PoINT Storage Manager

Version 7.0

System Requirements
and
Supported Storage Systems

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Attention
A functioning storage workflow requires a well configured system environment with devices working free of faults and, if applicable, flawless storage media. Therefore, it is of the essence that the user does backup all data by functions offered by PoINT software and/or (if required) by supplementary software products at adequate intervals (i.e. in accordance with the scope and frequency of changes), and thereby to facilitate the reinstatement of these data even in exceptional situations (i.e. in case of hardware malfunction).

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History of Document

Document Version	Modification Date	Product Version	Modifications
1.0	09/11/2018	6.2 SP1	Initial version
1.1	11/20/2018	6.3	Added requirements for PoINT Web GUI.
			Updated tested software versions for NetApp FAS as Source System, NetApp StorageGRID and Sony Optical Disc Archive Software.
1.2	02/05/2019	6.3 SP1	Added Sony ODS-D77U and ODS-D280U as supported devices.
			Added IBM TS2900 as supported device.
			Added tape technologies LTO-8 and LTO-7 Type M.
1.3	03/28/2019	6.3 SP2	Added Windows Server 2019 as supported Operating System.
1.4	05/29/2019	6.4	Added requirements for client application for PoINT User Controlled Archiving.
1.5	07/29/2019	6.4 SP1	Added Oracle Cloud and Wasabi Cloud Storage as supported storage systems.
1.6	01/17/2020	6.4 SP3	Added iTernity iCAS and ObjectMatrix MatrixStore as supported storage systems.
1.7	04/06/2020	6.4 SP4	Added support for Sony ODA Gen3 and Scaleway Object Storage.
1.8	08/13/2020	6.5	Added support for IBM Jaguar tape technology; Removed Windows Server 2008 as supported operating system.
1.9	11/03/2020	6.5 SP1	Added RSTOR Space as tested object storage.
2.0	03/25/2021	6.6	Recent Windows Server versions have been added.
			Added Dell EMC Isilon / PowerScale with support for SmartLock.
2.1	05/21/2021	6.6 SP2	Added iTernity iCAS FS as supported storage system.
2.2	07/09/2021	6.6 SP3	Added Huawei OceanStor as supported storage systems.
2.3	01/14/2022	6.7	Added LTO-9 tape technology and Windows Server 2022.
2.4	04/08/2022	6.7 SP1	Added Amazon FSx for Windows File Server and FSx for NetApp ONTAP
2.5	09/02/2022	6.7 SP2	Added Scality ARTESCA as supported storage system.
2.6	01/30/2023	6.7 SP3	Added support for NetApp ONTAP 9.11 and 9.12 including full support for its REST API.
3.0	04/23/2024	7.0	Removed Windows Server 2012; Updated hardware requirements; Added IBM TS1170 drives and JF media; Added Spectra Cube as supported device; Added NetApp ONTAP 9.13

1 Overview

This document contains information about the system requirements of the PoINT Storage Manager components and about the supported storage devices.

It is recommended to read this document in conjunction with the PoINT Storage Manager product documentation.

For latest information of a product release please refer to the README file.

2 System Requirements

2.1 PoINT Storage Manager Server

2.1.1 Operating System

Supported operating systems for PoINT Storage Manager Server are:

- Windows Server 2022
- Windows Server 2019
- Windows Server 2016

The listed Windows Server versions are supported in Standard and Data Center editions.

PoINT Storage Manager can be installed on a Windows Server without Desktop Experience (Server Core). In this case logon using Remote Desktop and start the setup executable from the command line. For further administration it is recommended to install the user interface components on another computer.

Prerequisites

- The .NET Framework 4.5.1 or later is required. The PoINT Storage Manager installation package automatically tries to download and install this version, unless this or a later version is already installed. If your computer does not have internet access, you need to download and install the .NET Framework before installing PoINT Storage Manager.
- The .NET Framework 8.0 is required for the optional web-based user interface. If necessary, this framework will be downloaded and installed during installation.

2.1.2 Server Hardware

The following requirements ensure the correct operation of PoINT Storage Manager. However, if the server is also used for other use cases, like file services, you need do adopt the requirements accordingly.

CPU

PoINT Storage Manager requires a 64 bit (x64) CPU capable running one of the supported operating systems with at least 4 cores. It is recommended to provide one CPU core per Storage Vault.

RAM

At least 16 GByte plus 1 per Storage Vault are required. If all Storage Vaults will be used in parallel, it is recommended to provide 4 GByte per Storage Vault.

