media. ALTO systems can be distributed between on-premises and other geographically separated locations. Disks can be bar-coded and externalized to vault storage for air-gap security providing a copy of last resort for disaster recovery.

DIVA supports ALTO storage in two different ways:

- With Virtual File System (VFS), in which case multiple Alto disks are combined and presented by VFS as a Virtual Disk. From the DIVA Web App the storage appears as a DIVA Array.

Direct API integration, in which case Alto is considered as a removable storage system like tape libraries or Sony ODA. DIVA tracks and exposes the content stored on each disk and groups can be created as with tapes or ODA.

Supported Drives

The following drives are supported by DIVA.

Manufacturer	Drive Model
HP	LTO-3, LTO-4, LTO-5, LTO-6, LTO-7, LTO-8, LTO-9
IBM	LTO-1, LTO-2, LTO-3, LTO-4, LTO-5, LTO-6, LTO-7, LTO-8, LTO-9, LTO-10 **Note:** When a virgin LTO-9 tape is mounted into a drive for the first time, it requires an initialization that may take between 30 minutes and 2 hours. The DIVA positioning step therefore takes between 30 minutes and 2 hours. Jaguar[1] TS1120, TS1140, TS1150, TS1155, TS1160, TS1170
Oracle StorageTek	Titanium 10000-A, 10000-B, 10000-C, 10000-D 9840A, 9840B, 9840C, 9840D, 9940A, 9940B
Sony (Optical)	ODS-D55U, ODS-D77F, ODS-280F, ODS-280U[2], ODS-D380F

1. Encryption hasn't been qualified with all these Jaguar drives.
2. The ODS-280U has not been qualified for use with DIVA.

Sony ODA Blu-ray Optical Drives are supported in DIVA on Windows only. To view the drives as a Tape Group Drive and Cartridge (having UDF format) in the DIVA Web App, browse to *Resource Management* > *Drives*.

The drives must be configured using the Optical Disk Archive Utility before configuring DIVA on the system.

The Windows Device Manager will display the drives as an Unknown Device because there are no drivers available for them. Several configuration files must be modified to include these drives in the DIVA System. See the DIVA Installation and Configuration Guide for detailed information.

The details of these drives are as follows:

- DIVA has only been tested with the ODS-280F Fiber Channel type. These drives are twice as fast as the Gen1 drives. The ODS-280U has not been qualified for use with DIVA.
- The cartridge available for the ODC3300R WORM drive has a 3.3 TB capacity.
- Gen2 drives can read content written on Gen1 media with Gen1 drives. DIVA does not support the READ-ONLY media drive compatibility. Telestream recommends isolating Gen1 media from Gen2 media in the configuration (no cross-generation compatibility), and there must be at least one Gen1 drive in a library containing Gen1 cartridges.
- Sony ODA Gen 3 is supported. The drive type is ODS-D380F and uses the following new cartridge:

  –Cartridge Type:

  ODC5500R

  –Capacity

  5.5 TB

  –Drive Type

  WORM

Note: The drive is still R/W compatible with ODC3300R and read-only compatible with older cartridge types.

Supported Disks

DIVA supports the following disks:

- Direct Connection using a local path
- For example drive letters in Windows such as M:\managed_disk.
- CIFS Connection
- FTP Connection
- Harmonic MediaGrid
- Tiger MetaSan

- Quantum StoreNext Filesystem
- IBM GPFS (General Purpose Filesystem)
- Huawei OceanStore 9000
- Dell PowerScale (Isilon)

Cache Disk
This disk is only used for caching, Tape Group to Tape Group copying, Tape Group spanning, and Tape Group repacking operations. The cache does not have to be on a RAID protected disk, but it is recommended.

The size of this disk must be at least the size of the largest object. The cache disk can be a local disk, SAN, NFS, or SMB connected. Telestream recommends setting the cache disk block size to at least 64KB.

