Infortrend®
EonStor GSc

EonStor GSc Family

Hybrid Cloud Storage Appliance Designed to Streamline Enterprise Cloud Deployment and Access

Product Highlights

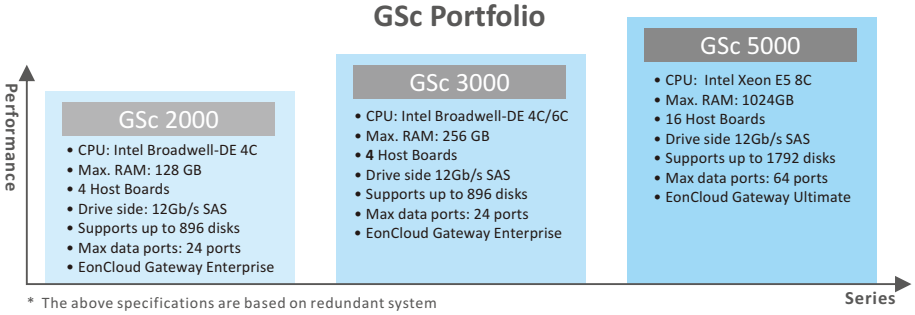
- **Easy cloud integration with the existing IT environment and applications** with general file or block-level as well as the local and cloud data through the common protocols. (e.g. NFS/CIFS/FTP/Rsync/iSCSI)
- **Enable faster cloud data access** by designate the local storage to act as cloud cache
- **Flexible cache policy** with more than 9 types of intelligent cache policies and extensive parameter settings
- **Cost-savings on cloud service and bandwidth** with built-in data compression and deduplication features
- **Scalable big data support** with up to 2PB of cloud storage space and hundreds million files in the cloud
- **Secure and protect enterprise data** with AES 256-bit data encryption and ensures no public cloud data can be decrypted by anyone else. All transmissions to and from the cloud are SSL/TLS encrypted
- **Simple-to-use** and web-based cloud management interface can be operated by any IT staff with a general browser, reducing the management complexity.
- **Powerful local storage** with excellent block /file level performance and can deliver up to 700K IOPS, 23,000MB/s block and 17,000 MB/s CIFS bandwidth

Introduction

Today companies across industries and verticals are getting on the cloud. Infortrend introduced all new EonStor GSc family of hybrid cloud storage appliance designed for businesses to streamline cloud deployment by moving and managing data between local and cloud in a transparent manner. GSc offers differentiated features in cloud cache, cloud backup, and cloud tiering.

GSc family inherited company's GS line of superior unified storage performance and available in 3 series. EonStor GSc 2000 / 3000 series are cost-effective solutions to meet the cloud storage needs from SMBs to large enterprises. EonStor GSc 5000 series is the high performance cloud storage system designed for modern data centers.

GSc Portfolio

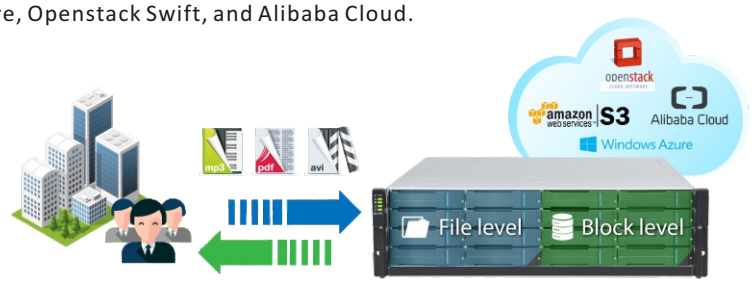


* The above specifications are based on redundant system

Integrated with cloud storage gateway functions, GSc simplifies cloud setup by maintaining compatibility with existing IT environment and offers cloud data access to both file and block-level using common protocols, thus greatly reduced the difficulty to reconfigure.

In addition, GSc allows enterprise with data already on the cloud to speed-up cloud access by designating the local storage as cache. With advanced cache feature, IT managers can further optimize cache performance with 9 types of intelligent cache policies with extensive parameter settings. Cloud backup feature also enables local data to take periodic snapshots to the cloud for remote backup. Cloud tiering feature places the frequently accessed hot data in the local while less-frequently accessed cold data to the cloud.

Data security has always been the top concern for enterprises to get on the cloud. GSc supports AES 256-bit data encryption and ensures no public cloud data can be decrypted by anyone else. Furthermore, all transmissions to and from the cloud are SSL encrypted to ensure additional data security. Built-in data compression and deduplication features can effectively reduce the amount of cloud data space used, resulting in cost-savings. Initially, GSc offers connectivity to Amazon S3, Microsoft Azure, Openstack Swift, and Alibaba Cloud.



