



DATA MANAGEMENT



Compatibility Guide

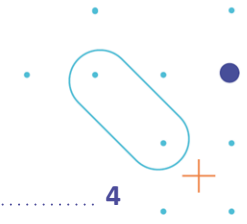
Miria 4.1

Publication Date: November 10, 2023

POWERFUL DATA PROTECTION AND DATA MANAGEMENT SOLUTIONS

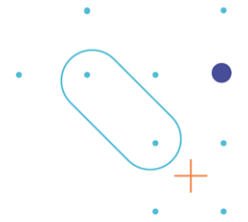


Contents



General Information	4
Miria Server	5
Miria Agent / Data Mover	7
Miria Administration Console	9
Miria Web Connector	10
Storage Devices	11
FastScan Compatibilities	13
FastScan Lustre Server Operating System	14
Object Storage Devices	15
Supported File Systems	18
Media Manager (AMM)	19
Supported Libraries	20
Supported Drives	24
Supported Tape Formats	25
Library & Drive Limitations	25
Drives	25
Libraries	25
Devices	26
Other limitations	26
Other Media Manager Supported:	26

ACSL Support	26
Transcoding for Video Asset Preview	27
Partial File Retrieval (PFR)	28
Containers Supported by the PFR Option	28
QuickTime (QT)	28
MXF	28
Metadata import	29
Application Integration and APIs	30
Application Plugin	30
API Platform	30
Language Availability	31
Network and Protocols	32
Identity Providers	33
Specific Limitations	34



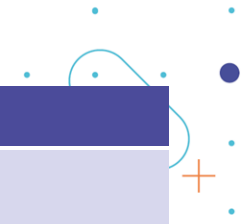
General Information

Presentation:

- New information in this document is shown in **blue**.
- End of Life components are shown in **red**. They are still supported in the current version but will not be supported in the following version.
- Legacy components that are no longer widely used are marked with icon .

Operating System	Version	Architecture
Linux ¹	Red Hat Enterprise Linux 7	x86-64
	Red Hat Enterprise Linux 8	
	Red Hat Enterprise Linux 9	
	CentOS 7	
	Debian 10	
	Debian 11	
	Ubuntu 20.04 LTS	
	Ubuntu 22.04 LTS	
	Alma Linux 8	
	Rocky Linux 8	
	Oracle Linux 8	
	Alma Linux 9	
	Rocky Linux 9	

¹Security-Enhanced Linux (SELinux) in "Enforcing" mode is supported.

Operating System	Version	Architecture
Microsoft Windows	Server 2012 R2	x86-64
	Server 2016	
	Server 2019	
	Server 2022	

Miria Agent / Data Mover

Operating System	Version	Architecture
Linux ¹	Red Hat Enterprise Linux 7	x86-64 & ARM64
	Red Hat Enterprise Linux 8	
	Red Hat Enterprise Linux 9	
	CentOS 7	
	EulerOS v2.0	
	Debian 10	x86-64
	Debian 11	x86-64 & ARM64
	Ubuntu 20.04 LTS	x86-64
	Ubuntu 22.04 LTS	
	Alma Linux 8	
	Rocky Linux 8	
	Oracle Linux 8	
	Alma Linux 9	x86-64 & ARM64
	Rocky Linux 9	
macOS	macOS Big Sur (11)	x86-64 & ARM64 ²
	macOS Monterey (12)	

¹Security-Enhanced Linux (SELinux) in "Enforcing" mode is supported.

²Requires Rosetta 2 Emulation




Operating System	Version	Architecture
Microsoft Windows	Server 2012 R2	x86-64
	Server 2016	
	Server 2019	
	Server 2022	



Miria Administration Console

Operating System	Version	Architecture
Microsoft Windows	Server 2012 R2	x86-64
	Server 2016	
	Server 2019	
	Server 2022	
	Windows 8	
	Windows 10	
	Windows 11	

The Administration Console is marked end-of-life. It is strongly recommended to use the Web interface.

Miria Web Connector

Operating System	Version	Architecture
Linux	Red Hat Enterprise Linux 8	x86-64
	Red Hat Enterprise Linux 9	
	Debian 10	
	Debian 11	
	Ubuntu 20.04 LTS	
	Ubuntu 22.04 LTS	
	Alma Linux8	
	Rocky Linux 8	
	Oracle Linux 8	
	Alma Linux 9	
	Rocky Linux 9	
macOS ¹	macOS Catalina (10.15)	x86-64 & ARM64 ²
	macOS Big Sur (11)	
	macOS Monterey (12)	
Microsoft Windows	Server 2016	x86-64
	Server 2019	
	Windows 10	
	Windows 11	

¹If Miria Server is only accessible in HTTPS, WebConnector is not compatible with Safari client-side, because of a Safari limitation.