Storage or Storage and Nearline
The disk will be used for storing objects and Nearline operations. The storage size depends on the amount of space desired to store objects. This disk must be RAID protected.

A storage disk can also be used for cache. The storage disk can be a local disk, SAN, NFS, or SMB connected. Telestream recommends setting the storage disk block size to at least 64KB.

Supported Object Storage

The following table identifies object storage accounts supported by DIVA.

Object Storage Type	Protocol	Supported Storage Classes	AXF Reference-File	Auto-Indexing	AXF Discovery
Alibaba OSS	S3	Standard, IA (Infrequent Access), Archive, ColdArchive	Yes	Yes	Yes
AWS S3	S3	Standard, Intelligent-Tiering, Standard-IA, One Zone-IA, Glacier, Glacier-Deep-Archive, Glacier-Instant-Retrieval	Yes	Yes	Yes
Azure Blob Storage	Blob REST API	Standard, Hot, Cool, Cold, Archive	Yes	Yes	Yes
Ceph	S3	Standard	Currently Not Tested	Yes	Yes

Object Storage Type	Protocol	Supported Storage Classes	AXF Reference-File	Auto-Indexing	AXF Discovery
Cloudian	S3	Standard, Archive	Yes	Yes	Yes
EMC ECS	Swift / S3	Standard	Yes	Yes	Yes
Geyser cold archive[1]	S3	Glacier	No	Yes	No
Google Cloud Storage	JSON API	Standard, Nearline, Coldline, Archive	Yes	Yes	Yes
HCP (Hitachi Content Platform)	S3	Standard	Yes	Yes	Yes
IBM Storage Deep Archive (IBM-SDA) system	S3	Glacier Flexible Retrieval	AXF_RF_1.1 is not supported on IBM-SDA due to storage-class constraints on the platform.	No[2]	No[2]
Isilon OneFS (8.2 and later)	S3	Standard	Yes	Yes	Yes
NetApp StorageGRID	S3	Standard	Currently Not Tested	Yes	Yes
ObjectMatrix MaxiStore	S3	Standard	Yes	Not currently tested.	Not currently tested.
Oracle Cloud Storage	OCI	Standard, Archive	Yes	No	No
Quantum ActiveScale	S3	Standard, Glacier (cold storage)	Yes	Yes	Yes
Scality	S3	Standard	Not Supported Yet	Yes	Yes
Tata Cloud Storage	S3	Standard	Yes	Yes	Yes
Backblaze	S3	Standard	Yes	No	Yes
Wasabi	S3	Standard	Yes	Yes	Yes

1. Geyser cold archive used as managed storage requires the AXF metadata and the data to be written in the same bucket. Geyser automatically moves all the files to GLACIER after 1 or 2 days. All the AXF metadata will require restoration before they can be accessible. So the only supported archive format is AXF 1.1.
2. Files archived in IBM-SDA require a Restore that takes many minutes. This isn't compatible with the feature.

Ceph Implementation Notes
The current Ceph implementation can't create a bucket in Ceph storage due to the Ceph current implementation of the S3 protocol; so the bucket must exist before DIVA can write to it. For use as disk (rather than as a server) the user must provide the bucket to use through the `-bucket_name` option in the *Storage Options* field of the corresponding array definition.

There must be two buckets created prior to using Ceph as a Storage Array: one for data and one for metadata; `mybucket` and `mybucket-metadata`, for example. Create those two buckets. Then, in the *Storage Options* field of the *ADD ARRAY* page, specify `-bucket_name=mybucket`.

Configuring HCP (Hitachi Content Platform) for Multi-part Upload

To configure HCP for multi-part upload, do the following:

1. Disable the etag verification. To disable etag verification, browse to *Configuration* > *Resources* > *CLOUD STORAGE CLOUD BUCKETS*. Set the parameter *Additional Checksum Verification* to *None*.
2. In the HCP Management Console, browse to *Namespace* > *Settings* > *Optimization*. Set only the option *Optimized for Cloud Protocols*.