NFS/CIFS/FTP/Rsync, iSCSI access

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PHYSICAL SPECIFICATIONS

EonStor GSc Family

Specifications (per system)		GSc 2000 GSc 2000T[*1]	GSc 3000 GSc 3000T[*1]	GSc 5100	GSc 5200
Form factor	2U 12-bay	v	v		
	2U 24-bay	v	v		
	2U 25-bay		v		
	3U 16-bay	v	v		
	4U 24-bay	v	v		
	4U 60-bay		v		
	4U (No internal bay. Expansion enclosure required.)			v	v
Controller		Dual-redundant/ Single upgradable to redundant			
Max drives		896 (with expansion board)	896 (with expansion board)	1792	1792
Max SSD cache pool		3.2TB	3.2TB	3.2TB	3.2TB
Cache backup techniques		Super capacitor + Flash module	Super capacitor + Flash module	BBU+Flash module	BBU+Flash module
Power supply unit	Power supplies (Redundant / hot-swappable)	460W x 2 (80 PLUS Bronze)	(GSc 3000) 530W x 2 (80 PLUS Bronze) (GSc 3060L) 1200W x 2 (80 PLUS Platinum)	1200W x 2 (80 PLUS Platinum)	
	AC voltage (with PFC (auto-switching))	100VAC @ 8A to 240VAC @ 4A	(GSc 3000) 100VAC @ 10A to 240VAC @ 5A (GSc 3060L) 100-127VAC @ 12.47A, 200-240VAC @ 7.08A	100-127VAC@12.47A, 200-240VAC@7.08A	
	Frequency	50-60 Hz	47-63 Hz	47-63 Hz	47-63 Hz
	Note: Power is also supplied in redundant mode, allowing full operation with half the resources.				
CPU		2 x Intel Broadwell-DE (Pentium) GSc 2000/2000T: 2-Core/4-Core	2 x Intel Broadwell-DE (Xeon) GSc 3000/3000T: 4-Core/6-Core	2 x Intel Xeon E5 8 core	4 x Intel Xeon E5 8 core
Cache memory		Default DDR4 16GB Up to 32GB, 64GB or 128GB	Default DDR4 32GB Up to 64GB, 128GB or 256GB	Default DDR4 128GB Up to 256GB or 512GB	Default DDR4 128GB Up to 256GB, 512GB or 1024GB
Max. number of host board		4	4	4	16
Onboard SAS expansion ports		2 x 12Gb/s SAS wide ports	4 x 12Gb/s SAS wide ports	0	0
Expansion board		2	2	4 (Default included)	4 (Default included)
	Note: 1. The expansion board has 2 x 12Gb/s SAS ports only connectable with expansion enclosures. 2. **For GSc 2000/3000**, the expansion board can only be installed in the HB2 slot. **For GSc 5000**, the expansion board can only be installed in slot HB9 and HB10.				
Onboard iSCSI ports (10Gb RJ-45)		0	4	0	0
Onboard iSCSI ports (1Gb RJ-45)		8	4	0	0
Host board ports		4 x 16Gb/s FC ports (No Remote Replication support) 4 x 1Gb/s iSCSI ports 2 x 10Gb/s iSCSI ports (SFP+) 2 x 10Gb/s iSCSI ports (RJ-45) 2 x 25Gb/s iSCSI ports (SFP28) 2 x 40Gb/s iSCSI ports (QSFP) 2 x 56Gb/s InfiniBand ports (for Linux only, block level only) 2 x 12Gb/s SAS ports Converged host board: - 4 x 8Gb/s FC ports - 2 x 16Gb/s FC ports - 4 x 10Gb/s FCoE ports - 4 x 10Gb/s iSCSI ports (SFP+)	4 x 16Gb/s FC ports (No Remote Replication support) 4 x 1Gb/s iSCSI ports 2 x 10Gb/s iSCSI ports (SFP+) 2 x 10Gb/s iSCSI ports (RJ-45) 2 x 25Gb/s iSCSI ports (SFP28) 2 x 40Gb/s iSCSI ports (QSFP) 2 x 56Gb/s InfiniBand ports (for Linux only, block level only) 