Infortrend®

EonStor GS Family

Scale-out High Availability Unified Storage for Enterprise

Highlights

Extreme Performance and Scalability

- Up to 900K end-to-end IOPS to accelerate storage operations
- Massive sequential throughput of up to 11GB/s read and 8GB/s write per GS appliance
- Supports scale-out and scale-up, a single GS cluster can support more than 40PB

Easier to Use and Manage

- Provides a single namespace for easier access and auto-balancing to reduce the burden of IT storage management

Lower Total Cost of Ownership

- Uses SSDs for high-performance IO and NL-SAS/ SATA HDDs for massive data archiving via automated storage tiering
- Uses several SSDs for cache to reach near all-flash system performance; this helps to increase performance not only for database and VDI applications but also for file operation and NAS performance

Introduction

The EonStor GS series forms the backbone of high-performance enterprise storage solution with its powerful performance, flexibility, and high expandability helping to efficiently boost overall productivity. EonStor GS can handle large amounts of I/O and file transfers even under high workloads and are especially suitable for hybrid environments adopting SAN, NAS, and Cloud integration. It is perfect for those who want performance, capacity, and high port count, and at the same time, it is ideal for budget-conscious applications as it can easily meet all general storage needs.

High Performance

EonStor GS series provides both high IOPS and high throughput. Supporting high-speed transmission interfaces and protocols, such as 32Gb/s FC and 40Gb/s iSCSI, the series delivers up to 11 GB/s read and 8 GB/s write in throughput and 900K IOPS on a single appliance.

High Scalability when Needed

EonStor GS supports scale-out and scale-up feature to easily expand performance and capacity to more than 40PB.

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

Through the scale-up expansion, each GS supports JBOD expansion enclosures to add up to 896 hard drives for increasing storage capacity.

Easy Data Access for Users and Simple IT Management

Users can access shared folders in a single root directory under a single namespace, so 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.

High Efficiency

EonStor GS supports hybrid storage. With the automated storage tiering function, EonStor GS storage can automatically leverage the advantages of SSDs for high-performance IO and HDDs for massive data archiving. It allows users to flexibly assign applications to tiers distinguished by different drive types and RAID levels.

EonStor GS supports SSD cache that leverages high speed and low latency of SSDs for delivering faster performance when accessing frequently demanded vital data. The feature helps users to meet high I/O loads and storage capacity requirements while dramatically boosting performance. It presents advantages for read-intensive SAN environments, such as online transaction processing (OLTP) and email (Microsoft Exchange). It also enhances read and write performance for NAS and improves user experience for file operation when a large number of files are stored in GS.

Complete Data Protection and Backup

EonStor GS offers multiple data protection features to guarantee that data is tightly protected. For solid-state drive, EonStor GS incorporated Infortrend's unique RAID technology which helps the system to run normally while ensuring your data is fully protected even when a disk gets damaged. In terms of local data backup, EonStor GS supports a flexible backup solution – snapshot. Users can back up all the resources within the storage system by schedule, including volumes, shared folder, and fulfill a rollback to a previous version at any time. As for remote backup, you can use the remote replication feature to back up the files to a remote GS appliance, or even to a public cloud with the EonCloud gateway feature.

High Reliability

From power supplies, fans, controllers, to host boards, the modular design of all these hardware components lowers maintenance complexity and provides fast and precise technical support and RMA services, keeping EonStor GS safe from any downtime to maintain nonstop services, increase productivity, and gain a competitive edge.

Intelligent Management of SSD Drives

EonStor GS has an intelligent algorithm that arranges data writing in the storage appliance. The algorithm not only reduces the total amount of writes on an SSD to prolong its lifespan but also prevents multiple SSDs from failing at the time and causing data loss. In addition, as EonStor GS monitors SSD status in real time, it can estimate its remaining lifespan and send a notification to remind the administrator to replace the SSD which is about to fail.

Easy Management

With the constant evolution of storage platforms, EonStor GS adopted the EonOne management software to assist customers in improving storage and service efficiency for increasing productivity. Its intuitive interface design enables centralized management of cluster and multiple appliances, monitoring of performance and capacity usage, and completion of all related system configurations.