Supported Partial File Restore Formats

Numerous object formats have been tested successfully with the DIVA Partial File Restore operation. Testing with samples provided by the customer is recommended to confirm interoperability. Telestream makes no commitment if variations in the encoding profiles cause issues with the DIVA Partial File Restore feature. All formats support `AUTO_DETECT`.

To access the Partial File Restore settings in the DIVA Web App, browse to *Configuration* > *System Settings* > *Actors* > *Edit Actor* > *Partial Restore Settings*.

For details about each implementation, contact Telestream Support.

Notes: All formats are supported on Windows.

AVI (Audio Video Interleaved)

The applicable wrapper format is a single AVI file per object, and may contain audio tracks. This Partial File Restore is supported by `AUTO_DETECT` only.

Adobe Premiere

Supports DVSD and PCM video and audio essences.

Harris Corporation Nexio 3600

Supports DVSD and PCM video and audio essences.

AVI with Separate WAV Files

The applicable file format is a single AVI file with separate WAV files. The AVI file contains a single video track, and the WAV files contain a PCM sample format. This Partial File Restore is supported by `VIDEO_FORMAT_AVI` and `AUTO_DETECT` in Windows only.

Manufacturer	Product	Release	Supported Video and Audio Essence
Insipiens	AVI Writer	1.0.0.0	MPEG2 LGOP
Matrox	MQSink Filter Format 4	2.0.0.271	DV25, DV50
	MQSink Filter Format 6	2.0.0.271	Dv25, DV50, DVSD
	MQSink Filter for MPEG Format 4	2.0.0.270, 2.0.0.271	MPEG2 LGOP, MPEG2 I-Frame[1]
	DSX AVI File Format 6	1.0.0.362, 1.0.0.401	MPEG2 LGOP[2], M701 HD

1. MPEG2 I-Frame supported on 2.0.0.271 only.
2. MPEG2 LGOP supported on 1.0.0.362 only.

AVI with FFV1 or FFVH

AVI clips containing FFV1 or FFVH video essence are supported. Use these formats for video preservation purposes. These codecs are lossless and generate intra-coded frame only (no GOP).

Avid Interplay (Avid PAM, Avid MediaCentral Production) Compatibility

Avid Interplay 2023.007 and Older 3.8 was used to develop and test this feature in DIVA 9.4. Any Interplay with IPWS running should be supported.

The following identifies current Avid Interplay release compatibility for DIVA:

The following are supported for Avid connectivity and Interplay:

- AMC [2.1]: Interplay 2.2 or later: DIVA Core 8.0 or later
- AWD [1.0]: Interplay 3.6 or later: DIVA Core 8.3 or later
- AWD [1.0]: Interplay 3.8 or later: DIVA Core 9.4 or later

BWAV (Broadcast WAV)

BWAV (Broadcast WAV) is a regular WAV file that includes additional information—Bext and iXML (optional). Bext is a broadcast extension containing metadata, including TimeReference (timecode reference in milliseconds). DIVA uses Bext as a timecode reference for Partial File Restore.

BWAV may also contain and optional metadata called iXML. The metadata iXML contains an additional `TimeReference` and a frame rate. When iXML and Bext are both present,

DIVA uses iXML because it contains an accurate frame rate (useful to convert milliseconds to and from a timecode). Without iXML, the millisecond to timecode conversion is only an approximation.

DIF with Separate WAV Files, and DV with Separate Audio, or Self-contained DV Types

The applicable file format is a single DIF or DV file with separate WAV files, and DV with separate audio or self-contained DV types. WAV files contain the PCM sample format. This Partial File Restore supports Avid Liquid and Omneon Spectrum with DV25 and WAV PCM using either `AUTO_DETECT` or `VIDEO_FORMAT_OMNEON`.