2 x 12Gb/s SAS ports Converged host board: - 4 x 8Gb/s FC ports - 2 x 16Gb/s FC ports - 4 x 10Gb/s FCoE ports - 4 x 10Gb/s iSCSI ports (SFP+)	4 x 16Gb/s FC ports (No Remote Replication support) 4 x 1Gb/s iSCSI ports 2 x 10Gb/s iSCSI ports (RJ-45) 2 x 40Gb/s iSCSI ports (QSFP) 2 x 56Gb/s InfiniBand ports (for Linux only, block level only) 2 x 12Gb/s SAS ports Converged host board: - 4 x 8Gb/s FC ports - 2 x 16Gb/s FC ports - 4 x 10Gb/s FCoE ports - 4 x 10Gb/s iSCSI ports (SFP+)	4 x 16Gb/s FC ports (No Remote Replication support) 4 x 1Gb/s iSCSI ports 2 x 10Gb/s iSCSI ports (RJ-45) 2 x 40Gb/s iSCSI ports (QSFP) 2 x 56Gb/s InfiniBand ports (for Linux only, block level only) 2 x 12Gb/s SAS ports Converged host board: - 4 x 8Gb/s FC ports - 2 x 16Gb/s FC ports - 4 x 10Gb/s FCoE ports - 4 x 10Gb/s iSCSI ports (SFP+)
	Note: 1. The two controllers must have identical slot settings. 2. Fibre channel supports point-to-point and switch mode. 3. **For GSc 5100**, the host boards should be installed in HB7~8. **For GSc 5200**, the host boards should be installed in HB1~8.				
Host board + onboard ports (max.)		24	24	16	64
Max. 8Gb/s FC ports		16	16	16	64
Max. 16Gb/s FC ports		16	16	16	64
Max. 10 GbE FCoE ports		16	16	16	64
Max. 1 GbE/iSCSI ports		24	20	16	64
Max. 10 GbE/iSCSI (SFP+) ports		16	16	16	64
Max. 10 GbE/iSCSI (RJ-45) ports		8	12	8	32
Max. 25 GbE/iSCSI (SFP28) ports		8	8	0	0
Max. 40GbE/iSCSI (QSFP) ports		8	8	8	32
Max. 56Gb/s InfiniBand ports		8	8	8	32
Max. 12Gb/s SAS ports		8	8	8	32
Max. number of logical drives		32			
Max. logical drive capacity		512TB			
Configurable stripe size		16KB, 32KB, 64KB, 128KB, 256KB, 512KB, or 1024KB per logical drive			
Configurable write policy		Write-Back or Write-Through per logical drive. This policy can be modified.			
Max. size of pool		2PB			
Max. number of pools		32			
Max. number of volumes (per pool/ per system)		1024			
Max. number of LUNs mappable		4000			
Max. volume size		2PB			
Number of tags reserved for each Host-LUN connection		Up to 256			
Max iSCSI Initiators (per controller)		832			
Maximum host connection (per FC)		128			
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/FTP)	• 16 GB memory: 200 • 32 GB memory: 512		• 64 GB memory: 1024 • 128 GB memory: 2048	
RAID options		RAID 0, 1, (1+0), 3, 5, 6, 10, 30, 50, 60			
Protocol support		File Level Protocol: CIFS/ SMB: Version 2.0/3.0, NFS: Version 2/3/4, AFP, FTP, FXP, WebDAV Block Level Protocol: FC, FCoE, iSCSI, SAS, InfiniBand Object Level Protocol: RESTful API			
EonCloud Gateway		Support the integration with following cloud providers: Amazon S3, Microsoft Azure, Alibaba Cloud, OpenStack			
Green design		• 80 PLUS power supplies delivering more than 80% energy efficiency			
Regulatory		• Electromagnetic Compatibility : CE, BSMI, FCC • Safety : UL, BSMI, CB			

