



iSCSI to SAS

Highlights

Reliability and Availability

- Local and remote replication functionality enables quick data recovery after logical errors and physical errors
- Redundant and hot-swappable hardware components eliminate single point of failure
- Multiple hardware RAID levels protect data against drive failure
- CacheSafe technology protects cached data during a power outage

Performance

- Leading performance supports demanding applications
- Leverage 2.5-inch drives to achieve optimal performance density
- Leverage 10GbE host connectivity to satisfy throughput-demanding applications

Optimized Utilization

- Thin provisioning optimizes capacity utilization and simplifies storage planning and monitoring

Scalability

- Scale storage capacity (up to 144 drives) as needed through expansion enclosures

Management

- User-friendly and intuitive SANWatch interface allows for simple storage management

Green

- Energy efficient power supplies
- Dynamic cooling
- Intelligent multi-level drive spin-down

Downtime can have serious consequences for enterprises and SMBs. The challenge for SMBs is to pro-actively prevent downtime within a limited budget. With today's price points in mind, the CRS storage solution provides comprehensive data protection to ensure the highest data availability for the storage area network (SAN) and direct attached storage (DAS). Coupled with advanced hardware design, modular architecture, easy and intuitive management and exceptional price-performance, CRS brings price-conscious companies decisive competitive edge by making IT efficiency keep up with growing storage needs.

High-Availability SAN Delivers Great Price-Performance

Data availability is critical to any business operation. Cheetah CRS storage solution features high-availability hardware designs with redundant, hot-swappable hardware components, such as RAID controllers, power supplies and cooling fans, to eliminate single point of failure. Hardware RAID protection ensures data accessibility during drive failure. In the event of a power outage, CacheSafe technology will automatically leverage power of the Battery Backup Unit (BBU) to safeguard cached data by writing it to the flash module for permanent retention. To protect valuable data sets against more critical threats, CRS also supports local and remote replication capabilities. Data availability can be achieved with minimal downtime in case of human errors or data volume failure by employing the CRS replication features. Leveraging Infortrend's world class RAID engine, the CRS storage solution delivers breakthrough performance for demanding business applications. The models supporting Small Form Factor (SFF) drives can further increase performance density to support highly IO-intensive applications.

Flexible Scalability

The CRS storage solution supports dynamic scaling to aid in the planning for future storage growth while satisfying the current storage needs. Flexible drive type and capacity support (2.5-inch or 3.5-inch, SAS or SATA, and various drive sizes) satisfies current applications and enables you to accommodate future needs. CRS storage solution can be expanded to up to 144 drives to meet the proliferation of storage growth. The "scale as you grow" flexibility of the CRS storage solution minimizes upfront investment and provides the best overall Total Cost of Acquisition (TCA).

Intuitive and Easy Management

Storage management should be simple. The CRS storage solution includes a comprehensive management software suite, SANWatch, to centrally manage multiple CRS subsystems over a standard TCP/IP network. CRS status and event information summary can be viewed on the portal window. Necessary functions to configure, manage and monitor the CRS are only a few clicks away. Besides providing all firmware features through a user-friendly GUI, SANWatch also supports script-based configuration of multiple CRS subsystems simultaneously. Automatic critical event notifications can be customized to suit the most critical storage environment. SANWatch will guide users through initializing, configuring and maintaining the CRS every step of the way.

High Energy Efficiency

Contributing to environmental sustainability, the CRS storage solution enables energy cost-savings while maintaining performance. It is equipped with power saving designs such as high-efficiency power supplies, dynamic cooling mechanism and intelligent multi-level drive spin-down technology.