²Requires Rosetta 2 Emulation

Storage Devices

Vendor	Product	Status	Primary Storage	Secondary Storage	Snapstor Storage	FastScan & Snapshot Connector
(Any)	On-premises NAS offering CIFS / NFS access ¹		√	√		
Avid	Unity MediaNetwork / Nexis ²		√	√		
DDN	GridScaler		√	√	√	√
	ExaScaler		√	√		√
	IntelliFlash		√	√		√
DELL EMC	Celerra / VNX		√	√		
	Centera ³	L		√		
	Data Domain ⁴ /PowerProtect			√		
	PowerScale/Isilon		√	√	√	√
Exanet	ExaStore Clustered NAS		√	√		
Facilis ⁵	TerraBlock server series		√	√		
FAST LTA	Silent Cube Storage		√	√		
Harmonic	MediaGrid ⁶		√	√		

¹Selecting a CIFS or NFS access is dependent upon the OS used by Miria Agent to access the NAS. Select CIFS for Miria agents running on Windows and NFS for agents running on macOS or Linux/Unix. Public clouds NAS offerings are excluded. Refer to dedicated entries.

²Avid Nexis compatibility guide is taken into account. The gateway can be a Windows or a macOS – not Linux nor Unix. If using this storage with a tape library, only AMM can be used. Refer to the section describing Avid Interplay compatible storage.

³EMC Centera is only supported when the compliance mode is not enabled. No macOS support for the EMC Centera (no API).

⁴Data Domain De-duplication Storage Systems are only supported as storage targets with NFS/CIFS.

⁵Validated with Miria using version 5.0.3.5 running native Facilis file system and AVIDFS emulation.

⁶Miria Agent local mount points only.

Vendor	Product	Status	Primary Storage	Secondary Storage	Snapstor Storage	FastScan & Snapshot Connector
Hitachi	HNAS		√	√		
Hualu	Optical disk library		√	√		
Huawei	OceanStor V5 series		√	√	√	√
	OceanProtect X Series		√	√		
	Optical disk library		√	√		
Incom / HIT	HIT NAS Archive Appliance Series 1035 / 2105 / 3350 / 3560			√		
NetApp	FAS Series		√	√		
Nutanix	Nutanix for Files		√	√		√
Panasas ¹	PanFS		√	√		
Panzura	Panzura Cloud Storage		√	√		
Permabit	Permabit Enterprise Archive		√	√		
	Permabit Cloud Storage		√	√		
Qumulo			√	√	√	√
Sony	Optical Disc Archive (ODA) ²			√		
VAST	VAST Universal Storage ³		√	√		
Weka	WekaFS		√	√		

¹Validated with Miria using PanFS version 4.1.2 to version 10.0. Certified using: CIFS connection from Windows, NFS connection from Linux/Unix/macOS. Now supporting DirectFlow on Linux.

²Note that ODA is supported both on a Windows or Linux Miria controlled platform.

³Not available for NFSv4.

FastScan Compatibilities

Vendor	Product	Versions
DDN	GridScaler	4.x
	ExaScaler	5.1, 5.2.x, 6.0, 6.1, 6.2, Lustre 2.12.5_ddnX, 2.12.6_ddnX, 2.12.8_ddnX, 2.12.9_ddnX , 2.14.0_ddnX
	IntelliFlash	3-11-3-0.21, 3-11-4-0.38
DELL EMC	PowerScale/Isilon	OneFS 7.2, 8.x, 9.0 to 9.3
GPFS ¹		4.x, 5.x
Huawei ²	OceanStor	V5, 6.1
	OceanStor Dorado	6.1
Lustre Community	Open source (Vanilla)	2.12.3, 2.12.4, 2.12.5, 2.12.6, 2.12.7, 2.12.8, 2.14.0
Nutanix	Nutanix for Files	3.5, 4.x
Quantum	Stornext	6.4.1 to 7.0.3
Qumulo		2.8.5 to 5.2.x

¹GPFS on Windows nodes is not supported.

²For the version 6.1, Snapshot Comparison feature of file system must be enabled.



FastScan Lustre Server Operating System

GNU/Linux distributions using RPM:

- RHEL 7.x., 8.x.
- CentOS 7.x.