1. Model name "T" means high performance

EonStor GSc Family

GSc 2000(T)/3000(T) Series

Form Factor	2U 12-bay	3U 16-bay	4U 24-bay
Available Models	GSc 3012RC/SC GSc 3012RTC/STC GSc 2012RC/SC GSc 2012RTC/STC	GSc 3016RC/SC GSc 3016RTC/STC GSc 2016RC/SC GSc 2016RTC/STC	GSc 3024RC/SC GSc 3024RTC/STC GSc 2024RC/SC GSc 2024RTC/STC
	Note: **G**: Single controller **S**: Single controller(upgradable to dual controller) **R**: Redundant controller **T**: High Performance **C**: Super capacitor		
Supported drives	• 2.5" SAS SSDs • 2.5" SATA SSDs • 2.5" 10,000 RPM SAS HDD • 2.5" 15,000 RPM SAS HDD • 3.5" 7,200 RPM Nearline SAS HDD • 3.5" 7,200 RPM SATA HDD	• 2.5" SAS SSDs • 2.5" SATA SSDs • 2.5" 10,000 RPM SAS HDD • 2.5" 15,000 RPM SAS HDD • 3.5" 7,200 RPM Nearline SAS HDD • 3.5" 7,200 RPM SATA HDD	• 2.5" SAS SSDs • 2.5" SATA SSDs • 2.5" 10,000 RPM SAS HDD • 2.5" 15,000 RPM SAS HDD • 3.5" 7,200 RPM Nearline SAS HDD • 3.5" 7,200 RPM SATA HDD
	Note: For the latest compatibility details, refer to our official website for the latest EonStor GS Compatibility Matrix.		
Max. drives number	896	896	896
Rack Support	2U, 19-inch rackmount	3U, 19-inch rackmount	4U, 19-inch rackmount
Dimensions (Without chassis ears/ protrusions)	447(W)x88(H)x500(D)mm	447(W)x130(H)x500(D)mm	447(W)x175(H)x500(D)mm
Package Dimensions	780(W)x379(H)x588(D)mm	780(W)x423(H)x588(D)mm	780(W)x465(H)x588(D)mm
Expansion enclosure(JBOD)	JB 3012A, JB 3016A, JB 3024BA, JB 3025BA, JB 3060, JB 3060L		

Form Factor	4U 60-bay	2U 24-bay	2U 25-bay
Available Models	GSc 3060RCL GSc 3060GL GSc 3060RTCL GSc 3060GTL	GSc 2024RCB/SCB GSc 2024RTCB/STCB GSc 3024RCB/SCB	GSc 3025RCB/SCB GSc 3025RTCB/STCB
	Note: **G**: Single controller **S**: Single controller(upgradable to dual controller) **R**: Redundant controller **T**: High Performance **C**: Super capacitor **L**: One Drawer (for GSc 3060)		
Supported drives	• 2.5" SAS SSDs • 2.5" SATA SSDs • 2.5" 10,000 RPM SAS HDD • 2.5" 15,000 RPM SAS HDD • 3.5" 7,200 RPM Nearline SAS HDD • 3.5" 7,200 RPM SATA HDD	• 2.5" SAS SSDs • 2.5" SATA SSDs • 2.5" 10,000 RPM SAS HDD • 2.5" 15,000 RPM SAS HDD • 3.5" 7,200 RPM Nearline SAS HDD • 3.5" 7,200 RPM SATA HDD	• 2.5" SAS SSDs • 2.5" SATA SSDs • 2.5" 10,000 RPM SAS HDD • 2.5" 15,000 RPM SAS HDD • 3.5" 7,200 RPM Nearline SAS HDD • 3.5" 7,200 RPM SATA HDD
	Note: 1. **2U 24-bay** and **2U 25-bay** support 3.5" drives in 3.5" JBOD 2. For the latest compatibility details, refer to our official website for the latest EonStor GS Compatibility Matrix.		
Max. drives number	896	896	896
Rack Support	4U, 19-inch rackmount	2U, 19-inch rackmount	2U, 19-inch rackmount
Dimensions (Without chassis ears/ protrusions)	448(W)x176(H)x840(D)mm	447(W)x88(H)x500(D)mm	447(W)x88(H)x500(D)mm
Package Dimensions	620(W)x460(H)x1140(D)mm	780(W)x338(H)x588(D)mm	780(W)x340(H)x588(D)mm
Expansion enclosure(JBOD)	JB 3012A, JB 3016A, JB 3024BA, JB 3025BA, JB 3060, JB 3060L		

GSc 5000 Series

Form Factor	**4U** (No internal bay. Expansion enclosure required.)	
Available Models	GSc 5100RL	GSc 5200RL
	Note: **R**: Redundant controller **L**: BBU (for GSc 5000)	
Supported drives	• 2.5" SAS SSDs • 2.5" SATA SSDs • 2.5" 10,000 RPM SAS HDD • 2.5" 15,000 RPM SAS HDD • 3.5" 7,200 RPM Nearline SAS HDD	
	Note: For the latest compatibility details, refer to our official website for the latest EonStor GS Compatibility Matrix.	
Max. drives number	1792	
Rack Support	4U, 19-inch rackmount	
Dimensions (Without chassis ears/ protrusions)	447(W)x175(H)x577mm (D)	
Package Dimensions	591(W)x295(H)x800mm (D)	
Expansion enclosure(JBOD)	JB 3012A, JB 3016A, JB 3024BA, JB 3025BA, JB 3060, JB 3060L	