	CRS I-S16-R2240	CRS I-S16-S2240	
Hardware Configurations			
Storage Controller	Dual redundant	Single	
Host Connectivity	4 x 10GbE iSCSI ports	2 x 10GbE iSCSI ports	
Cache Memory (per controller)	Default 1GB ¹ , up to 4GB		
Drive Connectivity	6Gb/s SAS or 3Gb/s SATA		
Max. Drives (per system)	16		
Max. Drives (via JBOD)	112		
Expansion Enclosure (JBOD)	CRS S-S16-J2000-R	CRS S-S16-J2000-S	
SAS Expansion Port (per controller)	1 x 6Gb/s SAS 4x wide port		
Supported Drives ²	300GB, 450GB or 600GB - 3.5" 15,000 RPM 6Gb/s SAS drives 300GB, 450GB or 600GB - 2.5" 10,000 RPM 6Gb/s SAS drives 1TB or 2TB - 3.5" 7,200 RPM 3Gb/s SATA drives ³		
Power Supplies	Two redundant 530W		
Form Factor ⁴	3U, 19-inch rackmount		
Green	80 PLUS-certified 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 1024 LUNs		
Data Services			
Local Replication ⁵	Snapshot	Snapshot images per source volume Snapshot images per system	Standard License: 64 / Advanced License: 256 Standard License: 1,024 / Advanced License: 4,096
	Volume Mirror/Copy	Source volumes per system Replication pairs per source volume Replication pairs per system	Standard License: 16 / Advanced License: 32 Standard License: 4 / Advanced License: 8 Standard License: 64 / Advanced License: 256
Remote Replication ⁶	Replication source volume Replication pairs per source volume Replication pairs per system	16 4 64	
Thin Provisioning ⁵	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space.		
Availability and Reliability	Redundant, hot-swappable hardware modules Multi-pathing support (EonPath); Device mapper support CacheSafe technology: protects cached data during power outage by flushing data into flash memory		
Management	SANWatch management suite; Embedded RAIDWatch; Terminal via RS-232C; Telnet/SSH; LCD keypad panel		
Notification	Email, Fax, LAN broadcast, SNMP traps, SMS, MSN messenger		
OS Support²	Windows Server 2003, Windows Server 2008, 2008 R2 (including Hyper-V), Red Hat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, Mac OS X, IBM AIX, VMware, Citrix XenServer		
Service and Support⁷			
Standard Service	3-year limited hardware/software warranty and 8x5 phone, web and email support		
Upgrade/Extension Options ⁸	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		

	CRS I-S24-S2142	CRS I-S16-R2142 CRS I-S16-S2142	CRS I-S12-R2140 CRS I-S12-S2140
Hardware Configurations			
Storage Controller	Single	Dual redundant or single	Dual redundant or single
Host Connectivity	6 x 1GbE iSCSI ports per controller	6 x 1GbE iSCSI ports per controller	4 x 1GbE iSCSI ports per controller
Cache Memory (per controller)		Default 1GB ¹ , up to 4GB	
Drive Connectivity		6Gb/s SAS or 3Gb/s SATA	
Max. Drives (per system)	24	16	12
Max. Drives (via JBOD)	104	112	84
Expansion Enclosure (JBOD)	CRS S-S16-J2000-S	CRS S-S16-J2000-R CRS S-S16-J2000-S	CRS S-S12-J2000-R CRS S-S12-J2000-G
SAS Expansion Port (per controller)		1 x 6Gb/s SAS 4x wide port	
Supported Drives ²	300GB, 450GB or 600GB - 3.5" 15,000 RPM 6Gb/s SAS drives 1TB or 2TB - 3.5" 7,200 RPM 6Gb/s Nearline SAS drives 300GB, 450GB or 600GB - 2.5" 10,000 RPM 6Gb/s SAS drives 1TB or 2TB - 3.5" 7,200 RPM 3Gb/s SATA drives ³		
Power Supplies	Three redundant 405W	Two redundant 530W	Two redundant 530W Two redundant 350W
Form Factor ⁴	4U, 19-inch rackmount	3U, 19-inch rackmount	2U, 19-inch rackmount
Green	80 PLUS-certified power supplies ⁵ 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 1024 LUNs		
Data Services			
Local Replication ⁶	Snapshot	Snapshot images per source volume Snapshot images per system	Standard License: 64 / Advanced License: 256 Standard License: 1,024 / Advanced License: 4,096
	Volume Mirror/Copy	Source volumes per system Replication pairs per source volume Replication pairs per system	Standard License: 16 / Advanced License: 32 Standard License: 4 / Advanced License: 8 Standard License: 64 / Advanced License: 256
Remote Replication ⁷	Replication source volume Replication pairs per source volume Replication pairs per system	16 4 64	
Thin Provisioning ⁷	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space.		
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Management	SANWatch management suite; Embedded RAIDWatch; Terminal via RS-232C; Telnet/SSH; LCD keypad panel		
Notification	Email, Fax, LAN broadcast, SNMP traps, SMS, MSN messenger		
OS Support²	Windows Server 2003, Windows Server 2008, 2008 R2 (including Hyper-V), Red Hat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, Mac OS X, IBM AIX, VMware, Citrix XenServer		
Service and Support⁸			
Standard Service	3-year limited hardware/software warranty and 8x5 phone, web and email support		
Upgrade/Extension Options ⁹	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		

