



Dell™ Compellent™ Storage Center technical specifications



The Dell Compellent Storage Center SAN is built on a flexible, persistent platform that supports the continual adoption of new technologies as you grow. You can easily intermix drive technologies and build a unified storage solution without worrying about a forklift upgrade. Integrated software applications allow you to move beyond simply storing data to actively, intelligently managing data to cut the time, cost and risk of enterprise storage.

Modular, scalable hardware

- Works with FC, iSCSI and FCoE protocols
- Standards-based, technology independent
- Highly available architecture
- Add capacity, connectivity and performance on demand
- Mix and match drives and enclosures
- Add NAS to meet file-level requirements

Intelligent, automated software

- Suite of powerful, innovative software applications
- Provision volumes from a single, shared pool
- Optimize utilization, speed local and remote replication
- Automate data movement between tiers and RAID levels

Centralized, streamlined interface

- Centralized, point-and-click wizard-based setup and management
- Comprehensive PhoneHome capabilities
- Automatic notification when user-defined capacity thresholds are reached
- Advanced storage resource management capabilities

Interface	Hardware
 <p>Management interface Centralized interface streamlines administration and speeds common storage management tasks.</p>	 <p>Host connectivity</p> <ul style="list-style-type: none"> • FC • iSCSI • FCoE <p>Drive & enclosure connectivity</p> <ul style="list-style-type: none"> • FC • SAS <p>NAS</p> <ul style="list-style-type: none"> • Dell NX3000 for Dell Compellent • Dell Compellent zNAS <p>Controllers</p> <ul style="list-style-type: none"> • Clustered controllers provide automatic failover • Seamlessly connects to any open-systems server without the need for server agents • Mix and match Fibre Channel, FCoE and iSCSI server connectivity
<p>Software</p>  <p>Applications A powerful suite of enterprise capabilities to manage your data.</p> <ul style="list-style-type: none"> • Automated tiered storage • Thin provisioning • Storage virtualization • Continuous snapshots • Remote replication • Reporting and alerts (APP) 	

Storage Center hardware

Controller	Series 40
Number of controllers	1 or 2
PCI expansion slots	PCI - E = 6
Expansion slot adapters	FC, iSCSI, SAS, FCoE
Maximum number of ports	24
RAID level support	RAID 0, 5, 6 and 10
Modular architecture	Yes
Processor speed	2.53GHz quad-core
Active/active cluster	Yes
Power supplies redundant and hot-swappable	Yes
Cooling fans redundant and hot-swappable	Yes
Controller(s) redundant and hot-swappable	Yes, with clustered controllers
Controller cluster distance	300 meters
Cache	Series 40
Maximum cache size per system	12GB*
Multi-threaded read ahead, mirrored write cache	Yes
Cache back-up battery	n/a (no battery)

*Requires Storage Center 6.0 and optional memory upgrade

Storage Center hardware (cont.)

Front-end (host) interface	Series 40
Host interface support	FC (4Gb, 8Gb) iSCSI (1Gb, 10Gb) FCoE (10Gb)
Simultaneous host interface support	Yes, FC, iSCSI and/or FCoE
Maximum host ports	22
Fabric switch support	Yes
Host operating system support**	Microsoft Windows, Sun Solaris, HP-UX, Linux, IBM AIX, Novell NetWare, Apple, Tru64, VMware ESX
Server agent required	No
Microsoft cluster server support	Yes
Microsoft multipath input/output (MPIO) support	Yes
File-level support	Yes, Storage Center with NAS and zNAS

**See Dell Compellent Compatibility Matrix for latest supported Operating Systems.

Portable Volume	
Number of disk drives (per kit)***	2 enterprise-class external hard drives
Disk drive capacity	2TB each
Connectivity	USB 2.0
Encryption****	128-bit AES
SAN auto-detect	Yes
Travel case	Ruggedized w/TSA-approved lock

