EonStor DS 1000 series

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

Available models

EonStor DS 1036RTB
EonStor DS 1024RB/RTB

▪ *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

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

Powerful performance made affordable

• Up to 550K IOPS ensures ample compute bandwidth for diverse applications and tasks, as well as large networks/user groups
• Throughput reaches 5,500MB/s read and 1,900MB/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 6Gb/s or 12Gb/s

EonStor DS 1000 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 and 36 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 316 drives in LFF and 360 in SFF may be attached via JBOD enclosures to each system. With 6TB drive support, that means up to 1.9PB in capacity made available.

Performance design for your suitable budget for SMB

EonStor DS 1000 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	EonStor DS 1000R/RB	EonStor DS 1000RT/RTB
IOPS	380K	550K
Read (MB/s)	5,500	
Write (MB/s)	1,900	

* The performance applies to different form factors.

High scalability

EonStor DS 1000 systems support as many as 360 drives through compatible expansion enclosures. Scalability is a much more cost-effective solution than buying additional storage systems, resulting in additional savings.

CITRIX ready™   vmware READY   CERTIFIED FOR Windows Server®2008 R2   Windows Server 2012 Certified   80 PLUS™

SAS to go alongside the default 1 Gb/s iSCSI ports
- Converged host board with 3 connectivity options to choose from (16Gb/s FC, 8Gb/s FC, and 10Gb/s iSCSI SFP+)

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 316 drives in LFF and 360 in SFF per system, with support for 6TB drives – a total of up to 1.9PB 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

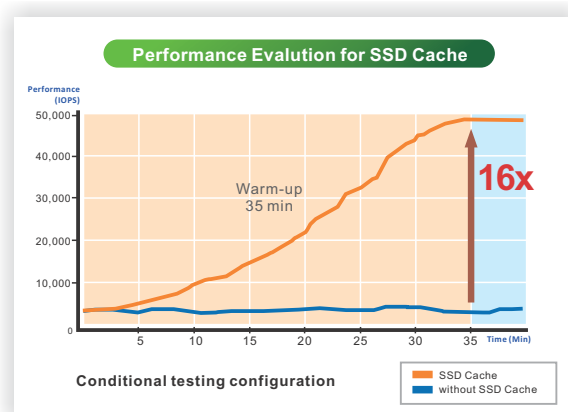## Easy to use by everyone in your team
- Exclusive SANWatch 3.0 browser-based GUI features an intuitive and simple design that team members can quickly pick up and make the most of without extensive training
- User interface integrates all system functions to promote full utilization

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

Storage acceleration with SSD Cache

EonStor DS 1000 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.

Hybrid host interface with onboard iSCSI

EonStor DS 1000 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, 6Gb/s or 12Gb/s SAS, or 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.

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 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.

Technical Specifications

Model name	DS 1012R DS 1012G	DS 1016R DS 1016G	DS 1024R DS 1024G	DS 1024RB DS 1024GB
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)	2 x 16Gb FC ports 4 x 8Gb FC ports 4 x 10Gb FCoE ports 2 x 10Gb iSCSI ports (RJ-45) 2/4 x 10Gb iSCSI ports (SFP+) 4 x 1Gb iSCSI ports 2 x 6Gb SAS ports 2 x 12Gb SAS ports			
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)	312	316	324	360
Expansion enclosure (JBOD)	JB 2012-1 JB 2048 JB 2060	JB 2016-1 JB 2048 JB 2060	JB 2016-1 JB 2048 JB 2060	JB 2048 JB 2060 JB 2024B JB 2012-1 JB 2016-1
SAS expansion ports (per controller)	1 x 6Gb/ 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 & Cooling	Power supply: Two redundant 460W; Voltage and Frequency: 100-240 Vac, 50-60Hz Power consumption - DS 1012R: 225.6W - DS 1012G: 158.4W Heat dissipation: 584BTU/hour	Power consumption - DS 1016R: 224.4W - DS 1016G: 187.2W Heat dissipation: 632BTU/hour	Power consumption - DS 1024R: 376.8W - DS 1024G: 328.8W Heat dissipation: 1082BTU/hour	Power consumption - DS 1012RB: 283.2W - DS 1012GB: 228W Heat dissipation: 971BTU/hour
Green design	• 80 PLUS power supplies delivering more than 80% energy efficiency • Intelligent multi-level drive spin-down			
RAID configurations	• RAID level 0, 1(0+1), 3, 5, 6, 10, 30, 50, 60 • Up to 32 logical drives and 64 partitions per logical volume • Up to 4096 LUNs			
Regulatory [3]	• Safety : UL, BSMI, CB, EAC • Electromagnetic Compatibility : CE, BSMI, FCC, KC			

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. Converged host board supports 4-port 10Gb iSCSI, 4-Port 8 Gb FC, 2-port 16Gb FC and 4-por t 10Gb FCoE, 4 port FCoE will be released in Q3, 2016.