Server specifications

If you install an FSL server, it is recommended to have:

- 1 CPU with 12 cores.
- 64 GB of memory, mainly for the database.
- 1 GB for the distribution of the product.
- 200 GB of disk space (sufficient to store 1 billion objects in the database).



Object Storage Devices

Vendor	Product	Status	Primary Storage	Secondary Storage	Accelerate	Multipart	Lifecycle	Versioning	Object Lock
Alibaba Cloud	Object Storage Service		√	√		√		√	
Amazon ¹	AWS S3 Storage		√	√	√	√	√	√	√
CEPH	CEPH		√	√		√		√	
Cloudian	HyperStore Object Storage		√	√		√		√	√
Datacore	SWARM		√	√			√	√	√
DataDirect Networks	Web Object Scaler (WOS): REST Interface			√		√			
	Web Object Scaler (WOS): WOS API			√					
Econocom	Econocloud S3		√	√		√		√	
EMC	Elastic Cloud Storage (ECS)		√	√				√	√
Google	Google Cloud Storage		√	√		√	√	√	
HDS ²	HCP Object Storage & Cloud Storage		√	√					

¹The Amazon S3 API is supported but no direct support for Glacier's specific API. The S3 lifecycle feature is used to manage data movement to/from Glacier.

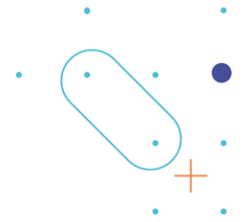
²Certified with HCP version 6.

Vendor	Product	Status	Primary Storage	Secondary Storage	Accelerate	Multipart	Lifecycle	Versioning	Object Lock
Huawei	FusionStorage ¹		√	√		√		√	
	OceanStor 100D		√	√		√		√	
	OceanStor Pacific		√	√		√		√	
IBM	Object Cloud Object Storage		√	√		√		√	
Microsoft	Azure Blob Storage		√	√		√	√	√	
NetApp	StorageGrid2		√	√				√	√
OpenStack	Swift		√	√		√		√	
Quantum	ActiveScale		√	√		√	√	√	√
Scaleway	Object Storage		√	√		√		√	
Scality	RING sproxyd			√					
	RING CDMI	L		√					
	RING S3		√	√		√		√	√
Seagate	Lyve Cloud		√	√		√		√	√
Storj	Decentralized Object Storage		√	√		√			
Vastdata	Object Storage (S3)		√	√		√		√	√ ³
Wasabi	Object Storage		√	√		√		√	√

¹Only S3 protocol is supported.

²Only S3 protocol is supported. Regarding Object Lock, only the Compliance mode is supported.

³Governance mode only.



Miria provides full S3 compatibility with the AWS API. If your S3 object storage is not listed above, Contact Atempo.

Supported File Systems

Operating System	Version
Microsoft Windows ¹	NTFS, ReFS
macOS ²	HFS+, APFS
Linux	Ext2, Ext3, Ext4
	XFS

¹DFS is not supported.

²AFP is not supported.

Media Manager (AMM)

The Media Manager needs to be installed in environments where the archiving target is tape.

It is the platform that enables Miria to access tape libraries and tape devices.

Atempo Media Manager can be installed on the same machine as the Miria agent or on a different machine. It is an option of the Miria agent setup.

Operating System	Version	Architecture
Linux ¹	Red Hat Enterprise Linux 7	x86-64 & ARM64
	Red Hat Enterprise Linux 8	
	Red Hat Enterprise Linux 9	
	CentOS 7	
	Debian 10	x86-64
	Debian 11	x86-64 & ARM64
	Ubuntu 20.04 LTS	x86-64
	Alma Linux 8	
	Rocky Linux 8	
	Oracle Linux 8	
	Alma Linux 9	x86-64 & ARM64
	Rocky Linux 9	
macOS	macOS Big Sur (11)	x86-64 & ARM64 ²
	macOS Monterey (12)	

¹Security-Enhanced Linux (SELinux) in "Enforcing" mode is supported.

²Needs Rosetta 2 Emulation

Operating System	Version	Architecture
Microsoft Windows	Server 2012 R2	x86-64
	Server 2016	
	Server 2019	
	Server 2022	

Supported Libraries

The following libraries are supported by the Media Manager.