***Available as complete kit only.
Multiple kits can be used concurrently.
****User selectable

Network attached storage	Dell NX3000 for Dell Compellent	Dell Compellent zNAS
Hardware		
Form factor	2U rack mount	1U rack mount
Clustering	Yes, up to 4 nodes	Yes, up to 2 nodes
CPU	2 quad-core Intel Xeon X5650 (2.66 GHz), 64-bit	2 quad-core Intel Xeon E5540 (2.53 GHz), 64-bit
Memory capacity	24GB ECC DDR3 DIMM RAM	24GB or 48GB ECC DDR3 DIMM RAM
Expansion slots	4 PCI-E	2 PCI-E
Connectivity	On-board: 4 1GbE ports LAN: 1 quad-port 1GbE NIC or 1 dual-port 10GbE NIC SAN: 1 dual-port 8Gb Fibre Channel HBA, 1 quad-port 1GbE NIC for 1Gb iSCSI, or 1 dual-port 10GbE NIC for 10Gb iSCSI	On-board: 2 1GbE ports LAN: 1 quad-port 1GbE NIC or 1 dual-port 10GbE NIC SAN: 1 dual-port 8Gb Fibre Channel HBA
Remote management	IPMI card	Embedded IPMI card
Hard disk	Yes, 2 internal 15K SAS drives	No, boot from SAN (diskless)
Peripheral devices	CD/DVD-ROM	CD/DVD-ROM
High availability	Redundant power supplies, clustered heads (up to 4) with active/active failover	Redundant power supplies, clustered heads (up to 2) with active/active failover
Software		
Platform	Windows Storage Server 2008 R2 Enterprise Edition	OpenSolaris ZFS
Environment	Ideal for pure CIFS	Ideal for pure NFS or mixed CIFS/NFS
Administration	Active Directory	LDAP or mixed
Volume management	Windows and Storage Center integrated volume creation	Integrated volume creation

Storage Center hardware (cont.)

Enclosures	FC 3.5"	SAS 3.5"	SAS 2.5"
Interfaces	4Gb	6Gb	6Gb
Max number of back-end ports	22	20	20
Rack space	3U	2U	2U
Number of bays	16	12	24
Max number of back-end loops/chains	11	10	10
Enclosures per loop/chain	7	8	4
Drive support	FC (3.5")	SAS (3.5")	SAS (2.5") SSD
Intermixed drive capacities	Yes	Yes	Yes
Max number of drives per system ¹	1,232	960	960
Drive capacities	15,000 RPM: 300GB, 450GB, 600GB 10,000 RPM: 450GB	15,000 RPM: 450GB, 600GB 7,200 RPM: 1TB, 2TB, 3TB	SSD: 200GB 15,000 RPM: 146GB 10,000 RPM: 450GB, 600GB, 900GB 7,200 RPM: 1TB
Power supplies redundant and hot-swappable	Yes	Yes	Yes
Drives redundant and hot-swappable	Yes	Yes	Yes
Automatic drive failover	Yes	Yes	Yes
Automatic drive rebuild	Yes	Yes	Yes
Maximum number of hot spares	Configurable	Configurable	Configurable

¹The maximum usable capacity supported by a system varies based on configuration.

Operating environment

	Series 40 Controller	FC Enclosure (3.5" disks)	SAS Enclosure (3.5" disks)	SAS Enclosure (2.5" disks)
Physical configuration	Rack	Rack	Rack	Rack
Height	5.2" (132 mm), 3 EIA Units	5.12" (130 mm), 3 EIA Units	3.46" (87.9 mm), 2 EIA Units	3.46" (87.9 mm), 2 EIA Units
Width	17.2" (437 mm)	19.0" (482.6 mm)	19.0" (482.6 mm)	19.0" (482.6 mm)
Depth	25.5" (648 mm)	19.7" (500 mm)	24.8" (630 mm)	24.8" (630 mm)
Weight	75 lbs. (34.1 kg)	78 lbs. (35 kg)	57 lbs. (25.8 kg)	53 lbs. (24 kg)
Power consumption	400 watts	450 watts	410 watts	425 watts
Power supplies	Dual (redundant)	Dual (redundant)	Dual (redundant)	Dual (redundant)
Heat dissipation (BTU/hr)	1,365	1,540	1,725	1,785
Temperature	50°F – 95°F (10°C – 35°C)	41°F – 104°F (5°C – 40°C)	41°F – 104°F (5°C – 40°C)	41°F – 104°F (5°C – 40°C)
Humidity (non-condensing)	8% – 90%	20% – 80%	8% – 80%	8% – 80%
Inlet type	NEMA 5-15/CS22.2, n°42	NEMA 5-15/CS22.2, n°42	NEMA 5-15/CS22.2, n°42	NEMA 5-15/CS22.2, n°42
Emissions/safety				
Controller Series 40	FCC Class A; EN55022 Class A; EN 61000-3-2/-3-3; CISPR 22 Class A; EN55024/CISPR 24; (EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11); EN60950/IEC 60950 Compliant UL Listed (USA), CUL Listed (Canada), TUV Certified (Germany), CE Marking (Europe)			
Enclosure FC	UL and cUL listed. Tested to UL/IEC/EN 60950. Certified Body Certificate and Report to IEC60950. CE marked to the requirements of the Low Voltage Directive 73/23/EEC and the Electromagnetic Compatibility Directive 89/336/EEC. FCC Class A. EMC: EN55022/EN61000-3-2, EN61000-3-3			
SAS	EMC FCC pt15B Class A, EN55022 Class A, CISPR 22 Class A, EN 55024, CISPR24, aEN61000-3-2/3, CNS13438 Safety EN/ IEC/UL 60950-1, CNS14336 CB report: CE, UL, cUL, FCC, BSMI			

