Infortrend®

Explore EonStor GSe

EonStor GSe U.2 NVMe Hybrid Flash Storage

Scale-out Unified Storage for SMB

Highlights

High Performance

- Up to 600K IOPS to accelerate storage operations
- Massive sequential throughput of up to 12GB/s read and 9GB/s write

Cost-Effective Storage

- U.2 NVMe SSD to deliver better performance at lower costs
- Automated storage tiering to fully utilize SSD and HDD

Flexible Scalability

- Scale-out and scale-up expansions to easily expand performance and capacity

Easy to Use and Manage

- Single namespace for easier data access
- Auto-balancing to reduce the burden of storage management for IT staff

Introduction

EonStor GSe U.2 NVMe hybrid flash storage is a high performance unified storage solution with a single controller designed for SMB. Equipped with U.2 NVMe SSDs, it delivers high IOPS and throughput at a cost-effective price. This series supports both SAN and NAS services, provides block-level and file-level scale-out expansions to linearly increase performance and capacity, and comes with complete enterprise-grade data protection features that allow IT staff to focus on higher value projects. It thus makes a perfect fit for applications such as database, virtualization, M&E, file sharing, and backup.

End-to-End High Performance with U.2 NVMe SSD

Supporting PCIe 4.0, NVMe U.2 SSD, and 100GbE connectivity with RDMA, GSe U.2 NVMe storage delivers a higher speed with a lower latency, providing up to 12GB/s read and 9GB/s write in throughput and 600K on a single appliance.

Cost-Effectiveness and High Storage Efficiency

U.2 NVMe SSD is becoming the mainstream in the market as it combines the advantages of SAS and SATA SSDs, allowing enterprises to enjoy higher performance at a competitive price.

EonStor GSe U.2 NVMe storage supports hybrid storage, and with automated storage tiering, the storage system can automatically leverage the high throughput and low latency of U.2 NVMe SSDs for frequently accessed data, while using HDDs on expansion enclosures as data backup media, thereby boosting system performance at a reduced total cost of ownership.

EonStor GSe U.2 NVMe storage also comes with inline compression and offline deduplication, which reduces the storage capacity required and thus saves storage costs. The inline compression feature compresses raw files in real-time, which greatly reduces the data size and the transfer time. To deal with repeated files saved by manual backups or archiving, offline deduplication helps you automatically remove duplicate data from a cluster to free up storage space.

Flexible Scalability with Scale-out and Scale-up

Through scale-out expansion, you can linearly increase performance and capacity for both block-level and file-level data. When one storage appliance is no longer able to provide enough performance or capacity, you can simply add more appliances to form a cluster—with a maximum of 4 appliances.

Through scale-up expansion, each storage appliance can be connected to JBOD expansion enclosures to add up to 896 drives. Together with scale-out expansion, GSe U.2 NVMe storage supports more than 3000 drives with over 70PB storage capacity.

Easy Data Access and Simple IT Management

Users can access shared folders in a single root directory under a single namespace, so that they don't need to worry about where the data is placed. Auto-balancing is also supported to achieve the benefit of load balancing without the burden of manual IT planning and configuration.

Smart Management for SSD

EonStor GSe U.2 NVMe storage uses an intelligent algorithm to handle data writes and optimize SSD usage. The algorithm not only extends SSD lifespan by reducing the total amount of writes on an SSD but also prevents multiple SSDs from failing at the time and causing data loss. In addition, as EonStor GSe U.2 NVMe storage monitors SSD status in real time, it estimates the remaining lifespan of each SSD and sends the administrator a reminder to replace the SSD that is about to fail.

Essential Applications Designed for SMBs

EonStor GSe U.2 NVMe storage also comes with essential office applications for small and medium-sized businesses, such as email servers and office document software. Setting up and activating these applications can be completed with just a few clicks, even by those without a technical background. This greatly simplifies the tedious process of installing and configuring office-related software, thus saving time.

Complete Data Protection and Backup

EonStor GSe U.2 NVMe storage offers various data protection mechanisms to guarantee data safety. First, Infortrend's unique RAID technology ensures your data remains intact even in case of a drive failure. With snapshot, a flexible backup tool, you can back up local resources on a storage system by schedule, including volumes and shared folders, and roll back to a previous version when needed. For further protection, you can back up data to a remote GSe appliance using the remote replication feature, or to a public cloud with EonCloud Gateway.

Immutable object storage, another crucial feature for data protection, safeguards data against ransomware attacks. It retains data with WORM (write once read many) storage protection, where data gets "locked" and therefore cannot be modified, deleted, overwritten, or even encrypted by ransomware. By setting a retention period, you can easily follow government compliance requirements or company policies on data retention.

For companies requiring an easy-to-use and reliable storage solution for file backup, EonStor GSe U.2 NVMe storage can be utilized as a backup appliance, allowing you to leverage its backup server function to back up data from PC, file servers, and public cloud through an GUI interface. Additionally, you can set options such as a backup schedule and a retention period to best fit your needs.

Availability and Reliability

EonStor GSe U.2 NVMe storage is equipped with dual power supplies and cooling fans to help ensure high data availability. The Cache Backup Module (CBM) consists of a super capacitor and a flash module to prevent data loss during a power interruption or outage.