Hard Disk

The installation hard disk must be formatted with NTFS. Also, the partitions used for temporary Archive Volumes and the databases should not be encrypted or compressed.

Note: It is recommended to exclude all working directories from on-access virus scanners.

Program Files
The program files require about 300 MByte of hard disk space on the system partition.

Confguration and Log Files

It is recommended to provide 10 through 100 GByte of disk space for configuration and log files. By default, these directories are located on the system partition, but it is recommended to move them to a dedicate locally attached partition.

Storage Vault Databases
The databases must be located on a NTFS or ReFS formatted hard disk partition with sufficient space to store database entries for all files which shall be managed by PoINT Storage Manager.

The databases require maximal 2048 Byte per file and directory, but in typical use cases it will be less than 1024 Byte.

A 100 GByte partition on a fast locally attached storage system is recommended if the expected data volume is not yet known.

Archive Volume Write Buffer and Read Cache
Archived data are first stored in a temporary image volume on the hard disk before the volume is migrated to the Archive Devices. The temporary hard disk space will be released after successful migration of the volume. While an Archive Job Cycle is running it requires space for at least two volumes. If multiple jobs are running simultaneously, then each of them needs sufficient disk space. When archiving large files, it is recommended to provide enough hard disk space so that the largest file fits into the temporary image directory.

Note: If you plan to use an Archive Tier, this directory must be located on redundant storage, e.g. a RAID volume.

The read cache is used to cache data which has been read from tape or object store devices. By default, it is located in a sub-directory of the directory for the temporary image volumes. The size of this cache is configurable using the Advanced Settings dialog of PoINT Storage Manager. After installation the size is set to 20 GByte.

2.2 PoINT TAFS Client

If you plan to install PoINT TAFS Client on a file server different than the PoINT Storage Manager server, that server must fulfill the aforementioned operating system, RAM and CPU requirements. Since the system will also be used as a file server, you must adapt the requirements to this application.

2.3 PoINT Status Monitor

If PoINT Status Monitor shall be installed on a dedicated server, that server needs to fulfill the aforementioned operating system requirements. There are no additional RAM, CPU or hard disk requirements for PoINT Status Monitor.

2.4 PoINT Secondary Access Server

The PoINT Secondary Access Server must be installed on a dedicated server which fulfills the aforementioned operating system, RAM and CPU requirements. The database of PoINT Secondary Access Server will be few GByte in size (typically, less than 10 GByte) and should be stored on a fast SSD.

2.5 PoINT User Controlled Archiving

The client application for PoINT User Controlled Archiving can be installed on Windows 8 and Windows 10 and on the Windows Server Versions which are supported by the PoINT Storage Manager Server. Additionally, the .NET Framework 4.5.1 or later is required. If necessary, this framework will automatically be downloaded and installed during installation of the client application.

2.6 PoINT Storage Manager - Web GUI

The optional web-based user interface is based on the .NET Framework 8.0 und requires the .NET Core and ASP runtimes. The required components will be download and installed during installation, but you may also install the latest version of the 8.0 hosting bundle in advance.

Starting with version 7.0, the Web GUI does not use Windows Internet Information Services and it cannot be used in parallel. The Microsoft Web Publishing Service will automatically be stopped and disabled, if it is running.

If multiple users will use the Web GUI to access archived data, the system requirements must be adjusted accordingly:

- Additional 1 GByte RAM per Storage Vault
- A dedicated hard disk or SSD with sufficient capacity to store all data which will be accessed by all users within one day.

2.6.1 Browser Compatibility

The PoINT Web GUI is compatible with all recent browser versions. It has been tested with Firefox 63 through 123, Chrome 70 through 122, Safari 12 and Microsoft Edge.

Note: Some browsers do not correctly report if a file download has been aborted due to a read error. In this case the downloaded file will be too short without notice. Therefore, it is strongly recommended to verify the size of downloaded files. This problem has not been observed with Firefox.

3 Supported Storage Systems

This chapter contains information about the supported source and target systems of PoINT Storage Manager.

If your device is not in the list, refer to the information provided at www.point.de or contact PoINT Software & Systems (support@point.de).

3.1 Source Systems

This chapter gives an overview about the supported source storage systems. Typically, these source systems build the primary storage with disk/flash technology.