GXF (General Exchange Format)

GXF Partial File Restore is supported in the following formats:

Type	Formats
Aurora Edit	MPEG2 D10 MPEG2 I-frame MPEG2 D10 MPEG2 LGOP
BitScream	DV25
K2 Media System	MPEG2 D10 MPEG2 I-frame MPEG2 D10 MPEG2 LGOP
K2 Media System / Summit	AVC-I DVCPRO XDCAM HD
Mseries	MPEG2 D10 MPEG2 I-frame MPEG2 LGOP
NewsEdit	DV25 DV50 MPEG2 D10 MPEG2 I-frame
PDR	MJPEG
Profile XP	DV25 DV50 MPEG2 D10 MPEG2 I-frame

LXF (Leitch Exchange Format)

LXF (Leitch Exchange Format) is well defined, and Partial File Restore supports specific releases of the file format regardless of the source of the clip (Nexio, Flip Factory, and so on). The supported job format is either `AUTO_DETECT` or `VIDEO_FORMAT_LEITCH`.

The LXF Release 0 supported video and audio essences are:

- MPEG2 I-frame Standard Definition (SD)
- MPEG2 LGOP SD
- DV
- DVCPRO
- DVCPRO50

The LXF Release 1 supported video and audio essences are:

- MPEG2 4:2:2 (1080i and SD only)
- DV SD
- DVCPRO SD
- DVCPRO50 SD
- DVCPRO HD

MXF (Material Exchange Format)

MXF standard specification (SMPTE377M) defines multiple operational patterns. Only OP1a is supported. MXF Partial File Restore is supported on Windows in the following video essence formats:

- DV25, DV50, DV100
- DVCPRO (SD and HD)
- DNxHD
- MPEG2 D10[1]
- MPEG2 LGOP (SD and HD)
- SONY XDCAM HD
- H.264/MPEG-4 AVC
- AVC-Intra (subset of H.264)
- SONY XACV (subset of H264, HD and 4K)
- DNxHR (new codec from AVID for high definition)

Note: Although these video formats are supported, qualifications are still required because there might be many variations of MXF wrapper for a given video essence format.

For Windows, BMX is the default library. You can use MOG SDK only for temporary compatibility.

1. In the DIVA Web App, browse to *Configuration* > *System Settings* > *Actors* > *Edit Actors* > *Partial Restore Settings*.

1. MXF generated by Seachange are supported as standalone MXF files (no .pd or .vix file).

2. Click the down arrow for *MXF*.
3. Under the settings, change the *Use BMX Library* parameter to *off* using the slider.

QuickTime/MP4

QuickTime is a file wrapper and may contain multiple tracks of various types (audio, video, and so on). QuickTime self-contained clips are supported using `OMNEON` and `AUTO_DETECT`.

QuickTime Partial File Restore is supported by Windows Actors only.

Partial File Restore support for QuickTime with MPEG2 LGOP (XDCAM HD 422 with sixteen tracks of audio) is supported as follows, regardless of the type of video or audio content:

- The number of tracks per clip is currently limited to thirty.
- Tracks must have the same duration and start time.
- QuickTime standards support advanced edit list features that are not supported by Partial File Restore.
- Each track must be composed of a single valid edit list entry that may or may not start from zero.

Some content types are not supported, including some video and audio combinations. The following table identifies supported types:

Supported Track Types	Cardinality
Video	One video track per clip
Video	Two video tracks per clip[1]
Audio	Zero or multiple tracks per clip
Closed Caption[2]	One track per clip
Timecode with a single entry	One track per clip
Timecode with multiple entries	One track per clip

1. When a QuickTime clip contains two video tracks, the tracks must be synchronized and have the same duration and start from 00:00:00:00.
2. Empty Closed Caption tracks are supported.

