EonStor DS 1000 Gen2 series

Affordable storage with onboard iSCSI and FC/SAS enhances performance and scalability

Available models

EonStor DS 1024B Gen2

- *Small form factor: space-saving design and high density capacity*
- *Ideal for making the most of SSD performance*
- *For 2.5" drives*

EonStor DS 1012/1016/1024 Gen2

- *Large form factor for budget-savvy SMB deployment*
- *Best cost to performance value*

Powerful performance made affordable

- Up to 250K IOPS (all cache) and 125K IOPS (End to end) to accelerate all storage related operations
- Throughput reaches 6,000MB/s read and 2,000MB/s write -accelerating major storage jobs and easily handling even intense workloads to enhance efficiency

SSD Cache

- Accelerated read performance for hot data
- Up to four SSDs per controller
- Large SSD cache pool capacity: up to 3.2TB

Hybrid host interconnect by default

- All systems feature four 1Gb/s iSCSI ports to ensure more than sufficient connectivity to clients, servers, and other storage arrays
- Choose module host interface from 8Gb/s or 16Gb/s Fibre Channel, 10Gb/s iSCSI or 40Gb/s iSCSI or 25Gb iSCSI, 12Gb/s SAS to go alongside the default 1Gb/s iSCSI ports
- Converged host board with 3 connectivity options to choose from (16Gb/s FC, 8Gb/s FC, and 10Gb/s iSCSI SFP+)

EonStor DS 1000 Gen2 series storage systems deliver among the best cost to performance ratios for SMB users of all entry-level RAID solutions. Models available in diverse form factors: **12-bay**, **16-bay**, and compact **24-bay**. All include 1Gb/s iSCSI ports per controller to expand networking and connectivity – an architecture created with surveillance applications in mind, which need fast interconnect to multiple clients. Up to 448 drives can be attached via expansion enclosures. With 12TB drive support, that means up to 5PB in capacity made available.

Performance design for your suitable budget for SMB

EonStor DS 1000 Gen2 system, entry-level enterprise-class storage system designed with unprecedented in-segment performance. Available for single, dual controller and Turbo performance models to meet different budget for SMB.

Performance	DS 1000R/RB Gen2
IOPS	250K
Read (MB/s)	6,000
Write (MB/s)	2,000

* The performance applies to different form factors.

High scalability

EonStor DS 1000 Gen2 systems support as many as 448 drives through compatible expansion enclosures. Scalability is a much more cost-effective solution than buying additional storage systems, resulting in additional savings.

Hybrid host interface with onboard iSCSI

EonStor DS 1000 Gen2 models incorporate four 1Gb/s iSCSI ports on each controller by default, which can be added to by choosing 8Gb/s or 16Gb/s Fibre Channel, 12Gb/s SAS, 10Gb/s iSCSI to go alongside them. As deployments strive for maximum efficiency and resource consolidation, a hybrid host interface design is of great value, as it supports better performance as well as wider connectivity.

Multiple cache protection solutions

- Maintenance free super capacitors and a flash module provide a safe and reliable power source for cached memory if main power supply is disrupted
- Hot-swappable BBU (backup battery unit) with flash module stores data should the system suddenly shutdown or experience a power outage
- Choose BBU or super capacitors based on your needs and budget

Affordable from the start and growing with you

- Compatible with a wide range of Infortrend JBOD expansion enclosures, including high density 4U 60-bay units
- Up to 448 drives per system with support for 12TB drives – a total of up to 5PB in capacity brings you lots of space for future storage growth

Enterprise-class data services

- Includes licenses for snapshot, volume copy/mirror, and thin provisioning
- Supports features such as automated storage tiering to leverage SSD speed and enhanced remote replication disaster recovery (with optional licenses)
- Self-encrypting drives (SEDs) provide cost-effective protection for archived data alongside secure and simple media deletion

Easy to use by everyone in your team

- Exclusive SANWatch 3.0 browser-based GUI features an intuitive and simple design that team members can quickly pick up and make the most of without extensive training
- User interface integrates all system functions to promote full utilization