Vendor	Product	Tested Versions	Tiering Method
(Any NAS vendor)	NAS product offering CIFS or NFSv3 access (2)		Copy / Move / Web Links (6)
Amazon	FSx for NetApp ONTAP (4) (8)	ONTAP 9.10	Copy / Move / Stubbing (1)
	FSx for Windows File Server (9)		Copy / Move / Sym Links (7)
Dell EMC	Isilon / PowerScale	OneFS 8.2.0, 9	Copy / Move / Sym Links (7)
	Unity (3)	4.2.0	Copy / Move / Stubbing (1)
	VNX (3)	7.0.35-3	Copy / Move / Stubbing (1)
NetApp	FAS Series (4)	7-Mode: 7.3.2, 7.3.5, 7.3.6, 8.0.1, 8.1, 8.1.3, 8.2 Cluster Mode: 8.3, 9.0 through 9.13.1	Copy / Move / Stubbing (1)
Microsoft	Windows Server based systems (5)	Refer to chapter System Requirements	Copy / Move / Sym Links (7) / Stubbing (1)

Notes

(1) The tiering method “Stubbing” allows policy-based migration of files from the source system (primary storage) to the target system by keeping links in the source system for transparent file system access.

(2) The following systems have been tested:
- NetApp E-Series formatted with Windows NTFS and CIFS share
- Promise VessRAID 1840i
- Promise VTrack E610f

(3) Requires FileMover API version 1.5 or higher for stubbing.

(4) Requires installed NetApp FAS Agent for stubbing (see separate product documentation).

(5) Requires installed PoINT TAFS Agent for stubbing.

(6) Allows replacing files by PoINT Web Links which enable users to download or open archived files using a web browser.

(7) Archived files can be replaced by Symbolic Links when using a CIFS share to access the source system.

(8) Configure as data source type “NetApp FAS (Cluster Mode)” and refer to the documentation of the PoINT NetApp FAS Agent.

(9) Configure as data source type “Standard File System”.

3.2 Target Systems

This chapter gives an overview about the supported target storage systems. Supported target systems can be configured in Capacity Tier and/or Archive Tier.

3.2.1 Hard Disk (WORM) Appliances and NAS Systems

Vendor	Product	Version	Capacity Tier	Archive Tier
(Any NAS vendor)	NAS products offering CIFS access		X	X
DELL EMC	Data Domain (1)	5.5.0.4		X
	Isilon / PowerScale (SmartLock) (7)		X	X
FAST LTA	Silent Cube Storage (2)		X	X
	Silent Brick (2)		X	X
Fujitsu Storage	ETERNUS CS Data Protection Appliance (3)			X
Huawei	OceanStor V5, F V5	v5R7	X	X
	OceanStor Dorado	6.1	X	X
iTernity	iCAS (8)	3.7.1.0	X	X
	iCAS FS (8)	1.8	X	X
NetApp	AltaVault (4)	4.2P1	X	X
	FAS Series (SnapLock) (5)	7-Mode, Cluster Mode	X	X
Quantum	Artico / Xcellis	5.4.0.1		X
StrongBox Data Solutions	StrongBox T1, T3, T10, T20, T30 (6)	2.1.2.7.0		X

Notes

(1) PoINT Storage Manager supports the retention functionality of EMC Data Domain. To use this functionality, make sure retention is enabled for the MTree containing the CIFS share to use and then specify the desired retention values when configuring the new Storage Vault. Retention will be applied for all volumes of this Storage Vault using the specified settings. The retention values specified in PoINT Storage Manager must be within the minimum and maximum values configured for the MTree.
PoINT Storage Manager requires access to EMC Data Domain using a CIFS share. During configuration of the device, you will be prompted to enter a user account which has access to the share. Make sure this account is known on the storage system and that it has read and write permissions to the CIFS share.

(2) To use FAST LTA Silent Cube or Silent Brick in the Archive Tier, the volume on the FAST LTA device must be configured as "WORM with retention (RWRO triggered)" or "WORM with retention and versioning (RWRO triggered)". Additionally, the creation of the so-called "Safe files" must be enabled for the volume. They must be configured to use the extension "safe" and either the text or xml file format.
FAST LTA appliances can be used in Capacity Tier using the mode “Original File Structure with WORM Compatibility” in PoINT Storage Manager.

(3) Shares on ETERNUS CS Data Protection Appliances can be configured as Archive Devices in PoINT Storage Manager if this option is enabled in your License Key. PoINT Storage Manager supports retention on these devices if the "protectable" option is enabled for the file system. You may set a retention time in PoINT Storage Manager when configuring the Storage Vault. If no retention time has been set in PoINT Storage Manager, a default retention time will be used, if configured for the file system.

(4) The NetApp AltaVault Storage Appliance can be configured as Archive Device in PoINT Storage Manager as standard HD/NAS archive device. It can also be configured as Capacity Tier for Storage Vaults if the PoINT Storage Agent Service Account has permission to access the provided CIFS network share.

