

PoINT Archival Gateway

System Requirements
and
Supported Devices



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1 Introduction

PoINT Archival Gateway is a software solution building a bridge between client applications or systems, respectively, and the supported archival storage devices (e.g. tape libraries) by providing services and functions which are mandatory for data archival solutions in enterprise data centers.

Please refer to the **PoINT Archival Gateway Operation Guide** for a comprehensive description of the software solution including its deployments, functions and terminology.

Chapter 2, System Requirements, specifies basic system requirements that must be fulfilled by server system before you can install and operate the software on the systems.

Chapter 3, Supported Devices, provides detailed information about the supported archival storage devices and about device specific requirements.

1.1 Purpose of the Document

This document describes prerequisites for installing and operating the PoINT Archival Gateway software solution on Windows server systems. The document is intended to be used by technical managers and administrators of the PoINT Archival Gateway software.

1.2 History of the Document

This section describes the history of the document by enumerating document versions and differences between the versions.

Version 001, 2020/04/09

This is the first official version of the document describing product version 2.0.

Version 002, 2020/05/05

The document has been extended by specifications for IBM 3592 (aka. Jaguar) tape drives and media, and the corresponding sections have been updated.

1.3 Definitions and Terms

This document uses the following definitions and terms.

PAG, PAG-IFN, PAG-DBN

Acronyms for PoINT Archival Gateway and its interface and database nodes

PAG-CGN

Acronyms for the PoINT Archival Gateway compact node combining both interface and database node services in a single node

PAG-EGN

Acronyms for the PoINT Archival Gateway emulator node emulating archival storage devices and associated media by means of local or network file storage systems for test and demonstration purposes

2 System Requirements

This chapter describes the system and hardware requirements which must be fulfilled by a server system before the software can be installed as well as recommendations regarding network and transport layer security configuration settings for the operating system.

The requirements, especially with respect to the number and the speed of the CPU cores, basically depend on the required data and object transfer rates or, in other words, on you and on your clients. The remainder of this chapter assumes that the deployments shall be able to use all connected archival storage devices in parallel and at their maximum data rates, and defines the requirements accordingly.

In a standard deployment, one or two PAG-DBNs and multiple PAG-IFNs can be installed on separate server systems. The following sections describe the basic requirements for the respective server systems.

2.1 System Requirements for a PAG-IFN

The number of PAG-IFNs required in a deployment depends on the archival storage devices. The archival storage device also defines the number of CPU cores and the amount of RAM of a PAG-IFN. Please refer to chapter 3, Supported Devices, for details.

The system requirements for PAG-IFNs are defined as follows:

- One or two Intel® Xeon® processors, 2.6 GHz or better, at least providing the number of cores as required by the archival storage device
- At least 8 GB of DDR4 2.133 MT/s (L)RDIMM RAM plus the amount of RAM required by the archival storage device, equally distributed over the memory banks of the processors
- A direct attached hard disk system for operating system and page file as well as for the local log file of the PAG-IFN
- System network: at least one 10gb Ethernet port for the internal data communication between PAG-IFNs, PAG-DBNs and, if applicable (e.g. iSCSI), the drives of the archival storage device

Note: The system network should leverage jumbo packets (i.e. MTU 9014). Enable use of jumbo packets for all associated network interface cards.

- Client network: one or more 10gb Ethernet ports, provided by one or more network interface cards, for external data communication between the client applications and the PAG-IFNs
- Administration network: at least one 1gb Ethernet port for the server system administration (e.g. RDP)
- Operating system: Windows Server 2012 R2 Standard or Enterprise edition, Windows Server 2016 or Windows Server 2019

Note: The PAG-IFN server systems can be members of an active directory domain. Domain membership is an option, but not a requirement.

Note: For security and performance reasons, client and administration networks should be strictly separated from the system network by appropriate network techniques, e.g. by defining VLANs or switch port groups or by using separate switches.

2.2 System Requirements for a PAG-DBN

A PAG-DBN provide the database services to an arbitrary number of PAG-IFNs. The corresponding system requirements are defined as follows:

- One or more Intel® Xeon® processors, 2,6 GHz or better, providing 4 cores plus 1 additional core per connected PAG-IFN
- At least 64 GB of DDR4 2.133 MT/s (L)RDIMM RAM, equally distributed over the memory banks of the two processors
- A direct attached hard disk system for operating system and page file
- System network: one or more 10gb Ethernet ports for the internal data communication of the PAG-DBN with other PAG-DBNs, PAG-IFNs and, if applicable, the archival storage systems

Note: The system network should leverage jumbo packets (i.e. MTU 9014). Enable use of jumbo packets for all associated network interface cards.