Environmentally-minded green design

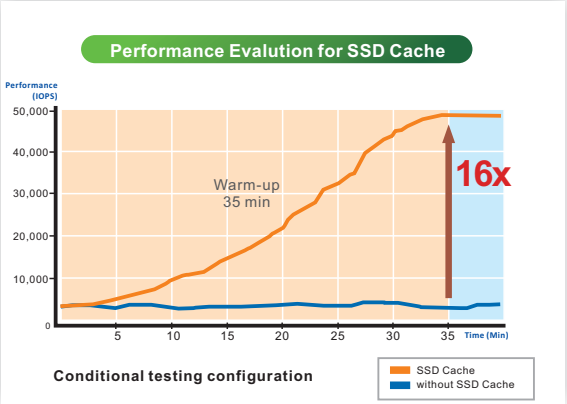
- Energy efficient components include SoC processor and 80 PLUS power supplies
- Intelligent drive and fan spin down minimize redundant energy consumption

Symmetric active-active controllers

- Symmetric active-active controllers
- Automatically reconnected I/O during path failure

Storage acceleration with SSD Cache

EonStor DS 1000 Gen2 systems support large high speed SSD cache pools. SSD Cache speeds up read performance for priority data, and boosts cache pool capacities up to 3.2TB. As many as four SSDs per controller can be used, including SATA SSD. In addition to faster read speeds, SSD Cache reduces performance impact compared to spin-drive caches with rapid warm up and less drive wear. Configuring and managing SSD Cache pooling is easy via the intuitive SANWatch UI.



* SSD Cache speeds up read performance by up to 16 times for frequently-accessed data stored in the cache pool.
* Actual performance gains can vary depending on customer applications.

Super capacitor or BBU with flash for data protection

Super capacitors do not require replacement and cover the life of the system, ensuring emergency cache power to prevent mission-critical data loss. Alternatively, customers can choose the flexibility of a hot-swappable backup battery unit (BBU) with flash, which also safeguards against downtime due to power outages.

Comprehensive data services

Affordable for smaller businesses, the EonStor DS 1000 Gen2 series offers enterprise-grade data services such as snapshot and volume copy/mirror to make multiple backups simple and quick. Thin provisioning helps with intelligent storage utilization, while optional 4-level automated storage tiering is the solution you need to leverage high speed drives for frequently-used data. For security and backup, remote replication offers dependable disaster recovery by creating offsite datasets that stay operational even if your main location goes offline. Compatibility with SED (self-encrypting drives) delivers unbreakable defense against disk theft or misplacement and also expedites data deletion.

Symmetric active-active controllers

EonStor DS supports symmetric active-active controller configuration to minimize administrative effort and boost operation efficiency. Hosts can access the same LUNs simultaneously via both controllers. I/O are more equally distributed across both controllers and all paths, effectively minimizing costly path management time. In the event of a path failure, I/O can automatically continue through the remaining paths with little or no failover.