(5) A NetApp FAS volume can be configured as Archive Device in the Archive Tier if this option is enabled in your License Key. PoINT Storage Manager supports the NetApp SnapLock functionality in Archive Tier. To use this functionality, specify the desired retention time stamp when creating a new Storage Vault. NetApp SnapLock will then be enabled for all volumes of this Storage Vault using the specified retention time stamp. The NetApp FAS volume must be shared using the CIFS file system. For further information about configuration of NetApp FAS please refer to the NetApp documentation.

(6) If users or applications try to read purged files which have been archived to the StrongBox, they may receive read errors or network timeouts if the data must be read from tape. In this case the user or application must retry the access later. Therefore, it is strongly recommended to configure an appropriate File Cache Size on the StrongBox device so that read data will stay in the cache for a reasonable time.

(7) Dell EMC Isilon can be configured in Archive and Capacity Tier, if connected using a CIFS share. SmartLock is supported in Archive Tier, only.

(8) iTernity iCAS and iCAS FS can be configured in Archive and Capacity Tier, if connected using a CIFS share. WORM is supported in Archive Tier, only.

3.2.2 Cloud and Object Stores

PoINT Storage Manager supports different types of Cloud and Object Stores as archive systems in the Archive Tier. S3 based Object Stores are also support as Capacity Tier. To store objects in Capacity Tier using their original file names, it is necessary to enable S3 versioning for the bucket.

The following table provides an overview about the tested and supported Cloud and Object Store systems:

Vendor	Product	Version	PoINT Connector (1)
Amazon	AWS S3 Storage		ADV
	Tape Gateway (13)		
Amplidata	Himalaya (2)	3.4.1	GEN-S3
	Amplistor (2)	3.4.1	GEN-S3
Caringo	Swarm (3)	CAStor Ver 6	ADV
Cloudian	HyperStore	6.2, 7.0.1.1, 7.1.2-7.2.1	ADV

DELL EMC	Atmos [4]	2.0.1	ADV
	Centera [5]	3.3	ADV
	ECS [6]	2.1, 2.2	GEN-S3
HGST	Active Archive [2]		ADV
Hitachi Data System (HDS)	HitachiCP [7]	6.1.0.113	ADV
Hitachi Vantara	Hitachi Content Platform [2]	8.0.0, 9.0.0, 9.2.3	ADV
Huawei	OceanStor Pacific	8.1	ADV
IBM	COS (Cloud Object Storage) [2]	3.11.1.14, 3.15.2.34	GEN-S3
iTernity	iCAS FS [2] [10] [11]	1.8	ADV
Microsoft	Azure [8]		ADV
NetApp	StorageGRID Webscale (CDMI) [9]	10.0, 10.1, 10.2, 10.2.1	ADV
	StorageGRID Webscale (S3) [2]	10.3 through 11.5	ADV
ObjectMatrix	MatrixStore		GEN-S3
Oracle	Oracle Cloud [11]		GEN-S3
PoINT	PoINT Archival Gateway [12]	1.0 through 4.0	ADV
Quantum	Lattus [2]	3.6.0	ADV
RSTOR	RSTOR Space		GEN-S3
Scaleway	Object Storage		GEN-S3
Scality	ARTESCA	1.4.0	GEN-S3
	RING	4.2	GEN-CDMI
SUSE	Enterprise Storage [2] [10]	Version 4	GEN-S3
Wasabi	Cloud Object Storage [2]		ADV

Notes

(1) Object store connectors are a license option. The required modules will automatically be installed. Different types of connectors are available as indicated in the table above:

GEN-S3	Generic Connector for S3 protocol
GEN-CDMI	Generic Connector for CDMI protocol
ADV	Advanced Connector for the corresponding Cloud/Object Store system which has been especially implemented to support specific features of this system

(2) The connector uses the Simple Storage Services (S3) protocol to communicate with the storage system.

(3) The connector uses the Simple Content Storage Protocol (SCSP) for communication with the storage system. It has been tested with Caringo CAStor software version 6.

(4) The connector uses the ATMOS API for communication with the storage system.

(5) The connector uses the EMC Centera SDK 3.3 and has been tested with EMC Centera with CentraStar 4.1 and 4.2 and with EMC Atmos version 2.0.1 in Centera mode.

(6) This connector uses the Simple Storage Services (S3) protocol to communicate with the storage system. It supports unencrypted transport (HTTP) or HTTPS using TLS 1.0, 1.1 or 1.2, depending on the configuration of the Operating System and the EMC ECS.