Storage center software

About Dell™ Compellent™

Part of the Fluid Data architecture, Dell Compellent provides storage solutions that optimize efficiency, agility and resiliency for enterprises and the cloud. With built-in intelligence and automation, Dell Compellent helps organizations cut overall storage costs, secure data against downtime and disaster, and scale on a single platform in line with business needs. For more information, visit Dell.com/Compellent.

Hardware and software warranty

- 5-year limited hardware warranty*
- 90-day software warranty
- 24x7 call center support
- Advance hardware parts exchange

Storage Center core	
Disk Virtualization	Manage disks as a single pool and present disk resources to any server
Port Virtualization	Increase port capacity, disk bandwidth and I/O connectivity while enhancing failover
Server Mapping	Rapidly map hundreds of virtual servers simultaneously
Disk Optimizer	Intelligently restripe data as disks are added to optimize performance
Thin Import	Convert data from legacy systems into thin provisioned volumes on a Dell Compellent SAN
Application Optimizer	Set the size of data transfers within the SAN to match I/O performance for different applications
Copy-Mirror-Migrate	Make copies or mirrors and migrate volumes without impacting users
Boot from SAN	Allow diskless servers to share storage resources and boot from the SAN
Heterogeneous OS	Support any number of simultaneous operating systems
LUN Masking	Hide unassigned LUN/ID numbers for secure storage domains
Performance Monitoring	Real-time reports to identify and optimize performance and utilization
Unified User Interface	Enterprise-level functionality through a common intuitive user interface
System Administration	Operate from any standard browser and create unique user profiles with administrator configured privileges
Remote Monitoring/ PhoneHome	Remotely report status and automatically trigger service responses
Storage Center Applications	
Data Instant Replay	Create space-efficient Replays (snapshots) that restore data instantaneously while ensuring the integrity of enterprise application data spanning multiple volumes (Consistency Groups)
Remote Instant Replay	Create space-efficient Replays (snapshots) of data at multiple locations and expedite initial synchronization (Portable Volume)
Dynamic Capacity	Allocate space based on actual data written (Thin Provisioning)
Data Progression	Automate tiered storage between storage classes based on user-defined rules
Fast Track	Place active data on the outer tracks of a disk
Dynamic Controllers	Cluster storage controllers to increase system availability and performance
Enterprise Manager	Comprehensive monitoring, reporting and remote replication management
Multipath Manager for Microsoft Servers	Failover and load balancing for Microsoft Servers (MPIO)
Replay Manager for Microsoft Servers	Non-disruptive Replays for Microsoft Servers (VSS)
Live Volume	Online migration of volumes between storage systems



Manage data differently at Dell.com/Compellent

*For copy of Ltd Hardware Warranty, write Dell USA LP, Attn: Warranties, One Dell Way, Round Rock, TX 78682 or see www.dell.com/warranty.
© 2012 Dell Inc. All Rights Reserved. Dell, the Dell logo and Compellent are trademarks of Dell Inc. SSCMLSCS_041912