Technical Specifications




Model name	DS 1012R Gen2 DS 1012G Gen2	DS 1016R Gen2 DS 1016G Gen2	DS 1024R Gen2 DS 1024G Gen2	DS 1024RB Gen2 DS 1024GB Gen2
Form factor	2U 12-bay LFF	3U 16-bay LFF	4U 24-bay LFF	2U 24-bay SFF
Storage controller	Single or Dual-redundant			
Host connectivity[4] (per controller)	4 x 8Gb/s FC ports 4 x 16Gb/s FC ports 4 x 1Gb/s iSCSI ports 2 x 10Gb/s iSCSI ports (RJ-45) 2 x 10Gb/s iSCSI ports (SFP+) 2 x 40Gb/s iSCSI ports (QSFP+) 2 x 25Gb/s iSCSI ports (SFP28) 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 iSCSI ports (SFP+)			
Onboard iSCSI ports (per controller)	4			
Cache memory (per controller)	2GB, 4GB, 8GB, 16GB			
Max. drives (per system)	12	16	24	24
Max. drives (via expansion enclosures)	448	448	448	448
Expansion enclosure	JB 3012 JB 3016 JB 3024B		JB 3025B JB 3060 JB 3060L	
SAS expansion ports (per controller)	1 x 12Gb/ SAS port			
Cache backup techniques [1]	• Super capacitor + Flash module or BBU (hot-swappable) + Flash module			
Supported drives [2]	• 2.5" SATA/SAS SSD • 2.5" 10K/15K RPM SAS HDD • 3.5" 7200 RPM NL SAS HDD (DS1012/1016/1024 only) • 3.5" 7200 RPM SATA HDD (DS1012/1016/1024 only)			
Power Supplied Unit	Power supply (Redundant/hot-swappable): 460W x 2 (80 PLUS Bronze) Voltage (with PFC(auto-switching): 100Vac@8A to 240Vac@4A Frequency: 50-60Hz Note: Power is also supplied in redundant mode, allowing full operation with half the resources)			
Green design	• 80 PLUS power supplies delivering more than 80% energy efficiency • Intelligent multi-level drive spin-down			
RAID configurations	• RAID level 0, 1,(1+0), 3, 5, 6, 10, 30, 50, 60			
Max.number of partitions supported	Up to 2048(LUNs)			
Max.mappable LUNs per system	4000			
Regulatory [3]	• Safety : UL, BSMI, CB, EAC • Electromagnetic Compatibility : CE, BSMI, FCC, KC			

Available models[4]

ESDS 1012G2 ESDS 1012R2L ESDS 1012R2C	ESDS 1016G2 ESDS 1016R2L ESDS 1016R2C ESDS 1016G2NH ESDS 1016R2LNH	ESDS 1024G2 ESDS 1024R2L ESDS 1024R2C	ESDS 1024G2B ESDS 1024R2LB ESDS 1024R2CB

1. EonStor DS 1000G models: super capacitor and flash module or BBU + flash module optional and not included by default.
2. For the latest compatibility details, refer to our official website for the latest EonStor DS Compatibility Matrix.
3. Check with your local sales representative for complete details.
4. R: Redundant controller G: Single controller 2:Gen2 L: BBU C: Super capacitor NH: No host board

Service and support

Data Service

Local Replication [2] (Standard license is included by default and advanced is an optional license)	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
Thin Provisioning (default included)	" Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space		
Self-encrypting drives	Unique factory encryption secures data plus makes deletion simple and complete		
Remote Replication (optional license) [2]	Replication pairs per source volume: 8 Replication pairs per system: 64		
Automated Storage Tiering (optional license)	Two(2) or four(4)storage tiers based on drive types SSD supports Automated data migration with scheduling options		
SSD Cache (optional license)	• 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: DRAM:2GB Max. SSD Cache Pool Size: 150GB DRAM: 4GB Max. SSD Cache Pool Size: 400GB DRAM:8GB Max. SSD Cache Pool Size: 800GB DRAM:16GB Max. SSD Cache Pool Size: 1600GB		

Availability and Reliability

Redundant, hot-swappable hardware modules, Device mapper support
Cache backup technology: protects cached data during power outage by flushing data into flash memory
Port trunking / link aggregation (IEEE 802.3ad), fail-over, jumbo frame

Management

SANWatch management suite; Embedded RAIDWatch; Terminal via RS-232C; Telnet/SSH

Notification

Email, SNMP traps

OS support

Microsoft Windows Server 2008 / 2008 R2 / 2012 / 2012 R2/2016 (including Hyper-V), Window 7 SPI/Windows 8.1/ Windows 10, Red Hat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, Mac OS X, HP-UX, IBM AIX, VMware, Citrix XenServer, Openstack Cinder, CentOS

Service and support [1]

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: 9x5 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

1. All EonStor DS systems ship with standard service. Extended service terms may vary by region.
2. The maximum number of replication pair per source volume is up to 8, regardless of remote asynchronous/remote synchronous/local volume pairs.

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