EonStor GSe SAS HDD Storage

Scale-out Unified Storage for SMB

Highlights

High Performance and Scalability

- Up to 600K IOPS
- Up to 8GB/s read and 5.8GB/s write in throughput
- Scale-out and scale-up expansions to easily increase performance and capacity

High-Density Design

- Reduce hardware footprint with 4U 40/60-bay models

Flexible Interface Options

- Modular host boards with FC, SAS, and iSCSI protocols for host connection

Applications & Data Protection

- Various built-in applications, including Proxy server, LDAP server, Syslog server, and VPN server
- Integrated full-featured RAID protection
- Rich backup functions, including snapshot, volume copy, volume mirror, rsync, and IDR
- Crucial security features against ransomware attacks, including immutable object storage, WORM, and multi-factor authentication

Introduction

EonStor GSe SAS HDD storage, available from entry-level to high-end models, is a unified storage series that incorporates full-featured, enterprise-grade data services with RAID protection to deliver high performance and scalability without sacrificing affordability. With the feature of cloud integration, EonStor GSe allows SMBs and SMEs to integrate and expand their local SAN/NAS storage architecture into cloud services in an easy and cost-effectively manner.

Unified Storage System

Designed for SMBs, EonStor GSe allows companies to store and manage their valuable data at a reduced total cost of ownership by integrating NAS and SAN into one unified storage system.

Based on improved hardware and firmware, this series supports file-level protocols, including CIFS, NFS, AFP, and FTP, as well as block-level protocols, such as Fiber Channel, iSCSI, and SAS. By integrating these protocols and harnessing the power of Intel® multi-core CPU, EonStor GSe delivers not only outstanding flexibility but also incredible performance.

Moreover, EonStor GSe supports hybrid storage, and with its SSD cache and automated storage tiering, the storage system can automatically leverage the high performance I/Os of SSDs for frequently accessed data, and use HDDs for massive data archive, thereby increasing the system performance and ROI.

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 environments. When one GSe unit is no longer able to provide enough performance or capacity, you can simply add more GSe appliances to form a cluster—with a maximum of 4 GS units.

Through scale-up expansion, each GSe unit can be connected to JBOD expansion enclosures to add up to 896 drives. Together with scale-out expansion, GSe supports more than 3000 drives with over 50PB storage capacity.

Availability & Reliability

- Dual power supplies and cooling fans to ensure continuous uptime and service stability
- Super capacitor and a flash module to ensure data safety during a power outage
- HA service to ensure service continuity during site failures or system maintenance

Easy Maintenance

- Modular hardware design to simplify maintenance and ensure uninterrupted operations

Intuitive GUI

- EonOne management interface provides a single control center for system management and resources monitoring.

Comprehensive Business Applications & Data Protection

Integration with Microsoft AD and LDAP

EonStor GSe provides easy integration with existing business network environments through Microsoft® Active Directory (AD) and LDAP directory services, which allows system administrators to easily configure shared folder access permission by user account through ACL. Furthermore, EonStor GSe has perfectly integrated the LDAP Server function into the system, so customers do not need to construct additional LDAP Servers.

Comprehensive Data Services

EonStor GSe comes with inline compression and offline deduplication, which reduces the overall storage capacity required and thus saves costs.

To minimize the risk of data loss from unexpected disk failures, natural disasters, or power outages, EonStor GSe supports various backup features, such as Intelligent Drive Recovery (IDR), snapshot, local/remote replication, and file-level rsync.

EonStor GSe also incorporates crucial safety features to safeguard data from ransomware attacks. With immutable object storage, 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. To provide further security for administrative account access, multi-factor authentication (MFA) is also supported to reduce the risk of malicious attacks following password theft.

Complete Cloud Features

Integrated with the Intelligent Cloud Gateway Engine, EonStor GSe supports a wide range of both private and public cloud services, including Amazon S3 and Microsoft Azure, and offers various cloud features such as cloud tiering, cloud cache, and cloud backup to make the most out of your cloud storage. Combining local and cloud storage, these features allocate data in an automatic and optimal manner while saving setup and maintenance costs.

Availability & Reliability

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

In addition, EonStor GSe 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 a block-level active-active storage solution for applications that have an extremely low tolerance for downtime. Featuring synchronous remote replication, auto-failover and failback, 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.

Easy Maintenance

EonStor GSe features a modular hardware design, including hot-swappable fans and power supply units, to simplify maintenance and ensure continuous operations.