QuickTime Self-Contained Clips

The format of the video essence is not a criterion in QuickTime Self-Contained clips. In theory, the Partial File Restore for QuickTime should be able to support any type of video essence. Partial File Restore is not recommended for the following variations in the video essence format:

- Where the video quality supports 420 or 422
- Where the number of pixels is not a factor

- Where the clip is bit rate independent

The following table describes what has already been tested and does not guarantee that Partial File Restore will support it. The only supported audio formats are AIFF and WAV (LPCM).

Manufacturer	Product	Release	Supported Video Essence
Dalet			DVCPRO100
Omneon	Spectrum	5.x	DV25, DVCPRO, DVCPRO50, DVCPRO HD, MPEG2 D10, MPEG2 I-Frame, MPEG2 LGOP, MPEG2 LGOP HD
Oracle	SAMMAsolo	Unknown	DV25

MP4 Clips

MP4 wrapper is also known as MPEG-4 Part 14. This format has been developed based on QuickTime specifications. All the formats currently supported by the QuickTime partial restore are also supported with MP4.

WAV (Waveform Audio File Format)

WAV (Waveform Audio File Format) is a container format based on the RIFF (Resource Interchange File Format) specification. Most real-world WAV files store uncompressed PCM audio.

Supported Unmanaged Storage Repositories

DIVA transfers content to and from external equipment such as broadcast video servers, video editing systems, and generic computer systems. The following are the certified interfaces and protocols supported by DIVA.

Note: In DIVA versions through DIVA 8.1, *Unmanaged Storage Repositories* were called *Source Destination*.

Unmanaged Storage Repositories

The following table identifies the source and target servers supported by DIVA.

Manufacturer	Server Model	Protocol	Unicode Support
Avid Interplay	ISIS or NEXIS	AVID_DHM AVID_DET AVID_AMC AVID_DIRECT	Yes, currently for AMC only.
DataExpedition	Expedat 1.15, Expedat 1.16	MTP	Yes
Dell PowerScale	Isilon	SMB	Yes
Disk (Local)	Internal disk	Direct	Yes
Disk (Network)	Shared File System, SAN, NAS	CIFS	Yes
EVS	Little Big Server, XT3	FTP	No
Grass Valley	NewsEdit, NewsFTP (Aurora Edit HD), UIM Gateway with MXF[1], K2[2]	FTP	Only K2 is supported.
Leitch	VR Series[3], Nexio 3600	FTP	Only Nexio 3600 is supported.
Omneon	Spectrum 4.6 SR2 Spectrum 4.7 SR2 Spectrum 5.0 SR1	FTP and AVI player FTP and AVI Player FTP and AVI Player	Only Spectrum 5.0 SR1 is supported.
Omneon	Spectrum 6.1 with System Manager 5.14	FTP Only	Yes
Omneon	MediaGrid 1.1	Mapped drive using MediaGrid file system drivers	Yes
Quantel	SQserver regional server with ISA gateway[4]	FTP	No
Sony	News Base Hyper Agent	FTP	No
Various (UNIX, Windows, Mac)	Any standard FTP server (RFC-959) Secure FTP server V3 (limited support)	FTP SFTP	No No

1. UIM Gateway with MXF is supported for release 2.0.6.3.

2. GXF and MXF formats are supported.
3. Supported only using WanStreamer or ArchiveStreamer.

4.SQserver regional server with ISA gateway

The following table identifies FTP servers supporting FTP_STANDARD.

Manufacturer	Product Name	Core Actor Qualified	Unicode Support	WFM Qualified	OTU Qualified
Microsoft	IIS	Yes[1]	No	Yes[2]	Yes
FileZilla	FileZilla FTP Server	Yes	Yes	No	Yes
Gene6	Gene6 FTP Servers	Yes	Yes	No	No

1. Actor supports IIS with UNIX-like listing type configured.
2. WFM supports IIS with DOS-like listing type configured.

Supported Tape Formats

DIVA tape scanning supports LTFS-formatted tapes (version 2.4.0 or later). LTFS tapes are supported by LTO-5 (and later) drives and some recent IBM 3592 drives.