BDT:

- MultiStak
- Flexstor
- Flexstor II

DELL:

- Dell ML6000
- Dell 160T
- Dell TL2000/TL4000

FUJITSU:

- Fujitsu-Siemens FibreCAT TX24
- Fujitsu-Siemens FibreCAT TX48

- 
- Eternus LT 20/40/60 S2 Series
 - Eternus LT260

HP:

- HP StorageWorks 1x8 G2
- HP MSL 2024 / 4048 / 6000 / 8096
- HP 1/8 Thinstor
- HP MSL6480
- HP MSL3040

HUALU:

- **DA-BH7010**
- **DA-BH8010**

IBM:

- IBM TS3100 / TS3200 / TS3310
- IBM TS2900 / TS3500 / TS3576
- IBM TS4500
- IBM 3584

NEC:

- NEC LL009F
- NEC T40A
- NEC T16A





ORACLE STORAGETEK

- STK SL500
- STK L700 , Sun StorEdge L700
- STK L180 , Sun L180
- STK L20
- STK L40
- STK L80
- SUN STK SL3000
- StorageTek C4
- StorageTek SL24 / SL48 / SL150
- StorEdge L400
- All library using ACSLS (SL8500,...)

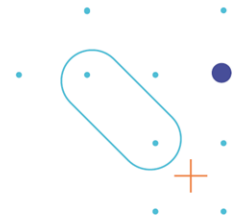
OVERLAND:

- NEO Series 2000 / 4000 / 8000 Arcvault Series
- NEOxl 40, 60 and 80
- NEOs T24 and NEOs StorageLoader

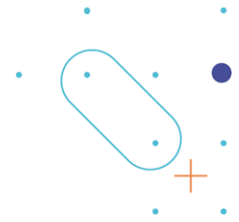
QUALSTAR:

- Qualstar Q Series
- Qualstar XLS Series
- Qualstar TLS Series
- Qualstar RLS Series

QUANTUM:



- 
- Adic Scalar i500
 - Adic Scalar i2000
 - Adic Scalar 24
 - Adic Scalar 10k
 - Adic Scalar 100
 - Adic Scalar 1000
 - Quantum Scalar i3/i6
 - Quantum Scalar 50
 - Quantum Scalar i40 / i80
 - Quantum Scalar i500
 - Quantum Scalar i2000, i6000
 - Quantum SuperLoader3
 - Quantum PX500 Series
 - Quantum PX720
 - ATL M1500, M4 DATA MagFile, M4 DATA MagStack 2-4, M4 DATA MagStack 5-10



SPECTRA LOGIC:

- Spectra Logic T Series
 - T24 to T-Finity
 - (T50, T120, T200, T380, T680, T950,...)
- Spectra Stack

SONY:

- PetaSite series using FC SCSI connection
(PSC API not supported yet)

TANDBERG/EXABYTE:

- Tandberg T-40¹
- Exabyte Magnum 448, Tandberg StorageLibrary T48
- Exabyte Magnum 224, Tandberg StorageLibrary T24
- Exabyte Magnum 1x7 2U
- Exabyte Magnum20

Supported Drives

Technology	Model	WORM and Encrypted Drive
HP	HP LTO3, LTO4, LTO5, LTO6, LTO7, LTO8, LTO8M, LTO9	Yes
HUALU	Hardware mode: DA-BH7010, DA-BH8010 Software: AuroraGDAS version 3.1.14	Yes
IBM ²	IBM LTO3, LTO4, LTO5, LTO6, LTO7, LTO8, LTO8M, LTO9 IBM TS1130, IBM TS1140, IBM TS1150, IBM TS1155, IBM TS1160	Yes
Oracle StorageTek	T10KA, T10KB, T10KC, T10KD T9840, T9940	No
Sony ODA	Minimum supported versions are: Drive ODA FC: ODS-D77F Firmware level 1688 ODA Driver: 5.4 Gen 1 & 2 & 3, SAN Support only supported on Linux	Yes (depending on media)

¹No automatic detection of the library. A manual procedure is required. Contact Atempo Professional Services for more information.

²With Advanced Path Failover support on both LTO and Jaguar tape drives where available.

Supported Tape Formats

Tape Format	TAR (PAX)	LTFS ¹
Available using AMM	Yes	Yes from LTO5, LTO6, LTO7, LTO8, LTO8-M, LTO9
Metadata automatically Stored on Tape	Yes	No ²
Tape Duplication	Yes	Yes
Tape Verify	Yes LTO5, LTO6, LTO7, LTO8, LTO8-M, LTO9	Yes LTO5, LTO6, LTO7, LTO8, LTO8-M, LTO9
WORM	Yes LTO5, LTO6, LTO7, LTO8, LTO8-M, LTO9	No

Library & Drive Limitations

Drives

The type of drives supported are the ones listed as supported by Miria in the above section.