- Administration network: one or more 1gb Ethernet ports for the server system administration (e.g. RDP) or, if applicable, for the web service and the System Administration GUI of the PoINT Archival Gateway
- Local disk storage: two additional and separate direct attached volumes, one high performance volume (i.e. SSD) and one high capacity volume (e.g. SAS 10k RPM HDD) for the databases and logs
- Operating system: Windows Server 2012 R2 Standard or Enterprise edition, Windows Server 2016 or Windows Server 2019

Note: The PAG-DBN server systems must be members of an active directory domain to enable adoption of security principals from this domain or from trusted domains (see chapter 4 of the Operation Guide). If you do not intend to utilize external security principals, domain membership is an option, but not a requirement.

Note: For security and performance reasons, the administration network should be strictly separated from the system network by appropriate network techniques, e.g. by defining VLANs or switch port groups or by using separate switches.

2.3 System Requirements for a PAG-CGN

The requirements for a PAG-CGN are basically equal to the sum of the requirements as defined in the previous sections. However, due to synergy effects, the system requirements regarding processor and RAM are lower and are defined as follows:

- One or two Intel® Xeon® processors, 2.6 GHz or better, at least providing 4 cores plus the number of cores as required by the archival storage device
- At least 32 GB of DDR4 2.133 MT/s (L)RDIMM RAM plus the amount of RAM required by the archival storage device, equally distributed over the memory banks of the processors

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Supported Devices

The following sections provide information about the types of archival storage devices supported by PoINT Archival Gateway.

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

3.1 Media Changer Devices

A media changer is commonly called a library. PoINT Archival Gateway supports the following types of libraries.

3.1.1 Tape Libraries

PoINT Archival Gateway supports tape libraries of the following vendors. Please also refer to the current release notes in file “ReadMe.html” for the latest comments and recommendations regarding the supported tape library products.

Vendor	Product
ADIC	Scalar Series
Fujitsu	Eternus Series
HP/HPE	MSL Series
IBM	TS Series
Overland	NEO Series
Quantum	Scalar Series
Spectra Logic	T Series

A PoINT Archival Gateway system can control up to eight tape libraries and up to twenty tape drives per library. Up to sixteen tape drives can be connected to a particular PAG-IFN server system, provided that a sufficient number of adapter cards (e.g. FC adapters and ports) is present.

The library (i.e. the robotics) control interfaces have to be connected to all PAG-DBN server systems. PoINT Archival Gateway takes care that only one PAG-DBN uses the interface at a time.

Note: Small and medium libraries (aka. tape loaders) typically do not provide a separate library control interface, but provide this interface via the drive interfaces. Such libraries cannot be used in a standard deployment of PoINT Archival Gateway (i.e. with separate PAG-DBN and PAG-IFN server systems), but require a compact deployment (see chapter 2 of the Operation Guide).

3.1.1.1 Supported Tape Drives and Media

PoINT Archival Gateway supports the following tape drives and media:

- LTO tape drives and media of generations 5 through 8, including the M8 media format and the WORM variants.
- IBM 3592 (aka. Jaguar) tape drive models TS1150, TS1155 and TS1160 and media types C, D and E including their Economy and WORM variants (in detail the media type codes JC, JD, JE, JK, JL, JM, JY, JZ, JV and the formats E08, 55F, 60F).

Note: Tape media of multiple generations can coexist in the same library. PoINT Archival Gateway automatically chooses a compatible drive for loading a particular medium.

Note: PoINT Archival Gateway does not support and ignores unlabeled tape media. The labels must contain the media type code (e.g. L8 or JE) at the end of the label or bar code, respectively.

3.1.1.2 Additional System Requirements for PAG-IFN Server Systems

The actual write performance of the tape media ranges from about 80 MB/s (LTO-5) to 220 MB/s (LTO-8) or to about 300MB/s (3592, all supported types). The number of CPU cores and the amount of RAM required in PAG-IFN server systems depends on the number of connected tape drives and on the tape generation according to the following table:

Drives	Media	CPU Cores	RAM (GB)
2	LTO-5	2	48
4	LTO-5	3	96
8	LTO-5	6	192
16	LTO-5	12	384
2	LTO-6	2	48
4	LTO-6	3	96
8	LTO-6	6	192
16	LTO-6	12	384
2	LTO-7	3	48
4	LTO-7	6	96
8	LTO-7	11	192
16	LTO-7	22	384
2	LTO-8	4	48
4	LTO-8	8	96
8	LTO-8	16	192
16	LTO-8	32	384
2	3592	6	48
4	3592	12	96
8	3592	24	192
16	3592	48	384

Note: If you know that you are going to apply erasure coding to the data (refer to chapter 7 of the Operation Guide), you can reduce the requirements according to the chosen code rate and multiply the number of CPU cores as well as the amount of RAM by the fraction representing your chosen rate (e.g. code rates 1/2 or 2/4 require half of the resources).