	CRS I-B24-R2142 CRS I-B24-S2142	CRS I-B12-R2140 CRS I-B12-S2140
Hardware Configurations		
Storage Controller	Dual redundant or single	Dual redundant or single
Host Connectivity	6 x 1GbE iSCSI ports per controller	4 x 1GbE iSCSI ports per controller
Cache Memory (per controller)	Default 1GB ¹ , up to 4GB	
Drive Connectivity	6Gb/s SAS or 3Gb/s SATA	
Max. Drives (per system)	24	12
Max. Drives (via JBOD)	144 ²	108 ³
Expansion Enclosure (JBOD)	CRS S-B24-J2000-R CRS S-S16-J2000-R ⁴ CRS S-S12-J2000-R ⁴ CRS S-B24-J2000-S CRS S-S16-J2000-S ⁴ CRS S-S12-J2000-S ⁴	CRS S-B12-J2000-R CRS S-S16S-J2000-R CRS S-S12-J2000-R ⁴ CRS S-B12-J2000-S CRS S-S16-J2000-S ⁴ CRS S12-J2000-S ⁴
SAS Expansion Port (per controller)	1 x 6Gb/s SAS 4x wide port	
Supported Drives ⁵	300GB, 450GB, 600GB - 2.5" 10,000 RPM 6Gb/s SAS drives 32GB or 64GB - 2.5" 3Gb/s SATA SSD ⁶	
Power Supplies	Two redundant 530W	Two redundant 380W Two redundant 250W
Form Factor ⁷	2U, 19-inch rackmount	1U, 19-inch rackmount
Green	Intelligent multi-level drive spin-down Dynamic cooling	
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 1024 LUNs	
Data Services		
Local Replication ^a	Snapshot	Snapshot images per source volume Snapshot images per system Standard License: 64 / Advanced License: 256 Standard License: 1,024 / Advanced License: 4,096
	Volume Mirror/Copy	Source volumes per system Replication pairs per source volume Replication pairs per system Standard License: 16 / Advanced License: 32 Standard License: 4 / Advanced License: 8 Standard License: 64 / Advanced License: 256
Remote Replication ⁹	Replication source volume Replication pairs per source volume Replication pairs per system	16 4 64
Thin Provisioning ⁹	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space.	
Availability and Reliability	Redundant, hot-swappable hardware modules Multi-pathing support (EonPath); Device mapper support CacheSafe technology: protects cached data during power outage by flushing data into flash memory	
Management	SANWatch management suite; Embedded RAIDWatch; Terminal via RS-232C; Telnet/SSH; LCD keypad panel	
Notification	Email, Fax, LAN broadcast, SNMP traps, SMS, MSN messenger	
OS Support⁵	Windows Server 2003, Windows Server 2008, 2008 R2 (including Hyper-V), Red Hat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, Mac OS X, IBM AIX, VMware, Citrix XenServer	
Service and Support¹⁰		
Standard Service	3-year limited hardware/software warranty and 8x5 phone, web and email support	
Upgrade/Extension Options ¹¹	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	

	CRS i-S16-R1140 CRS i-S16-S1140	CRS i-S12-S1140
Hardware Configurations		
Storage Controller	Dual redundant or single	Single
Host Connectivity	4 x 1GbE iSCSI ports per controller	2 x 1GbE iSCSI ports
Cache Memory (per controller)	Default 1GB ¹ , up to 4GB	
Drive Connectivity	3Gb/s SAS or SATA	
Max. Drives (per system)	16	12
Max. Drives (via JBOD)	112	84
Expansion Enclosure (JBOD)	CRS S-S16-J1000-R CRS S-S16-J1000-R CRS S16S-J1000-S CRS S-S16-J1000-S	CRS S-S12-J1000-S CRS S-S12-J1000-S
SAS Expansion Port (per controller)	1 x 3Gb/s SAS 4x wide port	
Supported Drives ²	300GB or 450GB - 3.5" 15,000 RPM 3Gb/s SAS drives 450GB or 600GB - 3.5" 15,000 RPM 6Gb/s SAS drives 1TB or 2TB - 3.5" 7,200 RPM 6Gb/s Nearline SAS drives 1TB or 2TB - 3.5" 7,200 RPM 3Gb/s SATA drives	
Power Supplies	Two redundant 530W	Two redundant 350W
Form Factor ³	3U, 19-inch rackmount	2U, 19-inch rackmount
Green	80 PLUS-certified power supplies ⁴ 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 1024 LUNs	
Data Services		
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