Libraries

AMM only supports libraries that offer barcode management capabilities.

When barcode management is available, AMM supports the following library types:

- SCSI
- iSCSI
- Fiber Channel
- SAS (Linux and Windows only)
- RoCE

¹LTFS format is compliant with LTFS Format Version 2.5.1 standard

²The LTFS standard does not normalize the storing of metadata on tape.



Devices

- **No VTL support with Miria/AMM.**
- Only tape libraries and tape drives in a library are supported (no standalone drives).
- **Only tape libraries equipped with mailbox are supported** (no autoloader).
- Only libraries with the serialization mechanism (drive serial numbers are reported by the library) are supported.
- Only devices with serial numbers are supported.
- Device names must not contain spaces as characters.
- Barcodes on cartridges are mandatory, must be reported by the library **and must be unique in the Miria configuration.**
- Cleaning of tape drives is not supported (cleaning must be managed by the library).
- Only one type of tape drive per library is supported (e.g. LTO) but a generation mix is allowed (e.g. LTO7+LTO8).
- Drive and library arm multipath are supported.

Other Limitations

- Tape drives and tape libraries connected through NDMP are not supported.
- Drive sharing with other applications is not supported.
- Library sharing with other applications is not supported, but library splitting is supported.

Other Media Manager Supported:

- Sun StorageTek ACSLS 7.3, 8.x
- Sun StorageTek LibAttach 1.4.2

ACSLs Support

- The ACSLS server can be on any operating system. Check Oracle compatibility guide for more details.
- Only one library can be declared on the ACSLS server and Media Manager only supports the standard port for ACSLS clients.

Transcoding For Video Asset Preview

The transcoding for video asset preview feature creates a low-resolution version of an asset that can be viewed in a video player without retrieving the entire asset.

The license for this option is complimentary. It can be obtained free of charge by completing a request form upon configuring the Video proxy transcoding format in Miria Administration Console.

The transcoding option is only available with **Miria File Storage One to One located on the Miria Server**. All video formats/codecs supported by FFmpeg can be transcoded. However, if you intend to perform a Partial File Retrieval, some restrictions apply. See the Partial File Retrieval section for details.

The Preview Player is only available on Windows and macOS interfaces, while it is not accessible on java UI.

Partial retrieval can be performed directly from the Miria Preview Player on Windows interfaces only, without availability on macOS or the java UI.

Operating System	Version	Possible Preview File Format	Preview Player Available	Launch PFR from Preview Player
Linux	See Agent compatibility	MPEG-1/QuickTime H.2641/QuickTime	Yes	Yes
macOS		MPEG-1/QuickTime H.2641/QuickTime	Yes	Yes
Microsoft Windows		MPEG-1/QuickTime H.2641/QuickTime	Yes	Yes

¹Provided that H.264 Cisco library has been installed on the agent. See Miria Administration guide for details.



Partial File Retrieval (PFR)

The Partial File Retrieval (PFR) feature for the MXF and QuickTime (QT) formats is available via the Rich Media option that must be added to the Miria configuration.

PFR is only available in Agent Mode archiving, not in Client Mode.

The Rich Media Option also delivers automatic metadata import for media industry file formats such as MXF, DPX, etc. See the Metadata Import section for details.

Containers Supported By The PFR Option

QuickTime (QT)

No restriction concerning the essence supported.

MXF

Miria supports the wrappers, standards and essences listed below. In order to confirm that Miria is fully compatible with your flavor of MXF files, you can send links to samples file to be tested to: ada_info@atempo.com.

- MXF wrappers: OP1a.
- Video standards: PAL, NTSC (drop/non drop frame).

and the following essences: MPEG-2 (including XDCAM, Long GOP), DV 25/50, DVCAM, DVCPro, DNxHD, IMX 30/50, AVC-Intra, XAVC, JPEG 2000, Uncompressed, BWF, AES, IMX 30, 50, 50, Mpeg2, Mpeg2HD, Mpeg4, DV, DVCPro 25/50, DVCProHD, AVC-I, H.264, Jpeg2K, DNxHD, uncompressed, Tiff, Dpx, Bwf, Wave, Aiff, Aes2, Aes8, VBI, D-Cinema(DCI) support, DCP creation.

