



EonStor GSx U.2 NVMe All-Flash Parallel File Storage

Highlights

Ultimate Performance

- Performance scales linearly when adding more GSx appliances
- A single appliance delivers up to 43GB/s read and 16.5GB/s write, while the entire cluster of 10 GSx achieves nearly 10 times that performance

Scale-Out

- Start with one appliance and scale out by adding a new GSx when needed, up to 10 appliances

Easy Deployment and Management

- Simplified IT architecture without the need for additional servers
- Special setup wizards guiding through the entire GSx cluster installation process
- EonOne central management

Reduced Rack Space

- No I/O nodes or metadata servers required

Major OS Platform Compatibility

- Linux and Windows platforms for client hosts
- CIFS and NFS file-sharing protocols supported

Introduction

EonStor GSx U.2 NVMe hybrid flash storage is a high-performance solution facilitating parallel file access in IT environments requiring processing and storing sheer volumes of data. GSx cluster combines performance of multiple GSx appliances enabling enterprises to harness the benefits of faster data processing with multiple concurrent I/O paths. Designed with efficiency in mind, GSx simplifies IT architecture and eliminates the need for additional parallel file system software. GSx U.2 NVMe hybrid flash parallel file storage solution delivers ultra-high performance, making it a perfect choice for HPC and AI applications that prioritize speed and responsiveness.

Maximized Performance with Parallel File Access

EonStor GSx delivers ultra-high performance by processing data in parallel from multiple GSx appliances, leveraging their combined performance. GSx evenly distributes data across GSx appliances in the cluster with the intelligent data allocation mechanism. To accelerate data access, GSx swiftly locates data paths and enables direct data access from the data-owning GSx appliances. This approach effectively reduces the time required for locating and accessing data compared to non-parallel file systems, such as scale-out NAS, where data access is facilitated from only a single appliance. Additionally, by employing block protocol for file transfer, GSx eliminates file protocol overhead, maximizing performance for demanding applications.

With a single GSx appliance delivering 43GB/s read and 16.5GB/s write throughput performance, a GSx U.2 NVMe all-flash cluster, combining up to 10 GSx appliances, achieves nearly 10 times this performance, facilitating seamless parallel file access workloads.

High Scalability with Scale-out

With ever-expanding data, applications often require storage expansion to accommodate larger datasets and more complex computations. EonStor GSx ensures that data access performance and capacity scale as the system is expanded. As your application demands evolve, simply add more appliances to the cluster to scale out, achieving linear performance increase and expanded capacity. Moreover, GSx supports a single namespace architecture allowing users to seamlessly access and manage data. The scale-up feature facilitates storage expansion, with each GSx U.2 NVMe storage appliance connecting up to three all-flash expansion enclosures to add up to 72 U.2 NVMe SSDs.



Easy Deployment and Management

EonStor GSx dramatically simplifies IT architecture and setup by integrating functions of I/O nodes and metadata servers directly into GSx appliances. Also, GSx supports client agents installed on client hosts to enable parallel file access, so the solution doesn't require using any additional parallel file system software. This approach simplifies the deployment of parallel file storage, offering organizations a straightforward solution of high-performance parallel file access storage for their I/O-intensive workloads. Additionally, special wizards facilitate GSx cluster deployment, guiding IT administrators through the entire system installation process.

EonOne, the web-based management software tool provided with the EonStor GSx parallel file storage system, is designed to easily set up configurations for increased productivity. Its intuitive interface simplifies the tasks of IT administrators, allowing them to effectively manage multiple GSx appliances, monitor performance and capacity usage, and configure GSx systems, all through a centralized platform.

Space-Saving Architecture

In a traditional parallel file system architecture, typically involving metadata servers and multiple I/O nodes, there is a significant demand for rack space in the data center. However, EonStor GSx offers a solution that allows enterprises to avoid the abovementioned hardware, addressing space constraints.

Data Protection

EonStor GSx parallel file storage provides robust data protection mechanisms to safeguard against various risks. First, RAID 5/6 technology helps the system to run normally and ensures your data is fully protected even in the case of a drive failure. As an additional layer of protection against disasters such as hardware failures or catastrophic on-site events, you can replicate data to a remote location using the remote replication feature to enable effective disaster recovery measures.

GSx also supports an intelligent SSD algorithm that not only extends SSD lifespan by reducing the total amount of writes but also prevents multiple SSDs from failing simultaneously and causing data loss. Moreover, as GSx monitors SSD status in real time, it estimates the remaining lifespan of each SSD and sends the administrator a reminder to replace any SSD that is about to fail.