(7) The connector uses the HCP Rest API for communication with the storage system.

(8) The connector uses the Microsoft Blob Service REST API to communicate with the storage system.

(9) The PoINT Connector for NetApp StorageGRID Webscale uses the CDMI protocol to connect to the storage system. This connector cannot be used for versions 10.3 or later.

(10) Supported with Signature Version 2 and SSL.

(11) Virtual Host Style Addressing must be disabled using the option 'novhs' in connection settings.

(12) Due to high latency of tape storage, PoINT Archival Gateway cannot be configured as Capacity Tier.

(13) Connected as iSCSI tape library. Glacier Flexible Retrieval / Deep Archive must be managed using AWS console.

3.2.3 Optical Systems

The following table provides an overview about the tested and supported optical storage systems (single drives and jukeboxes):

Vendor	Product	Version	Capacity Tier	Archive Tier	PoINT Connector
(Single drive vendor)	CD/DVD/BD single drive products (1)			X	
(Jukebox vendor)	CD/DVD/BD jukebox products supported by PoINT Jukebox Manager (3)		X (2)	X	X (3)
Sony	ODS-L30M (4)	2.03		X	
	ODS-L60E (option to ODS-L30M)			X	
	ODS-L100E (option to ODS-L30M)			X	
	ODS-D77U standalone drive (4)			X	
	ODS-D280U standalone drive (4) (5)			X	

Notes

(1) Support for a CD/DVD/BD single drive requires that the drive support the standardized Multimedia Commands (MMC).

(2) Capacity Tier using “Original File Structure with WORM Compatibility”

(3) Requires PoINT Jukebox Manager Connector. For details see section “PoINT Jukebox Manager Connector” in PoINT Storage Manager README.

(4) The Sony Optical Disc Archive Software must be installed. Versions 4.0.2 through 4.4.0 and 5.0.0 of this software have been tested.

(5) ODA cartridge generations 1, 2 and 3 are supported.

3.2.4 Tape Systems

The following table provides an overview about the supported tape systems (single drives, loaders and libraries) which are supported as archive systems in the Archive Tier.

The listed tape systems are supported using tape technologies LTO-2 through LTO-9 and IBM 3592 (Jaguar) generation 5 through 6. WORM media are supported using the MTF tape format. Other media will by default be formatted using LTFS.

Vendor	Product	Version
actidata	actilib Library 2U	
BDT	FlexStor II	
Cristie	GigaStream T8	
	GigaStream T24	
	GigaStream T48	
	GigaStream T560	
DELL EMC	Power Vault LTO5-140 (single drive)	
	PowerVault TL2000	
	PowerVault TL4000	

HP	MSL2024	
	MSL4048	
	MSL8096	
	MSL6000 Series	
	StorageWorks 1/8 G2	
	Storage Works Ultrium LTO-3/4/5/6 (single drive)	
HPE	StoreEver MSL6480	
IBM	TS2900 Tape Library	
	TS3100 Tape Library	
	TS3200 Tape Library	
	TS3500 Tape Library	
	TS4500 Tape Library	
Overland-Tandberg	NEO Series	
PivotStor	AP TL2000	
	AP TL4000	
	AP TL8000	
Qualstar	Q-Series	
	RLS-8202	
	RLS-8204	
	RLS-8236	
	RLS-8244	
	RLS-8350	
	RLS-8404	
	RLS-8444	
	RLS-8500	
	RLS-8560	
	RLS-85120	
	TLS-8211	
	TLS-8222	
	TLS-8433	
	TLS-8466	
	TLS-88132	
	TLS-88264	
	XLS-810160	
	XLS-810240	
	XLS-816110	
	XLS-820500	
	XLS-832700	
Quantum (1)	Scalar i3	270G.GS096
	Scalar i500	
	Scalar i6	270G.GS096
	Scalar i6000	
Spectra Logic	Spectra Cube	
	Stack Tape Library	2.10
	T50e	
	T120	

	T200	
	T380	
	T680	
	T950v	
	T950	
	TFinity ExaScale	
SUN	StorageTek SL24	
	StorageTek SL48	
Tandberg	LTO-6 HH (single drive)	3249
	Storage Library T24	
	Storage Loader 2U LTO	

Notes

(1) Quantum Scalar Intelligent Libraries:
- No drivers should be installed for the robotics and the tape drives.
- "Library-Assisted Drive Unload" and "Automatic Inventory" must be enabled.
- Data and Control Path Failover are not supported. These functions must be disabled.