Model name	DS 1012RT DS 1012GT	DS 1016RT DS 1016GT	DS 1024RT DS 1024GT
Form factor	2U 12-bay LFF	3U 16-bay LFF	4U 24-bay LFF
Storage controller		Single or Dual-redundant	
Host connectivity[4] (per controller)		2 x 16Gb FC ports 4 x 8Gb FC ports 4 x 10Gb FCoE ports 2 x 10Gb iSCSI ports (RJ-45) 2/4 x 10Gb iSCSI ports (SFP+) 4 x 1Gb iSCSI ports 2 x 6Gb SAS ports 2 x 12Gb SAS ports	
Onboard iSCSI ports (per controller)		4	
Cache memory (per controller)	2GB, 4GB, 8GB, 16GB	2GB, 4GB, 8GB, 16GB	2GB, 4GB, 8GB, 16GB
Max. drives (per system)	12	16	
Max. drives (via expansion enclosures)	312	316	324
Expansion enclosure (JBOD)	JB 2012-1 JB 2048 JB 2060	JB 2016-1 JB 2048 JB 2060	JB 2016-1 JB 2048 JB 2060
SAS expansion ports (per controller)		1 x 6Gb/ 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 • 3.5" 7200 RPM SATA HDD	
Power & Cooling	Power supply: Two redundant 460W; Voltage and Frequency: 100-240 Vac, 50-60Hz Power consumption - DS 1012RT: 225.6W - DS 1012GT: 158.4W Heat dissipation:584BTU/hour	Power consumption - DS 1016RT: 224.4W - DS 1016GT: 187.2W Heat dissipation: 632BTU/hour	Power consumption - DS 1024RT: 376.8W - DS 1024GT: 328.8W Heat dissipation:1082BTU/hour
Green design		• 80 PLUS power supplies delivering more than 80% energy efficiency • Intelligent multi-level drive spin-down	
RAID configurations		• RAID level 0, 1(0+1), 3, 5, 6, 10, 30, 50, 60 • Up to 32 logical drives and 64 partitions per logical volume • Up to 4096 LUNs	
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4. Converged host board supports 4-port 10Gb iSCSI, 4-Port 8 Gb FC, 2-port 16Gb FC and 4-por t 10Gb FCoE, 4 port FCoE will be released in Q3, 2016.

Model name	DS 1024RTB DS 1024GTB	DS 1036RTB DS 1036GTB
Form factor	2U 24-bay SFF	3U 36-bay SFF
Storage controller		
Host connectivity[4](per controller)	2 x 16Gb FC ports 4 x 8Gb FC ports 4 x 10Gb FCoE ports 2 x 10Gb iSCSI ports (RJ-45) 2/4 x 10Gb iSCSI ports (SFP+) 4 x 1Gb iSCSI ports 2 x 6Gb SAS ports 2 x 12Gb SAS ports	
Onboard iSCSI ports (per controller)	4	
Cache memory (per controller)	2GB, 4GB, 8GB, 16GB	2GB, 4GB, 8GB, 16GB
Max. drives (per system)	24	36
Max. drives (via expansion enclosures)	360	360
Expansion enclosure (JBOD)	JB 2048 JB 2060 JB 2024B JB 2012-1 JB 2016-1	JB 2060 JB 2036B
SAS expansion ports (per controller)	1 x 6Gb/ 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	
Power & Cooling	Power supply: Two redundant 460W; Voltage and Frequency: 100-240 Vac, 50-60Hz	Power supply: Two redundant 530W; Voltage and Frequency: 100-240 Vac, 50-60Hz
	Power consumption - DS 1024RTB: 283.2W - DS 1024GTB: 228W Heat dissipation: 971BTU/hour	Power consumption - DS 1024RTB: 427.9W - DS 1024GTB: 367.9W Heat dissipation: 1580BTU/hour
Green design	• 80 PLUS power supplies delivering more than 80% energy efficiency • Intelligent multi-level drive spin-down	
RAID configurations	• RAID level 0, 1(0+1), 3, 5, 6, 10, 30, 50, 60 • Up to 32 logical drives and 64 partitions per logical volume • Up to 4096 LUNs	
Regulatory [3]	• Safety : UL, BSMI, CB, EAC • Electromagnetic Compatibility : CE, BSMI, FCC, KC	

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Service and support

Data Service

Local Replication (Standard license is included by default and advanced is an optional license)	Snapshot	Snapshot images per source volume	Standard License: 64 / Advanced License: 256
		Snapshot images per system	Standard License: 128 / Advanced License: 4096
	Volume Copy/Mirror	Source volumes per system	Standard License: 16 / Advanced License: 32
		Replication pairs per source volume	Standard License: 4 / Advanced License: 8
		Replication pairs per system	Standard License: 64 / 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 licesne)	Replication per source volume: 16 Replication pairs per source volume: 4 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: 1,600GB		

Availability and Reliability

Redundant, hot-swappable hardware modules
Multi-pathing support (EonPath); 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, Fax, LAN broadcast, SNMP traps, SMS, Skype

OS support

Microsoft Windows Server 2008 / 2008 R2 / 2012 / 2012 R2 , Microsoft Windows Hyper-V, Red Hat Enterprise, Linux, SUSE Linux
Enterprise, Sun Solaris, Mac OS X, HP-UX, IBM AIX, VMware, Citrix XenServer, Openstack Cinder

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: 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

1. All EonStor DS systems ship with standard service. Extended service terms may vary by region.