PHYSICAL SPECIFICATIONS

Product Series		GSe 3000 G3	GSe 4000 G3
Form Factor	2U 12-bay	GSe 3012 **G3**	GSe 4012 **G3**
	3U 16-bay	GSe 3016 **G3**	GSe 4016 **G3**
	4U 24-bay	GSe 3024 **G3**	GSe 4024 **G3**
	4U 40-bay	GSe 3040**T G3** GSe 3040**TH G3**	GSe 4040 **G3** GSe 4040**H G3**
	4U 60-bay	GSe 3060**T G3** GSe 3060**TH G3**	GSe 4060 **G3** GSe 4060**H G3**
		Note: **T**: High performance **H**: U.2 SSD cache	
Controller		Single	
Cache Backup Technology (Optional)		Super capacitor + flash module	
CPU		Intel® Xeon® D 4-Core	Intel® Xeon® D 6-Core
Cache Memory		2U 12-bay/3U 16-bay/4U 24-bay: Default DDR4 8GB Expandable up to 192GB 4U 40-bay/60-bay: Default DDR4 12GB Expandable up to 192GB	
Supported Drives		2.5" SAS and SATA SSD 2.5" 12Gb/s SAS 10,000 or 15,000 RPM HDD 3.5" 12Gb/s NL-SAS 7,200 RPM HDD 3.5" 6Gb/s SATA 7,200 RPM HDD Bundled 2.5" U.2 NVMe SSD for U.2 SSD cache models	
		Note: For the latest compatibility details, refer to our official website for the latest Compatibility Matrix.	
Max. Drive Number		896	
Max. Block-level SSD Cache Pool		4TB	
Onboard 25GbE Ports (SFP28)		2	-
Max. Host Board Slots		2	
Max. Expansion Boards (12Gb/s SAS x 2)		1	
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 12Gb/s SAS x 2	
		Note: For complete information, refer to our official website for the latest Host Board and Memory Guide.	
Max. 16Gb/s FC Ports		8	
Max. 32Gb/s FC Ports		8	
Max. 10GbE Ports (SFP+)		4	
Max. 25GbE Ports (SFP28)		6	4
Max. 12Gb/s SAS Ports		4	
Expansion Enclosures (JBODs)		2U 12-bay: JB 3012A, JB 3016A, JB 3060L 3U 16-bay: JB 3016A, JB 3060L 4U 24-bay/40-bay/60-bay: JB 3060L	
Dimensions (Without Chassis Ears and Protrusions) (W x H x D)		2U 12-bay: 449 x 88 x 509.8 mm 3U 16-bay: 449 x 130 x 509.8 mm 4U 24-bay: 449 x 174.6 x 509.8 mm 4U 40-bay: 443.2 x 176 x 735.8 mm 4U 60-bay: 443.2 x 176 x 849.8 mm	
Package Dimensions (W x H x D)		2U 12-bay: 780 x 379 x 588 mm 3U 16-bay: 780 x 423 x 588 mm 4U 24-bay: 780 x 465 x 588 mm 4U 40-bay: 620 x 460 x 1032 mm 4U 60-bay: 620 x 460 x 1140 mm	
Power Supply Unit	Power Supplies (Redundant and Hot-swappable)	2U 12-bay/3U 16-bay/4U 24-bay: 530W x 2 (80 PLUS Bronze, 80 PLUS Gold for EU) 4U 40-bay/60-bay: 1200W x 2 (80 PLUS Platinum)	
	AC Voltage	2U 12-bay/3U 16-bay/4U 24-bay: 100VAC @10A to 240VAC @5A 4U 40-bay/60-bay: 100-127VAC @10A, 200-240VAC @8A	
	Frequency	50-60 Hz	
Safety Standards		• Electromagnetic Compatibility: CE, BSMI, FCC • Safety: UL, BSMI, CB	

PHYSICAL SPECIFICATIONS

Product Series		GSe 1000 Gen2	GSe 2000	GSe 3000 Gen2	GSe 4000 Gen2
Form Factor	2U 12-bay	GSe 1012 **2**	GSe 2012 / GSe 2012**T**	-	-
	3U 16-bay	GSe 1016 **2**	GSe 2016 / GSe 2016**T**	GSe 3016 **2**	GSe 4016 **2**
	4U 24-bay	-	-	GSe 3024 **2**	GSe 4024 **2**
		Note: **2**: Gen2 **T**: High performance			
Controller		Single			
Cache Backup Technology (Optional)		Super capacitor + flash module			
CPU		Intel® Avoton® 4-Core	Intel® Pentium® 2 or 4-Core	Intel® Xeon® 4-Core	Intel® Xeon® 8-Core
Cache Memory (per system)		Default DDR3 8GB Expantable up to 16GB	Default DDR4 8GB Expantable up to 64GB	Default DDR4 8GB Expandable up to 256GB	
Supported Drives		3.5" 6Gb/s SATA 7,200 RPM HDD 2.5" SAS or SATA SSD 2.5" 12Gb/s SAS 10,000 or 15,000 RPM HDD 3.5" 12Gb/s NL-SAS 7,200 RPM HDD			
		Note: For the latest compatibility details, refer to our official website for the latest Compatibility Matrix.			
Max. Drive Number		448	896 (with expansion board)		
Max. Block-level SSD Cache Pool		0.6TB	1.6TB	4TB	4TB
Onboard SAS Expansion Port		1	1	2	2
Onboard 1GbE Ports (RJ-45)		4	4	0	0
Onboard 10GbE Ports (SFP+)		0	0	4	4
Max. Host Board Slots		1	2	2	2
Max. Expansion Boards (12Gb/s SAS x 2)		0	1	1	1
Host Board Options		16Gb/s FC x 4 32Gb/s FC x 2 1GbE (RJ-45) x 4 10GbE (SFP+) x 2 25GbE (SFP28) x 2 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 12Gb/s SAS x 2	
		Note: For complete information, refer to our official website for the latest Host Board and Memory Guide.			
Max. 16Gb/s FC Ports		4	8	8	8
Max. 32Gb/s FC Ports		2	4	4	4
Max. 1GbE Ports		8	12	0	0
Max. 10GbE Ports (SFP+)		2	4	8	8
Max. 25GbE Ports (SFP28)		2	4	4	4
Max. 12Gb/s SAS Ports		3	3	4	4
Expansion Enclosures (JBODs)		JB 3012A, JB 3016A, JB 3024BA, JB 3025BA, JB 3060L		JB 3012A, JB 3016A, JB 3025BA, JB 3060L	
Dimensions (Without Chassis Ears and Protrusions) (W x H x D)		2U 12-bay: 449 x 88 x 500 mm 3U 16-bay: 449 x 130 x 500 mm 4U 24-bay: 449 x 174.4 x 500 mm			
Package Dimensions (W x H x D)		2U 12-bay: 780 x 379 x 588 mm 3U 16-bay: 780 x 423 x 588 mm 4U 24-bay: 780 x 465 x 588 mm			
Power Supply Unit	Power Supplies (Redundant and Hot-swappable)	460W x 2 (80 PLUS Bronze)	530W x 2 (80 PLUS Bronze)		
	AC Voltage	100VAC @8A to 240VAC @4A	100VAC @10A to 240VAC @5A		
	Frequency	50-60 HZ	47-63 HZ		
Safety Standard		• Electromagnetic Compatibility: CE, BSMI, FCC • Safety: UL/cUL, BSMI, CB			