PHYSICAL SPECIFICATIONS

Product Series		GS 1000 Gen2	GS 2000	GS 3000 Gen2	GS 4000 Gen2
Form Factor & Available Model	2U 12-bay	GS 1012**R2CF/S2CF**	GS 2012**R/S** GS 2012**RT/ST**	GS 3012**R2CF/S2CF**	GS 4012**R2CF/S2CF**
	2U 24-bay	GS 1024**R2CBF/S2CBF**	GS 2024**RB/SB** GS 2024**RTB/STB**	-	-
	2U 25-bay	-	-	GS 3025**R2CBF/S2CBF**	GS 4025**R2CBF/S2CBF**
	3U 16-bay	GS 1016**R2CF/S2CF**	GS 2016**R/S** GS 2016**RT/ST**	GS 3016**R2CF/S2CF**	GS 4016**R2CF/S2CF**
	4U 24-bay	GS 1024**R2CF/S2CF**	GS 2024**R/S** GS 2024**RT/ST**	GS 3024**R2CF/S2CF**	GS 4024**R2CF/S2CF**
	4U 60-bay	-	-	GS 3060**R2CLF/G2LF**	GS 4060**R2CLF/G2LF**
		Note: **G**: Single controller, not upgradable **S**: Single controller, upgradable to dual redundant controllers **R**: Dual redundant controllers **2**: Gen2 **T**: High performance **C**: Super capacitor **B**: 2.5" drive **L**: One drawer **F**: EonCloud Gateway			
Controller		Dual redundant or single upgradable to dual redundant		Single, dual redundant, or single upgradable to dual redundant	
Cache Backup Technology		Super capacitor + flash module (Only for upgradable to dual redundant controller and dual redundant controllers models)			
CPU		Intel® Atom® 4 Core	Intel® Pentium® 2 or 4 core	Intel® Xeon® D 4 Core	Intel® Xeon® D 8 Core
Cache Memory (per System)	Single Controlle	Default DDR3 8GB Expandable up to 16GB	Default DDR4 8GB Expandable up to 64GB	Default DDR4 8GB, Expandable up to 256GB	
	Redundant Controller	Default DDR3 16GB Expandable up to 32GB	Default DDR4 16GB Expandable up to 128GB	Default DDR4 16GB, Expandable up to 512GB	
Supported Drives		2.5" SAS SSD 2.5" 12Gb/s SAS 10,000 or 15,000 RPM HDD 3.5" 12Gb/s NL-SAS 7,200 RPM HDD 2.5" SATA SSD, 3.5" 6Gb/s SATA 7,200 RPM HDD (**G/S** model only)			
		Note: For the latest compatibility details, refer to our official website for the latest Compatibility Matrix.			
Max. Drive Number	via expansion enclosure, per appliance	448	896	896	896
	via scale-out with other series of appliances, per cluster	3136	3584	3584	3584
Max. SSD Cache Pool (Block-level)		1.6TB	3.2TB	4TB	4TB
Onboard SAS Expansion Ports		2	2	4	4
Onboard 1GbE Ports		8	8	0	0
Onboard 10GbE Ports (SFP+)		0	0	8	8
Max. Host Board Slots		2	4	4	4
Max. Expansion Board		0	2	2	2
		Note: The expansion board can only be installed in the HB2 slot and has 12Gb/s SAS x 2 ports only connectable with expansion enclosures.			
Host Board Options		16Gb/s FC x 4 32Gb/s FC x 2 1GbE (RJ-45) x 4 10GbE (SFP+) x 2 10GbE (RJ-45) x 2 25GbE (SFP28) x 2 40GbE (QSFP+) 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 10GbE (RJ-45) x 2 25GbE (SFP28) x 2 40GbE (QSFP+) x 2 12Gb/s SAS x 2	
		Note: 1. For redundant controller models, identical host boards must be installed in the same order on both controllers. 2. FC connectivity supports DAS (Direct-Attached-Storage) connection via FC HBA cards and switched fabric connection.			
Max. 16Gb/s FC Ports		8	16	16	16
Max. 32Gb/s FC Ports		4	8	16	16
Max. 1GbE Ports		16	24	0	0
Max. 10GbE Ports (RJ-45)		4	8	8	8
Max. 10GbE Ports (SFP+)		4	8	16	16
Max. 25GbE Ports (SFP28)		4	8	8	8
Max. 40GbE Ports (QSFP+)		4	8	8	8
Max. 12Gb/s SAS Ports		6	10	12	12
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 2U 24-bay: 449 x 88 x 500 mm 2U 25-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 4U 60-bay: 447.6 x 176 x 840.9 mm	
Package Dimensions (W x H x D)		2U 12-bay: 780 x 379 x 588 mm 2U 24-bay: 780 x 338 x 588 mm 2U 25-bay: 780 x 340 x 588 mm		3U 16-bay: 780 x 423 x 588 mm 4U 24-bay: 780 x 465 x 588 mm 4U 60-bay: 620 x 460 x 1140 mm	
Power Supply Unit	Power Supplies (Redundant and Hot-swappable)	460W x 2 (80 PLUS Bronze)		GS 3000/4000: 530W x 2 (80 PLUS Bronze) GS 3060L/4060L: 1200W x 2 (80 PLUS Platinum)	
	AC Voltage	100VAC @8A to 240VAC @4A		GS 3000/4000: 100VAC @10A to 240VAC @5A GS 3060L/4060L: 200-240VAC @7.08A	
	Frequency	50-60 Hz		GS 3000/4000: 47-63 Hz GS 3060L/4060L: 50-60 Hz	
Safety Standards		• Electromagnetic Compatibility: CE, BSMI, FCC • Safety: UL, BSMI, CB			

