



# EonStor GS SAS SSD Hybrid 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 70PB 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.

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

## 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 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 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 <b>R2B/S2B</b>	GS 2024 <b>RB/SB</b> GS 2024 <b>RTB/STB</b>	-	-
	2U 25-bay	-	-	GS 3025 <b>R2B/S2B</b>	GS 4025 <b>R2B/S2B</b>
		<b>Note: R:</b> Dual redundant controllers <b>S:</b> Single upgradable to dual redundant controllers <b>2:</b> Gen2 <b>3:</b> G3 <b>T:</b> High performance <b>B:</b> 2.5" drive			
Controller		Dual redundant or single upgradable to dual redundant			
Cache Backup Technology		Super capacitor + flash module			
CPU		Intel® Atom® 4-Core	Intel® Pentium® 2-Core Intel® Pentium® 4-Core (for <b>T</b> models)	Intel® Xeon® D 4-Core	Intel® Xeon® D 8-Core
Cache Memory	Single Controller	Default DDR3 8GB, up to 16GB	Default DDR4 8GB, up to 64GB	Default DDR4 8GB, up to 256GB	Default DDR4 8GB, up to 256GB
	Redundant Controllers	Default DDR3 16GB, up to 32GB	Default DDR4 16GB, up to 128GB	Default DDR4 16GB, up to 512GB	Default DDR4 16GB, up to 512GB
Supported Drives		<ul style="list-style-type: none"> <li>2.5" SAS SSD</li> <li>2.5" SAS HDD</li> <li>2.5" SATA SSD (for single-controller models only)</li> </ul> <b>Note:</b> For the latest compatibility details, refer to our official website for the latest Compatibility Guide.			
Max. Drive Number	Via Expansion Enclosures, 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 1GbE Ports (RJ45)		8	8	0	0
Onboard 10GbE Ports (SFP+)		0	0	8	8
Onboard SAS Expansion Ports		2	2	4	4
Max. Host Board Slots		2	4	4	4
Host Board Options		<ul style="list-style-type: none"> <li>16Gb/s FC x 4</li> <li>32Gb/s FC x 2</li> <li>1GbE (RJ45) x 4</li> <li>10GbE (SFP+) x 2</li> <li>25GbE (SFP28) x 2</li> <li>12Gb/s SAS x 2</li> </ul>	<ul style="list-style-type: none"> <li>16Gb/s FC x 4</li> <li>32Gb/s FC x 2</li> <li>32Gb/s FC x 4</li> <li>1GbE (RJ45) x 4</li> <li>10GbE (SFP+) x 2</li> <li>25GbE (SFP28) x 2</li> <li>12Gb/s SAS x 2</li> </ul>	<ul style="list-style-type: none"> <li>16Gb/s FC x 4</li> <li>32Gb/s FC x 2</li> <li>32Gb/s FC x 4</li> <li>10GbE (SFP+) x 2</li> <li>25GbE (SFP28) x 2</li> <li>12Gb/s SAS x 2</li> </ul>	
		<b>Note:</b> 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	16	16	16
Max. 32Gb/s FC Ports		4	16	16	16
Max. 1GbE Ports (RJ45)		8	16	0	0
Max. 10GbE Ports (SFP+)		4	8	8	8
Max. 25GbE Ports (SFP28)		4	8	8	8
Max. 12Gb/s SAS Ports		4	8	8	8
Expansion Enclosures (JBODs)		JB 3012A, JB 3016A, JB 3024BA, JB 3025BA, JB 3060L, JB 3090		JB 3012A, JB 3016A, JB 3025BA, JB 3060L, JB 3090	
Dimensions (Without Chassis Ears and Protrusions) (W x H x D)		449 x 88 x 500 mm			
Package Dimensions (W x H x D)		780 x 338 x 588 mm		780 x 340 x 588 mm	
Power Supply Unit	Power Supplies (Redundant and Hot-swappable)	Global	460W x 2 (80 PLUS Bronze)		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		<ul style="list-style-type: none"> <li>Electromagnetic compatibility: CE, BSMI, FCC</li> <li>Safety: UL, BSMI, CB</li> </ul>			

