



8GB Fibre to SAS RAID's

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 business applications
- Leverage 2.5-inch drives to achieve optimal performance density
- Hybrid host connectivity models offer cost-effective remote replication and SAN tiering

Optimized Utilization

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

Scalability

- Scale storage capacity (up to 224 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 Cheetah 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, Cheetah CRS brings price-conscious companies a decisive competitive edge by making IT efficiency keep up with growing storage need.

High-Availability SAN Delivers Great Price-Performance

Data availability is critical to any business operation. Cheetah Storage 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 Cheetah's world class RAID engine and Fibre Channel protocol, 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 need. Flexible drive type and capacity support (2.5-inch or 3.5-inch, SAS or FC, and various drive sizes) satisfies current applications and enables you to accommodate future need. CRS storage solution can be expanded to more than two hundred drives to meet the proliferation of storage growth. The "scale as you grow" flexibility of the CRS storage solution minimizes the 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 F-S24-R2840 CRS F-S24-S2840 | CRS F-S16-R2842 CRS F-S16-S2842 | CRS F-S16-R2840 CRS F-S16-S2840 | CRS F-S12-R2840 CRS F-S12-S2840 |
|--|--|--|--|--|
| Hardware Configurations | | | | |
| Storage Controller | Dual redundant or single | | | |
| Host Connectivity (per controller) | 4 x 8Gb/s FC ports | 4 x 8Gb/s FC ports + 2 x 1GbE iSCSI ports | 4 x 8Gb/s FC ports | 4 x 8Gb/s FC ports |
| Cache Memory (per controller) | Default 1GB ¹ , up to 4GB | | | |
| Drive Connectivity | Exclusively 6Gb/s SAS | | | |
| Max. Drives (per system) | 24 | 16 | 16 | 12 |
| Max. Drives (via JBOD) | 104 | 112 | 112 | 84 |
| | CRS S-S16-J2000-S | CRS S-S16-J2000-S | CRS S-S16-J2000-S | CRS S-S12-J2000- |
| SAS Expansion Port | 1 x 6Gb/s SAS 4x wide port per controller | | | |
| 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 | | | |
| Power Supplies | Three redundant 405W | Two redundant 530W | Two redundant 530W | Two redundant 530W Two redundant 350W |
| Form Factor ³ | 4U, 19-inch rackmount | 3U, 19-inch rackmount | 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 | | | | |
| 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 | |
| | Replication source volume | 16 | | |
| | Replication pairs per system | 64 | | |
| Thin Provisioning ⁶ | "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, HP-UX, 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 F-S24-R1840 CRS F-S24-S1840 | CRS F-S16-R1840 CRS F-S16-S1840 | CRS F-S12-R1840 CRS F-S12-S1842 |
|--|--|--|--|
| Hardware Configurations | | | |
| Storage Controller | | Dual redundant or single | |
| Host Connectivity | | 4 x 8Gb/s FC ports per controller | |
| Cache Memory (per controller) | | Default 1GB ¹ , up to 4GB | |
| Drive Connectivity | | Exclusively 3Gb/s SAS | |
| Max. Drives (per system) | 24 | 16 | 12 |
| Max. Drives (via JBOD) | 104 | 112 | 84 |
| Expansion Enclosure (JBOD) | CRS D-S16-J1000-R CRS S-S16-J1000-R CRS S-S16-J1000-S CRS S-S16-J1000-S | CRS S-S16-J1000-R CRS S-S16-J1000-R CRS S-S16-J1000-S CRS S-S16-J1000-S | CRS S-S12-J1002-R CRS S-S12-J1002-R CRS S-S12-J1000S CRS S-S12-J1000S |
| 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 | | |
| Power Supplies | Three redundant 405W | Two redundant 530W | Two redundant 530W Two redundant 350W |
| Form Factor ³ | 4U, 19-inch rackmount | 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 | 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 ⁶ | "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, HP-UX, 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 F-S24-R1440 CRS F-S24-S1440 | CRS F-S16-R1440 CRS F-S16-S1440 | CRS F-S12-R1440 CRS F-S12-S1440 |
|--|--|--|--|
| Hardware Configurations | | | |
| Storage Controller | Dual redundant or single | | |
| Host Connectivity | 2 x 4Gb/s FC ports per controller | | |
| Cache Memory (per controller) | Default 1GB ¹ , up to 4GB | | |
| Drive Connectivity | Exclusively 3Gb/s SAS | | |
| Max. Drives (per system) | 24 | 16 | 12 |
| Max. Drives (via JBOD) | 104 | 112 | 84 |
| Expansion Enclosure | CRS S-S16-J1000-R CRS S-S16-J1000-R CRS S16S-J1000-S CRS S-S16-J1000-S | CRS S-S16-J1000-R CRS S-S16-J1000-R CRS S16S-J1000-S CRS S-S16-J1000-S | CRS S-S12-J1002-R CRS S-S12-J1002-R CRS S12S-J1000S CRS S-S12-J1000S |
| 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 | | |
| Power Supplies | Three redundant 405W | Two redundant 530W | Two redundant 530W Two redundant 350W |
| Form Factor ³ | 4U, 19-inch rackmount | 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 | | | |
| 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 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 Support² | Windows Server 2003, Windows Server 2008, 2008 R2 (including Hyper-V), Red Hat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, Mac OS X, HP-UX, 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 F-F16-R4031-6 CRS F-F16-S4031-6 | CRS F-F16-R4840 CRS F-F16-S4840 |
|--|--|--|
| Hardware Configurations | | |
| Storage Controller ¹ | Dual redundant or single | |
| No. of Host Channels | 4 or 2 ² (4Gb/s) | 2 per controller (8Gb/s) |
| Cache Memory (per controller) | Default 1GB, up to 2GB | Default 1GB ³ , up to 4GB |
| No. of Drives (Exclusively 4Gb/s FC) | 16 | 16 |
| Max. No. of Drives (via SBOD) | 224 | 112 |
| Expansion Enclosure (SBOD) | ES F16F-J4000-R ESA16F-J2430-G | ES F16F-J4000-R ESA16F-J2430-G |
| No. of Drive Expansion Channels (4Gb/s FC) | 4 or 2 | 4 |
| Power Supplies | Two redundant 530W | |
| Form Factor ⁴ | 3U, 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 |
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| Notification | Email, Fax, LAN broadcast, SNMP traps, SMS, MSN messenger | |
| | Linux, SUSE Linux Enterprise, Sun Solaris, Mac OS X, HP-UX, IBM AIX, VMware, Citrix XenServer | |
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