

IBM Spectrum NAS V1.7 software-defined storage solution delivers agility and simplified management for network-attached storage

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At a glance

IBM Spectrum™ NAS is a software-defined storage solution that offers agility and management simplicity for network-attached storage (NAS) workloads. It helps reduce capital expenditure by working with industry-standard x86 servers to form high-performance, scale-out storage clusters.

Overview

Spectrum NAS software-defined storage is self-balancing with symmetric architecture that reduces the incidence of bottlenecks or hotspots. This architecture, along with data redundancy and protection, enhances reliability by avoiding any single point of failure.

The Spectrum NAS model supports a flexible and pragmatic approach to organizational evolution. It can be quickly and easily installed, and transparently upgraded over the network without interrupting service.

Simple to deploy and administer

- Quickly deploy on bare-metal servers or virtual machines (VMs) in 30 minutes
- Powerful, intuitive GUI for monitoring and management
- Self-balancing and data-efficient erasure coding

Lower cost

- Hardware agnostic software leverages commodity x86 servers
- Tailor application file sets for efficiency, performance, and protection

Scale-out file storage that grows with you

- Linear scaling of performance and capacity
- Upgrade hardware and software without system downtime

Enterprise NAS features

- Native, scale-out NFS and SMB protocols with high spec compatibility
- Rich NAS functions as encryption, anti-virus, quota, tiering, snapshot, and mirroring

Key prerequisites

None

Planned availability date

March 20, 2018

Description

Spectrum NAS is a distributed storage software product that offers agility and management simplicity for NAS workloads. It includes:

- Protocol support (NFS, SMB)
- Scale-out file system
- Embedded operating system

The software runs on industry-standard x86 nodes that form a cluster. The minimum size of the cluster is four nodes, and each new node added to the cluster increases capacity and performance in a linear way. At the time of this release, only eight node cluster was tested. Opportunities for larger cluster sizes require development review. All nodes in the cluster are functionally identical, and there are no dedicated nodes for specific functions. This symmetrical architecture ensures seamless scaling without any hotspots or bottlenecks. Storage for the cluster is pooled from the capacity of the drives that are internal to the server and across all nodes in the cluster. The pooled storage is used to carve out file systems.

Key features and top use cases

The top use cases of Spectrum NAS are:

- User/home directories and test/dev can utilize SMB scalability, support for enterprise authentication, and anti-virus support
- NAS storage for Windows™/Microsoft™ applications delivers the same support for SMB protocols as Microsoft
- File services for VMs when running Spectrum NAS versus the other VM-based scale-out/software-defined storage offerings in the market that only support traditional block based workloads

Key data management features:

- Synchronous replication (within same site)
- Asynchronous replication (across locations)
- Tiering of data between different storage tiers based on user-defined policies
- Each storage tier within its own erasure coding group
- Anti-virus support with Symantec Protection Engineer
- Encryption of data at rest (AES 256 bit XTS) with one key for each file system
- Support for multiple separate file systems
- Quotas at folder level
- Multiple authentication mechanisms (AD, LDAP, Kerberos, NIC, and local database)
- Virtual IP for self-healing from disk or node failures
- Automatic load balancing of storage disks

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT), containing details about accessibility compliance, can be found on the [Product accessibility information](#) website.

Program number

Program number	VRM	Program name
5737-F63	V1.7.0	IBM Spectrum NAS

Offering Information

Product information is available on the [IBM^{\(R\)} Offering Information](#) website.

More information is also available on the [Passport Advantage^{\(R\)}](#) and [Passport Advantage Express^{\(R\)}](#) website.

Publications

Technical documentation can be found in [IBM Knowledge Center](#).

Services

Global Technology Services

Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings for the efficient installation, implementation, or integration of this product.

Technical information

Specified operating environment

Hardware requirements

To build a storage cluster, you will need at least four nodes to ensure that all cluster features can be allowed to function correctly. No additional operating system is required for the storage nodes, and the operating system will be installed together with the IBM Spectrum NAS software.

Before you begin the installation, ensure that your storage nodes meet the following system requirements:

Storage node	Minimum	Capacity optimized	Performance optimized	All Flash
CPU	x64 (4 cores)	1 x Intel Xeon™ E5-2620v4 8 cores	2 x Intel Xeon E5-2620v4 8 cores	2 x Intel Xeon E5-2620v4 8 cores
RAM memory	12 GB	64 GB DDR4	128 GB DDR4	128 GB DDR4
Boot Disk	20 GB	60+ GB	60+ GB	60+ GB
Cache disk	20+ GB SSD ¹	1 x Intel™ P3700 400 GB NVMe ¹	2 x Intel P3700 400 GB NVMe ¹	3 x Intel P4800X 375 GB NVMe ¹
Storage disk	SAS / SATA disks	SAS / SATA disks	SAS 10K	SATA SSDs
Host bus adapter	LSI SAS 3008 IT-mode	LSI SAS 3008 IT-mode	LSI SAS 3008 IT-mode	LSI SAS 3008 IT-mode

Storage node	Minimum	Capacity optimized	Performance optimized	All Flash
Network	1 x Gigabit NIC	Intel X520 2 x 10 GbE NIC SFP+	Intel X520 2 x 10 GbE NIC SFP+	2 x Mellanox ConnectX-4 25/100 GbE
Number of nodes	4 nodes minimum	Scale out from 4 nodes	Scale out from 4 nodes	Scale out from 4 nodes

¹ For durability, highly endurant enterprise grade SSD or NVMe (DWPD > 9) is recommended.

Software requirements

No additional operating system is required for the storage nodes. The operating system will be installed together with Spectrum NAS software.

Planning information

Packaging

This offering is delivered through the internet as an electronic download. There is no physical media.

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This product is only available through Passport Advantage. It is not available as shrinkwrap.

Product: IBM Spectrum NAS (5737-F63)

Passport Advantage

Description	Part number
IBM Spectrum NAS Per Terabyte License + SW Subscription & Support 12 Months	D1VTFLL
IBM Spectrum NAS Per Terabyte SW Subscription & Support Reinstatement 12 Months	D1VTGLL
IBM Spectrum NAS Per Terabyte Monthly License	D1VTHLL
IBM Spectrum NAS Per Terabyte Annual SW Subscription & Support Renewal 12 Months	E0POULL

Charge metric

Program name	PID number	Charge metric
IBM Spectrum NAS	5737-F63	Per terabyte

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Limited warranty

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Volume orders (IVO)

No

Passport Advantage applies

Yes, information is available on the [Passport Advantage and Passport Advantage Express](#) website.

Software Subscription and Support applies

Yes. Software Subscription and Support, also referred to as Software Maintenance, is included with licenses purchased through Passport Advantage and Passport Advantage Express. Product upgrades and Technical Support are provided by the Software Subscription and Support offering as described in the Agreements. Product upgrades provide the latest versions and releases to entitled software, and Technical Support provides voice and electronic access to IBM support organizations, worldwide.

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For additional information about the International Passport Advantage Agreement and the IBM International Passport Advantage Express Agreement, go to the [Passport Advantage and Passport Advantage Express](#) website.

Variable charges apply

No

Educational allowance available

Education allowance does not apply. Education software allowance does not apply. Special education prices are available for qualified customers through Passport Advantage.

Statement of good security practices

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