DIVA tape scanning doesn't support the following:

- LEGACY, AXF and LTFS AXF tapes
- Simulated tapes
- Emulated tapes of SONY ODA and ALTO disk archive
- FlashNet LTFS tapes
- Kumulate LTFS tapes

Supported Transcoders

DIVA supports the use of Vantage for performing transcoding operations. The Vantage integration uses the Vantage REST API to submit and monitor tasks. This provides error reporting for jobs that fail.

The following table lists the DIVA version and the qualified versions of Vantage:

DIVA Version	Vantage Version
DIVA 7.1	4.1
DIVA 7.2	6.2
DIVA 7.3	6.3
DIVA 7.4	6.3
DIVA 7.5	7.1

DIVA Version	Vantage Version
DIVA 7.6	7.1
DIVA 7.7	8.1
DIVA 8.0	8.1
DIVA 8.1	8.1
DIVA 8.2	8.1
DIVA 8.3	8.1
DIVA 9.0	8.1
DIVA 9.1	8.1
DIVA 9.2	8.1
DIVA 9.3	8.1
DIVA 9.4	8.1, 8.2
DIVA 9.5	8.1, 8.2
DIVA 9.6	8.1, 8.2, 8.3
DIVA 9.7	8.1, 8.2, 8.3
DIVA 9.8	8.1, 8.2, 8.3

Supported Third-Party Components

DIVA 9.6 supports the third-party components listed in the following table.

Third-Party Component	Version Supported by DIVA 9.6
Elasticsearch	7.17.24
Erlang	27.3.4.2
Java JDK	openjdk version 1.8.0_462-462 OpenJDK Runtime Environment (build 1.8.0_462-462-b08) DIVA uses the OpenLogic build of OpenJDK 8
MongoDB	8.0.12
Postgres	17.5
RabbitMQ	4.1.2
Tika	3.2.2

DIVA 9.7 and 9.8 support the third-party components listed in the following table.

Third-Party Component	Version Supported by DIVA 9.7 and DIVA 9.8
Elasticsearch	DIVA 9.7: 7.17.24 DIVA 9.8: 9.2.3
Erlang	27.3.4.2
Java JDK	openjdk version 1.8.0_462-462 OpenJDK Runtime Environment (build 1.8.0_462-462-b08) DIVA uses the OpenLogic build of OpenJDK 8
MongoDB	8.0.17
.NET	9.0.310
Postgres	17.7.2
RabbitMQ	4.1.2
Tika	3.2.2

Supported Avid Environments

DIVA supports Avid Connectivity and MediaCentral Asset Management DIVA Connector version 4.6.0.

For detailed information see *The AVID Connectivity and Avid for DIVA Applications* in the *DIVA User Guide*.

Avid Interplay

AVID Interplay is an unmanaged server that directly restores a master clip or a sequence to AVID Interplay. You can use Avid Interplay, for example to restore clips or sequences that are not in referenced by the Avid archive engine database.

Avid MAM, PAM, and Web Services

DIVA supports Avid MAM, Avid PAM, and Web Services.

MTE

DIVA supports MTE to allow proxies to be generated from Avid Master Clips and Sequences. Install MTE on any system, and add a configuration in Workflow Service Engine (WFS) such that an MTE Engine is used when generating proxies for Avid content, and that Vantage is used for all other proxy generation.

MediaCentral Compatibility

The MediaCentral | Asset Management DIVA Connector version 4.6.0 is now tested and qualified with DIVA. This means DIVA and this DIVA Connector release can be updated if it is not release 4.6.0, and then all the releases of MediaCentral listed can be supported. This new connector release can be used in the following MediaCentral | Asset Management systems:

MC | AM Release Date	AM Build Number
2019.6	7.2
2019.9	7.3
2020.4	7.4
2020.9	7.5
2021.3	7.6
2021.7	7.7
2021.11	8.0
2022.3	8.0.1
2022.12	8.1
2023.7	8.1 and above