## SOFTWARE SPECIFICATIONS

Max. Logical Drive Number	30		
Max. Logical Drive Capacity	512TB		
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 (per controller)		
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 2.0/3.0), NFS (version 2/3/4), AFP (version 3.1.12), FTP/FXP (vsftpd 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 Folders	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	<ul style="list-style-type: none"> <li>• Web-based EonOne management software</li> <li>• User account management</li> <li>• Group management</li> <li>• Folder management - folder access control</li> <li>• Quota management</li> <li>• Folder encryption with AES</li> </ul>	<ul style="list-style-type: none"> <li>• Integration with Microsoft Active Directory (AD) and Linux LDAP</li> <li>• Storage Resource Management to analyze history of resource usage</li> <li>• Multi-factor authentication login mechanism</li> <li>• File-level QoS (network traffic control)</li> <li>• SMI-S standard interface for hypervisor management applications</li> </ul>	
Availability and Reliability	<ul style="list-style-type: none"> <li>• Immutable object storage</li> <li>• Hot-swappable hardware modules</li> <li>• Device mapper</li> <li>• Antivirus</li> <li>• Trunk group</li> </ul>	<ul style="list-style-type: none"> <li>• Cache safe technology</li> <li>• UPS</li> <li>• WORM (file level only)</li> <li>• SMB Multichannel</li> <li>• Backup Service</li> </ul>	
Efficiency	<ul style="list-style-type: none"> <li>• Inline compression</li> </ul>	<ul style="list-style-type: none"> <li>• Offline deduplication</li> </ul>	
Notification	<ul style="list-style-type: none"> <li>• Email</li> </ul>	<ul style="list-style-type: none"> <li>• SNMP traps</li> </ul>	
Applications	M&E	<ul style="list-style-type: none"> <li>• Project Server</li> </ul>	<ul style="list-style-type: none"> <li>• ResouceSpace</li> </ul>
	Data Backup	<ul style="list-style-type: none"> <li>• Object Storage</li> </ul>	
	File Sharing and Syncing	<ul style="list-style-type: none"> <li>• Nextcloud</li> </ul>	
	Productivity	<ul style="list-style-type: none"> <li>• Mail Server</li> </ul>	<ul style="list-style-type: none"> <li>• Web Server</li> <li>• ONLYOFFICE</li> </ul>
	Management	<ul style="list-style-type: none"> <li>• Proxy Server</li> </ul>	<ul style="list-style-type: none"> <li>• LDAP Server</li> <li>• Syslog Server</li> <li>• VPN Server</li> </ul>
	Security	<ul style="list-style-type: none"> <li>• Anti-virus</li> </ul>	
Supported Cloud Services	Utility	<ul style="list-style-type: none"> <li>• File Explorer</li> </ul>	<ul style="list-style-type: none"> <li>• Docker</li> </ul>
	<p>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.</p> <p><b>Note:</b> For complete information about supported cloud providers, please refer to EonCloud Gateway webpage <a href="https://www.infortrend.com/global/solutions/eoncloud">https://www.infortrend.com/global/solutions/eoncloud</a></p>		
Supported OS	<p>Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, MacOS X, VMware, Citrix XenServer, OpenStack Cinder</p>		
	<p><b>Note:</b> For supported OS versions, please refer to the Compatibility Guide.</p>		

## DATA SERVICES

Thin Provisioning	Block Level	Default	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space.	
Local Replication	File Level	Optional	Snapshot images per folder: 1024	
	Snapshot	Block Level	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	Block Level	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	<b>Note:</b> 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	
HA Service	Block Level	Default	Appliances per cluster: 4	
	File Level	Optional	Delivering continuous availability and eliminating downtime for mission-critical workloads that require non-stop operations	
SSD Cache	File Level	Optional	Accelerating file operations and data access performance for both read and write Max. SSD number: 8	
			Accelerating data access in random read-intensive environments (e.g. OLTP) Max. SSD number: 4	
	Block Level	Optional	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 and up	Max SSD cache pool size : 3.2TB
			Recommended DIMM capacity per controller 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 8 x 5 phone, web, and email support (batteries are covered under warranty for 2 years)
	Upgrade or Extension Options	<p>Warranty extension: Can extended standard service up to 5 years The following Service can be upgraded to 5 years</p> <ul style="list-style-type: none"> <li>• Upgrade: Replacement part dispatch on the next business day</li> <li>• Advanced service: phone, web, and email support + onsite diagnostics on the next business day</li> <li>• Premium service: phone, web, and email support + onsite diagnostics in 4 hours</li> </ul> <p><b>Note:</b> Options may vary by region. For more details, please contact our sales representatives.</p>
	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

Asia Pacific (Taipei, Taiwan)  
Infotrend Technology, Inc.  
Tel : +886-2-2226-0126  
E-mail : sales.ap@infotrend.com

China (Beijing, China)  
Infotrend Technology, Ltd.  
Tel : +86-10-6310-6168  
E-mail : sales.cn@infotrend.com

Japan (Tokyo, Japan)  
Infotrend Japan, Inc.  
Tel : +81-3-5730-6551  
E-mail : sales.jp@infotrend.com

Americas (Sunnyvale, CA, USA)  
Infotrend Corporation  
Tel : +1-408-988-5088  
E-mail : sales.us@infotrend.com

EMEA (Basingstoke, UK)  
Infotrend Europe Ltd.  
Tel : +44(0)-1256-305-220  
E-mail : sales.eu@infotrend.com



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