SOFTWARE SPECIFICATIONS

Max. Logical Drives Number			32
Max. Logical Drives Capacity			512TB
Configurable Stripe Size			16KB, 32KB, 64KB, 128KB, 256KB, 512KB, or 1024KB per logical drive
Configurable Writes Policy			Write-Back or Write-Through per logical drive. This policy can be modified.
Max. Pool Size			2PB
Max. Pool Number			32
Max. Volume Size			2PB
Max. Volume Number (per pool/per system)			1024
Max. Host LUN Mapping Number			4096
Max. Reserved Tag Number (per Host-LUN Connection)			256
Max. iSCSI Initiators (per Controller)			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
Protocol Support	File Level Protocol		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 Protocol		FC, iSCSI, SAS
	Object Level Protocol		RESTful API
File Level	Max. File System Size		2PB
	Max. Number of User Accounts		20000
	Max. Number of User Groups		512
	Max. Number of Folder Sharing		2048 (NFS/CIFS/FTP) | 255 (AFP)
	Max. Number of Rsync Jobs		1024
	Max. Number of Rsync Concurrent Processes		64
	Max. Number of Concurrent Connections	NFS/CIFS/AFP	• 16 GB memory: 200 • 32 GB memory: 512 • 64 GB memory: 1024 • 128 GB memory: 2048
		FTP	• With any memory: 1024
Management			• User account management • Group management • Folder management - folder access control • Quota management • Integration with Microsoft Active Directory (AD) and LDAP • Folder encryption with AES • Web-based EonOne management software • Storage Resource Management to analyze history records of resource usage
Availability and Reliability			• Hot-swappable hardware modules • Device mapper support • Antivirus • Trunk group support • Cache Safe technology • UPS • WORM (For file level only) • SMB Multichannel
Notification			• Email • SNMP traps
Applications			• File explorer • Proxy server • Syslog server • VPN server • LDAP server • Docker
Cloud Feature			EonCloud Gateway supports the integration with following cloud providers: Amazon S3, Microsoft Azure, Alibaba Cloud, OpenStack, Baidu Cloud,Google Cloud, Tencent Cloud, Wasabi Cloud, etc. 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

Self-encrypting Drives			Default	Unique encryption mechanisms secure data on drives and make data deletion simple and complete.	
Thin Provisioning			Default	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space.	
Local Replication	Snapshot	File level	Optional	Snapshot images per folder: 1024	
		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	Support 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	2 or 4 storage tiers based on drive types	
Scale-out		File-level	Default	1 appliance	
			Optional	Growing from 1 appliance with up to a 4 appliances cluster	
		Block-level	Default	Growing from 1 appliance with up to a 4 appliances cluster	
SSD Cache		File-level	Optional	Accelerating file operations, and data access performance for both read and write Supports up to eight SSDs per controller	
		Block-level	Optional	Accelerating data access for random read-intensive environments, such as OLTP	
				Supports up to four SSDs per controller	
				Recommended DIMM capacity per controller for SSD Cache pool for GS 1000 Gen2, GS 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
				DRAM: 128GB and up	Max SSD Cache Pool Size: 3.2TB
				Recommended DIMM capacity per controller for SSD Cache pool for GS 3000/4000 Gen2	
				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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