SOFTWARE SPECIFICATIONS

Max. Logical Drive Number		30
Max. Logical Drive Capacity		512TB
Stripe Size		16KB, 32KB, 64KB, 128KB, 256KB, 512KB, or 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 (per Host-LUN Connection)		256
Max. iSCSI Initiators		416
Max. Host Connection Number (per FC)		128
RAID Options		RAID 0, RAID 1, RAID 3, RAID 5, RAID 6, RAID 10, RAID 30, RAID 50, RAID 60
Supported Protocols	File Level	CIFS/SMB (Version 2.0/3.0), 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, SAS
	Object Level	RESTful API
File Level	Max. File System Size	2PB
	Max. Number of User Accounts	20000
	Max. Number of User Groups	512
	Max. Number of Shared Folder	2048 (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		• Muti-factor authentication login mechanism • 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
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		• Inline compression • Offline deduplication
Notification		• Email • SNMP traps
Applications		• Web-based file explorer • Syslog server • LDAP server • Proxy server • VPN server • Docker
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 cloud provides support, please refer to EonCloud Gateway webpage https://www.infortrend.com/global/solutions/eoncloud
Supported OS		Microsoft Windows Server, Red Hat Enterprise Linux, Mac OS X, VMware. Note: For the latest compatibility details, refer to our official website for the latest Compatibility Matrix.

DATA SERVICES

Thin Provisioning		Block level	Default	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space.	
File Snapshot			Optional	Snapshot images per folder: 1024	
Local Replication	Snapshot	Block level	Default	Snapshot images per source volume: 64	Snapshot images per pool: 128
			Optional	Snapshot images per source volume: 256	Snapshot images per pool: 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	Rsync with 128-bit SSH encryption	
		Block level	Optional	Replication pairs per source volume: 8	Replication pairs per system: 64
				Note: 1. The maximum number of replication pairs per source volume is 8, whether they are remote asynchronous pairs, remote synchronous pairs, or local volume pairs. 2. 16Gb FC x 4, 32Gb FC x 2, and 32Gb FC x 4 host boards do not support Remote Replication.	
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		Block level	Optional	Delivering continuous availability and eliminating downtime for mission-critical workloads that require non-stop operations	
				Note: HA Service is available on GSe 3000 Gen2/G3 and GSe 4000 Gen2/G3 only.	
SSD Cache		File level	Default	Accelerating file operations and data access performance for both read and write Max. SSD number per controller: 8	
		Block level	Default	Accelerating data access in random read-intensive environments (e.g. OLTP) Max. SSD number per controller: 4	
				Recommended DIMM capacity per controller for SSD Cache pool for GSe 1000 Gen2, GSe 2000	
				DRAM: 8GB	Max SSD Cache Pool Size: 0.4TB
				DRAM: 16GB	Max SSD Cache Pool Size: 0.6TB
				DRAM: 32GB	Max SSD Cache Pool Size: 1TB
				DRAM: 64GB	Max SSD Cache Pool Size: 1.6TB
				Recommended DIMM capacity for SSD Cache pool for GSe 3000/4000 Gen2 / G3	
				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 8x5 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 service can be upgraded to 5 years. • Upgrade: Replacement part dispatch on the next business day • Advanced service: 24x7 phone, web, and email support + onsite diagnostics on the next business day • Premium service: 24x7 phone, web, and email support + onsite diagnostics in 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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