Infortrend®

EonStor GS SAS SSD All-Flash Storage

Scale-out High Availability Unified Storage for Enterprises

Highlights

High Performance and Scalability

- Up to 900K IOPS to accelerate storage operations
- Massive sequential throughput of up to 11GB/s read and 8GB/s write per appliance
- Scale-out and scale-up expansions, providing more than 50PB in a single GS cluster

Easy to Use and Manage

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

Lower Total Cost of Ownership

- Automated tiering to balance cost with performance between SSDs and HDDs

Nondisruptive Operations

- HA service ensures non-stop operations with a near-zero RTO (recovery time objective) by deploying two storage devices to provide services from two separate sites.

Introduction

EonStor GS SAS SSD storage series is a unified storage solution built for enterprises to handle large amounts of I/O and file transfers under high workloads. Supporting hybrid environments adopting SAN, NAS, and cloud integration, this series is perfect for those who require performance and capacity, while at the same time ideal for budget-conscious applications as it can easily meet general storage needs.

High Performance

EonStor GS provides both high IOPS and high throughput to handle large amounts of I/O and file transfers, even under heavy workloads. The GS SAS SSD storage series, which features high-speed transmission interfaces and protocols, delivers up to 900K IOPS, 11Gb/s read and 8Gb/s write in throughput on a single appliance.

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

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

Easy Data Access and Simple IT Management

Users can access shared folders in a single root directory under a single namespace, without having to worry about where the data is stored. Auto-balancing is also supported to achieve load balancing, which relieves the burden of manual planning and configuration for IT personnel.

Storage Efficiency with Better TCO

EonStor GS supports hybrid storage, and with automated storage tiering, the storage system can automatically leverage the high performance I/Os of SSDs for frequently accessed data, and use NL-SAS/SATA HDDs on expansion enclosures for massive data archive, thereby boosting system performance at a reduced total cost of ownership (TCO).

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

Smart Management of SSD

EonStor GS 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. Moreover, as EonStor GS 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.

Complete Data Protection and Backup

EonStor GS 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 GS 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.

New Level of High Availability

From power supplies, cooling fans, to controllers, the EonStor GS appliance is built in a modular, redundant, and hot-swappable hardware design, which reduces maintenance complexity and ensures uninterrupted services, whether during a regular system upgrade or even in an unplanned maintenance event due to a component failure.

In addition, EonStor GS 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 business-critical 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.

Intuitive Management Software

EonStor GS 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		GS 1000B Gen2	GS 2000B	GS 3000B Gen2	GS 4000B Gen2
Form Factor	2U 24-bay	GS 1024**R2B/S2B**	GS 2024**RB/SB** GS 2024**RTB/STB**	-	-
	2U 25-bay	-	-	GS 3025**R2B/S2B**	GS 4025**R2B/S2B**
		Note: **S**: Single controller, upgradable to dual redundant controllers **R**: Dual redundant controllers **2**: Gen2 **B**: 2.5" drive **T**: High performance			
Controller		Dual redundant or single upgradable to dual redundant		Dual redundant, or single upgradable to dual redundant	
Cache Backup Technology		Super capacitor + flash module			
CPU		Intel® Atom® 4 Core	Intel® Pentium® 2 or 4 core	Intel® Xeon® D 4 Core	Intel® Xeon® D 8 Core
Cache Memory	Single Controller	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" SATA SSD (**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)		1TB	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 Boards (12Gb/s SAS x 2)		0	2	2	2
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		8	16	16	16
Max. 32Gb/s FC Ports		4	8	16	16
Max. 1GbE Ports		16	24	0	0
Max. 10GbE Ports (SFP+)		4	8	16	16
Max. 25GbE Ports (SFP28)		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)		449 x 88 x 500 mm			
Package Dimensions (W x H x D)		2U 24-bay: 780 x 338 x 588 mm		2U 25-bay: 780 x 340 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 Standards		• Electromagnetic Compatibility: CE, BSMI, FCC • Safety: UL, 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 (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	
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	• SMI-S standard interface for hypervisor management applications • 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 GS 3000B Gen2 and GS 4000B Gen2.
SSD Cache	File level	Optional	Accelerating file operations and data access performance for both read and write Max. SSD number per controller: 8
	Block level	Optional	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 GS 1000B Gen2, GS 2000B 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 Max SSD Cache Pool Size: 3.2TB Recommended DIMM capacity for SSD Cache pool for GS 3000B/4000B 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