In addition, EonStor GSe U.2 NVMe storage offers HA service to deliver continuous availability with a near zero RTO (recovery time objective) and a zero RPO (recovery point objective). With two storage devices deployed at near sites, the HA service provides block-level active-active storage and file-level active-passive storage for business-critical applications that have an extremely low tolerance for downtime. Featuring synchronous remote replication and auto-failover, this solution ensures identical and complete copies of data are stored on both storage devices and avoids service downtime due to planned or unexpected events. Auto-failback is available in block-level HA service, allowing a storage device to resume services without switching manually.

Intuitive Management Software

EonStor GSe U.2 NVMe storage adopts EonOne, a web-based management software tool, to assist customers in raising storage and service efficiency for increased productivity. With its intuitive interface design, IT administrators can easily manage a cluster and multiple appliances, monitor performance and capacity usage, and complete system configurations, all from one centralized interface.

PHYSICAL SPECIFICATIONS

Product Series			GSe 2000U	GSe 3000U	GSe 3000UT	GSe 4000U
Form Factor	2U 24-bay		GSe 2024**U**	GSe 3024**U**	GSe 3024**UT**	GSe 4024**U**
			Note: U: NVMe storage **T**: High performance			
Controller			Single			
Cache Backup Technology			Super capacitor + flash module (optional)			
CPU			Intel® Xeon® D 2-Core	Intel® Xeon® D 4-Core	Intel® Xeon® D 4-Core	Intel® Xeon® D 6-Core
Cache Memory			Default DDR4 8GB, up to 64GB		Default DDR4 12GB, up to 192GB	
Supported Drives			2.5" U.2 NVMe SSD (must be purchased from Infortrend)			
Max. Drive Number	Via Expansion Enclosures, per Appliance		U.2 NVMe JBOD: 96 HDD/SSD JBOD: 896			
	Via Scale-out with Other Series of Appliances, per Cluster		U.2 NVMe JBOD: 384 HDD/SSD JBOD: 3584			
Max. SSD Cache Pool (Block Level)			4TB			
Onboard 10GbE Ports (SFP+)			0	2	0	0
Onboard 25GbE Ports (SFP28)			0	0	2	0
			Note: All the ports must be set to the same channel type (block-level or file-level).			
Onboard JBOF Expansion Ports			GSe 3024**UT**: 4, GSe 4024**U**: 4			
Host Board Slots			2	2	2	2
Host Board Options			• 16Gb/s FC x 4 • 32Gb/s FC x 2 • 32Gb/s FC x 4 • 10GbE (SFP+) x 2 • 25GbE (SFP28) x 2, RDMA • 25GbE (SFP28) x 4, RDMA • 12Gb/s SAS x 2		• 16Gb/s FC x 4 • 32Gb/s FC x 2 • 32Gb/s FC x 4 • 10GbE (SFP+) x 2 • 25GbE (SFP28) x 2, RDMA • 25GbE (SFP28) x 4, RDMA • 100GbE (QSFP28) x 1, RDMA • 100GbE (QSFP56) x 2, RDMA • 12Gb/s SAS x 2	
			Note: 1. At least 24GB memory is required per controller to use RDMA. 2. 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. 16Gb/s FC Ports			8	8	8	8
Max. 32Gb/s FC Ports			8	8	8	8
Max. 10GbE Ports (SFP+)			4	6	4	4
Max. 25GbE Ports (SFP28)			8	8	10	8
Max. 100GbE Ports (QSFP28)			0	0	2	2
Max. 100GbE Ports (QSFP56)			0	0	4	4
Max. 12Gb/s SAS Ports			4	4	4	4
Expansion Enclosures (JBODs)			JB 4024**U**, JB 3012**A**, JB 3016**A**, JB 3024**BA**, JB 3025**BA**, JB 3060**L**, JB 3090			
			Note: JB 4024**U** is supported only for GSe 3024**UT** and GSe 4024**U**.			
Dimensions (Without Chassis Ears and Protrusions) (W x H x D)			449 x 88 x 500 mm		449 x 88 x 530 mm	
Package Dimensions (W x H x D)			588 x 239 x 780 mm			
Power Supply Unit	Power Supplies (Redundant and Hot-swappable)	Global	530W x 2 (80 PLUS Bronze)			
		EU	800W x 2 (80 PLUS Titanium)			
	AC Voltage	Global	100-240VAC @10-5A			
		EU	100-127VAC @10A, 200-240VAC @5A			
	Frequency		50-60 Hz			
Safety Standards			• Safety: UL, BSMI, CB • Electromagnetic compatibility: CE, BSMI, FCC			