Data Service

Self-encrypting drives	Unique factory encryption secures data plus makes deletion simple and complete		
Thin Provisioning (default included)	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space		
Local Replication	Snapshot	Snapshot images per source volume Snapshot images per system	Standard License: 64 / Advanced License: 256 Standard License: 128 / Advanced License: 4096
	Volume Copy/Mirror	Replication pairs per source volume Replication pairs per system	Standard License: 4 / Advanced License: 8 Standard License: 16 / Advanced License: 256
	Note: Standard license is included by default and advanced is an optional license		
Remote Replication(Block level) (optional)	Replication pairs per source volume: 8 Replication pairs per system: 64		
	Note: The maximum number of replication pair per source volume is up to 8, regardless of remote asynchronous/remote synchronous/local volume pairs		
Remote Replication(File Level)	Support Rsync with 128-bit SSH encryption		
Automated Storage Tiering (optional)	Two(2) or four(4)storage tiers based on drive types SSD supports		
SSD Cache (optional)	• Accelerating data access for random read-intensive environments, such as OLTP • Supports up to four SSDs per controller • Recommended DIMM capacity for SSD Cache pool: DRAM:8GB Max SSD Cache Pool Size: 300GB DRAM:16GB Max SSD Cache Pool Size: 400GB DRAM:32GB Max SSD Cache Pool Size: 800GB DRAM:64GB Max SSD Cache Pool Size: 1,600GB DRAM:128GB Max SSD Cache Pool Size: 3,200GB DRAM:256GB Max SSD Cache Pool Size: 3,200GB DRAM:512GB Max SSD Cache Pool Size: 3,200GB DRAM:1024GB Max SSD Cache Pool Size: 3,200GB		
EonCloud Gateway	**File-level** Cache Mode: A copy of frequently accessed file is kept on a local storage and all files are also uploaded to cloud Sync Mode: Synchronizing files between local storage and clouod. **Block-level** Cache Mode: A copy of frequently accessed data is kept on a local storage and all data are also flushed to cloud. Backup Mode: All data are kept on local storage and all data are also flushed to cloud. Tiering Mode: Frequently accessed data is kept on local storage and infrequently accessed data is migrated to cloud		

EonCloud Gateway Version

Feature	EonCloud Gateway Enterprise	EonCloud Gateway Ultimate
Models applied	For **GSc 2000/3000**: Enterprise license is included by default. Can be upgraded to EonCloud Ultimate version For **GSc 5000**: Ultimate license is included by default	
Cloud folder sync/cache	v	v
Max. cache settings	5	10
Cache policy and function parameters	Default(LRU) Low priority High priority 90 days trial for others	Default(LRU) Low priority High priority Uncacheable for read Uncacheable for write No applicable Local only Prepopulated Sequentially-preallocate
Cloud volume cache	v	v
Cloud volume backup	v	v
Cloud volume tier	v	v
Max. connected folder	5	32
Max. connected volume	5	32
Cloud folder cache size	≦ 2PB	≦ 2PB
Cloud volume capacity	≦ 2PB	≦ 2PB

Service & Support

Access right management	• User account management • Quota management	• Group management • Integration with Window® AD and LDAP	• Folder management - folder access control • Folder encryption with AES
Availability and reliability	• Redundant, hot-swappable hardware modules • Trunk group support	• Device mapper support • CacheSafe technology	• Multi-pathing support • UPS • Antivirus • WORM(For file level only)
Management	• Web-based EonOne management software • Automated cache flush and caching mode operation per enclosure status • Module status LED indicators: component presence detection & thermal sensors via I2C bus • Storage Resource Management to analyze history records of resource usage • Automate repeatable management tasks by flexible workflow		
Notification	Email, SNMP traps		
Applications	• File explorer • Proxy server • Syslog server • VPN server • SyncCloud • LDAP server		
OS support	Microsoft Windows Server 2008 / 2008 R2 / 2012 / 2012 R2 / 2016 , Windows 7 SP1 / Windows 8.1, Microsoft Windows Hyper-V, Red Hat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, Mac OS X, VMware, Citrix XenServer, OpenStack Cinder		
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/extension options	Replacement part dispatch on the next business day (up to 5 years) Advanced service: 24x7 phone, web, and email support + onsite diagnostics on the next business day (up to 5 years) Premium service: 24x7 phone, web, and email support + onsite diagnostics in 4 hours (up to 5 years) Extended standard service up to 5 years	
	Infortrend Service Center	Request Support, Knowledge Base, Download Center, Licensing Service, and News	

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