Major Client Host OS Compatibility

EonStor GSx can work with client hosts running on major OS platforms. GSx ensures compatibility with Linux and Windows systems through client agents enabling parallel file access. Furthermore, GSx supports the most popular file-sharing protocols: NFS – for Linux-based systems and CIFS – for Windows environments.

PHYSICAL SPECIFICATIONS

Product Series			GSx 4000U	GSx 5000U
Form Factor	2U 24-bay		GSx 4024UR	GSx 5024URE
			Note: U: NVMe storage R: Dual redundant controllers	
Number of Appliances			1 to 10	
Controller			Dual redundant	
Cache Backup Technology			Super capacitor + flash module	
CPU			Intel® Xeon® D 6-Core	Intel® Xeon® Scalable 12-Core
Cache Memory			Default DDR4 48GB, up to 384GB	Default DDR5 128GB, up to 1024GB
Supported Drives			2.5" U.2 NVMe SSD (must be purchased from Infortrend)	
Max. Drive Number	Per Appliance		96	96
	Per Cluster		960	960
Onboard JBOF Expansion Ports			4	0
Max. Host Board Slots			4	6
Host Board Options			• 32Gb/s FC x 4 • 25GbE (SFP28) x 4, RDMA • 100GbE (QSFP28) x 1, RDMA • 100GbE (QSFP56) x 2, RDMA	• 32Gb/s FC x 4 • 25GbE (SFP28) x2, RDMA • 25GbE (SFP28) x4, RDMA • 100GbE (QSFP28) x1, RDMA • 100GbE (QSFP56) x2, RDMA • 200GbE (QSFP56) x1, RDMA
			Note: It is strongly recommended that you refer to the latest Host Board and Memory Guide on our website for complete information, including supported combinations and important notes, before purchasing any host board for your model.	
Max. 32Gb/s FC Ports			16	24
Max. 25GbE Ports (SFP28)			16	24
Max. 100GbE Ports (QSFP28)			4	6
Max. 100GbE Ports (QSFP56)			8	12
Max. 200GbE Ports (QSFP56)			0	6
Expansion Enclosures (JBODs)			JB 4024U	
Dimensions (Without Chassis Ears and Protrusions) (W x H x D)			449 x 88 x 530 mm	449 x 88 x 830 mm
Package Dimensions (W x H x D)			780 x 338 x 588 mm	594 x 235 x 1106 mm
Power Supply Unit	Power Supplies (Redundant and Hot-swappable)	Global	530W x 2 (80 PLUS Bronze)	1600W x 2 (80 PLUS Titanium)
		EU	800W x 2 (80 PLUS Titanium)	
	AC Voltage	Global	100-240VAC @10A-5A	100-127VAC @12A, 200-240VAC @10A
		EU	100-127VAC @10A, 200-240VAC @5A	
			Note: Please use 200-240VAC for the GSx 5000U series in both the global and EU versions.	
Frequency			50-60 Hz	
Safety Standards			• Electromagnetic compatibility: CE, BSMI, FCC	• Safety: UL, BSMI, CB

SOFTWARE SPECIFICATIONS

File System		Infortrend Parallel File System		
Clients and Connectivity	GSx Client	Allows users and applications to connect over Ethernet or Fibre Channel to access		
	Supported Client OS	Linux, Windows		
	Client Connections	Leverages FC, iSCSI, iSER/RDMA		
Max. Number of File Systems		64		
Max. iSCSI Initiators		416		
Max. Host Connection Number		256 (per FC)		
Max. File System Size		80PB		
Max. File Size		80PB		
Max. Number of User Accounts		20000		
Max. Number of User Groups		512		
Max. Number of Concurrent Connections		2048		
Management		• Web-based EonOne management software • Folder management - folder access control • User account management	• Quota management • Microsoft Active Directory (AD), Linux LDAP and NIS authentication	• Group management • ACL control
Data Protection		• Disk protection: RAID 5, RAID 6	• Cluster protection: Rsync	
Notification		• Email	• SNMP traps	

WARRANTY AND SERVICE

Service and Support	Standard Service	3-year limited hardware warranty and 8 x 5 phone, web, and email support (batteries are covered under warranty for 2 years)
	Upgrade or Extension Options	Warranty extension: Standard service can be extended up to 5 years. The following services can be upgraded to 5 years. - Upgrade: Replacement part dispatch on the next business day - Advanced service: Phone, web, and email support + onsite diagnostics on the next business day - Premium service: Phone, web, and email support + onsite diagnostics within 4 hours
	Technical Support	Get information on system installation and maintenance, download technical documents and software, or issue a support ticket
	Product Services	Register products, download firmware, apply for licensing services, create product repair tickets, or check product repair status

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