SOFTWARE SPECIFICATIONS

Max. Logical Drive Number		30
Max. Logical Drive Capacity		2PB
Stripe Size		16KB, 32KB, 64KB, 128KB, 256KB, 512KB, 1024KB (per logical drive)
Write Policy		Write-back or write-through (per logical drive)
Max. Pool Size		2PB
Max. Pool Number		30
Max. Volume Size		2PB
Max. Volume Number		1024
Max. Host LUN Mapping Number		4096
Max. Reserved Tag Number		256 (per Host-LUN connection)
Max. iSCSI Initiators		416
Max. Host Connection Number		128 (per FC)
RAID Options		RAID 0, RAID 1, RAID 3, RAID 5/5F, RAID 6/6F, RAID 10, RAID 30, RAID 50, RAID 60
Supported Protocols	File Level	CIFS/SMB (version 2.0/3.11), NFS (version 2/3/4), AFP (version 3.1.12), FTP/FXP (vsftp 2.3.4), WebDAV (httpd package 2.4.6)
	Block Level	FC, iSCSI, iSCSI/RDMA (iSER), SAS, NVMe/TCP, NVMe/RDMA, NVMe/FC
		Note: 1. NVMe/RDMA is supported only on host channels with RDMA functionality. 2. iSCSI/RDMA (iSER) is not supported on GSe 2000**U** Series.
	Object Level	RESTful API (Amazon S3-compatible API)
	GPUDirect Storage (GDS)	Supported on NVMe-oF (Block) and NFS over RDMA (File) environments for direct GPU memory access.
File Level	Max. File System Size	2PB
	Max. Number of Local Users	20000
	Max. Number of Local Groups	512
	Max. Number of Domain Users and Groups	The number depends on the memory capacity of a single controller and the system configuration. • 8/12GB: 50,000 • 16/24GB: 100,000 • 32/48GB: 200,000 • 64GB: 400,000 • 96GB and up: 500,000
	Max. Number of Shared Folders	1024 (NFS/CIFS/FTP) | 255 (AFP)
	Max. Number of Rsync Jobs	1024
	Max. Number of Concurrent Rsync Processes	64
	Max. Number of Connections	2048 (NFS/CIFS/AFP) | 1024 (FTP)
Management		• Web-based EonOne management software • User account management • Group management • Folder management - folder access control • Quota management • Folder encryption with AES • Integration with Microsoft Active Directory (AD) and Linux LDAP • Storage Resource Management to analyze history of resource usage • Multi-factor authentication login mechanism • File-level QoS (network traffic control) • Command-line interface (CLI)
Availability and Reliability		• Immutable object storage • Hot-swappable hardware modules • Device mapper • Antivirus • Trunk group • Cache safe technology • UPS • WORM (file level only) • SMB Multichannel
Efficiency		• Block level: Offline compression, offline deduplication • File level: Inline compression, offline deduplication
Notification		• Email • SNMP traps
Applications		• Anti-virus • Backup Server • Docker • LDAP Server • Mail Server • Nextcloud • Project Server • Proxy Server • Syslog Server • VPN Server • Web Server
Supported Cloud Services		EonCloud Gateway supports integration with the following cloud providers: Amazon S3, Microsoft Azure, Alibaba Cloud, OpenStack, Baidu Cloud, Google Cloud, Tencent Cloud, Wasabi Cloud, etc.
		Note: For complete information about supported cloud providers, please refer to EonCloud Gateway webpage **https://www.infortrend.com/global/solutions/eoncloud**
Supported OS		Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, MacOS X, VMware
		Note: For supported OS versions, please refer to the Compatibility Guide.

DATA SERVICES

Thin Provisioning		Block Level	Default	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space.	
Local Replication	Snapshot	Folder-based	Optional	Snapshot images per folder: 1024 (supported on Btrfs file system only)	
		Volume-based	Default	Snapshot images per source volume: 64	Snapshot images per system: 128
			Optional	Snapshot images per source volume: 256	Snapshot images per system: 4096
	Volume Copy/Mirror		Default	Replication pairs per source volume: 4	Replication pairs per system: 16
			Optional	Replication pairs per source volume: 8	Replication pairs per system: 256
Remote Replication		File Level	Default	Support Rsync with 128-bit SSH encryption	
		Block Level	Optional	Replication pairs per source volume: 8	Replication pairs per system: 64
				Note: The maximum number of replication pairs per source volume is 8, whether they are remote asynchronous pairs, remote synchronous pairs, or local volume pairs	
Automated Storage Tiering			Optional	Storage tiers per pool: 4	
Scale-out		File Level	Default	Appliances per cluster: 1	
			Optional	Appliances per cluster: 4	
		Block Level	Default	Appliances per cluster: 4	
HA Service		File Level	Optional	Delivering continuous availability and eliminating downtime for mission-critical workloads that require non-stop operations	
		Block Level		**Note:** HA Service is not available on GSe 2000**U**.	
SSD Cache		File Level	Default	Accelerating file operations and data access performance for both read and write Max. SSD number: 8	
		Block Level	Default	Accelerating data access in random read-intensive environments (e.g. OLTP) Max. SSD number: 4	
				Recommended DIMM capacity per controller for SSD cache pool	
				DRAM : 8GB	Max SSD cache pool size : 0.5TB
				DRAM : 16GB	Max SSD cache pool size : 1TB
				DRAM : 32GB	Max SSD cache pool size : 2TB
				DRAM : 64GB and up	Max SSD cache pool size : 4TB

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
		Note: Options may vary by region. For more details, please contact our sales representatives.
	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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