Concerning the support of “clip/frame wrapping” mode (video audio interleaved) by our Partial File Retrieve feature, here is the perimeter supported:

- In entry: MXF clip/frame wrapping is supported
- In output: MXF OP1a frame wrapped

Concerning Avid’s MXF formats:

- Partial File Retrieve is fully supported in an Interplay configuration equipped with an Interplay Archive Server.



Metadata Import

The Automatic Metadata Import feature delivers Automatic Metadata Import for media industry file formats (MXF, DPX...) or graphic file formats (AVI, JPG, MPEG, JPG2000...) depending on the option reference. It is available in the Rich Media Option. An additional license is required for this feature.

From the following graphical file formats (Files must be named with the precise file extension as indicated in the list provided):

ARW AVI AVS BMP CALS CIN CMYK CMYKA CRW CUR CUT DCM DCR DCX DIB DJVU DNG DPX EMF EPDF EPT EXR FAX FITS FPX GIF GRAY HALD HRZ SHTML ICO
INFO INLINE JBIG JNG JP2 JPC JPEG MAT MIFF MONO MOV MNG M2V MPEG MPC MPR MRW MSL MTV MVG MXF NEF ORF OTB P7 PALM PAM PBM PCD PCDS
PCL PCX PDB PEF PFA PFB PFM PGM PICON PICT PIX PNG PNG8 PNG24 PNG32 PNM PPM PS PSD PTIF PWP RAD RAF RGB RGBA RLA RLE SCT SFW SGI SHTML
SUN SVG TGA TIFF TIM TTF TXT UIL UYVY VICAR VIFF WBMP WMF WPG X XBM XCF XPM XWD X3F YCbCr YCbCrA YUV

Many types of metadata can be collected in images generated by graphics software or in digital photos, including EXIF, IPTC and XMP metadata standard. If you want to know if a specific type of metadata can be collected, send an email to ada_info@atempo.com with a sample file containing metadata and in the email body the list of metadata to look for.

Application Integration And APIs

Application Plugin

Application	Version
Avid Interplay / MediaCentral Production	Avid Interplay Production versions 2.7 to 2017.2 Avid MediaCentral Production version 2018.6 to 2019.6 Using Production Archive Engine (DET v2.x API)
Primestream FORK Production Suite	Integration with Miria is delivered by Primestream as an option to FORK1.

API Platform

API Type	Platform
C++ API	Refer to Miria Server platform list
Web Services	Web services are provided by Miria Server. Refer to Miria Server platform list.
REST API	REST API are provided by Miria Server. Refer to Miria Server platform list.

¹Contact Primestream for more information on the option and service required to integrate with FORK.

Language Availability

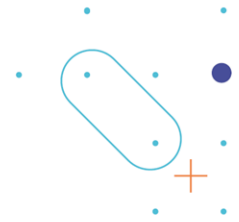
Interface	Languages
Web Interface (Administration & End-user)	English, French, Simplified Chinese
Administration Console ¹	English, French, Japanese, Korean, Simplified Chinese
CLIs	English, French

¹The Administration Console is marked end-of-life. It is strongly recommended to use the Web interface.



Network And Protocols

- Supporting NFS v2.x, v3.x and v4.x
- Operating Systems of Miria Data Movers
 - **CIFS** access: Supporting **only Windows-based** Miria DataMovers/Agents
 - **NFS** access: Supporting **only Linux-based or macOS-based** Miria DataMovers/Agents
- No support for:
 - IPv6 host names are currently not supported
 - Parallel NFS (pNFS)
 - Apple File Protocol (AFP) is not supported
 - No CIFS support on Linux/Unix or macOS Agents
 - No NFS support on Windows Agents

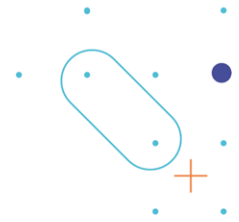




Identity Providers

- LDAP implementations supported¹:
 - Microsoft Active Directory
 - OpenLDAP
 - 389 Project
 - FreeIPA
- SAML v2.0 Providers:
 - Okta
 - Auth0
 - Azure Active Directory (Azure AD)
 - Microsoft 365 (through Azure AD)

Note: Any identity provider compliant with LDAP or SAML v2 standards should work.



¹Both LDAP over TLS (STARTTLS) and LDAP over SSL (LDAPS) are supported.



Specific Limitations

This section is listing limitations related to IT environment and infrastructure not listed in above sections of this document:

- **Disk Storage**
 - Extraction / unplugging of a removable disk is not supported by Miria
- **Virtual Tape Library/VTLs**
 - Are not supported by Miria/AMM

