



Dell Storage Center Software Suite

Automated, integrated enterprise storage software

Data has become the fuel that drives business acceleration, making organizations today extremely reliant on data storage. And that makes the storage decision strategic, far-reaching and full of risk. Limited-point products, dead-end growth paths, and bolt-on software applications create rigid boundaries around data storage. With an integrated software feature set, Dell Storage Center enables enterprises of all sizes to move beyond simply storing data to actively, intelligently managing data. Powerful storage software with built-in automation optimizes the provisioning, placement and protection of data throughout its lifecycle.

Built from the ground up to manage data differently, Dell™ Storage Center leverages a patented architecture that changes the way data is managed. Empowered by real-time system intelligence about each block, data is moved where it's needed, when it's needed, based on actual use and performance requirements. This granular, real-time system intelligence enables Storage Center to virtualize the storage infrastructure, bringing additional efficiency and data protection to enterprise storage by creating a pool of high-performance storage shared by all client hosts.

The latest operating system release brings a new level to Storage Center efficiency. It is a ground-breaking leap forward in the evolution of the Dell SC platform, offering this diverse environment the ideal access point to deploy uniquely adaptable, future-ready storage solutions. This release is further solidified with unified management and cross-platform replication¹ between SC Series and PS Series arrays.

Maximize storage utilization

Built into every Dell Storage Center SC Series system, Dynamic Capacity thin provisions volumes for ultra-efficient storage utilization. Our advanced thin provisioning completely separates storage allocation from utilization, enabling you to allocate any size volume up front, yet only consume physical capacity when data is written. You can even reclaim capacity that is no longer in use by applications, automatically reduce the space needed for OS volumes, and convert traditional volumes on existing storage to thin-provisioned capacity.

Deliver better performance with less hardware

Dell Storage Center improves platform efficiency with enhanced data reduction techniques that virtualizes storage at the drive level, accelerating data access by spreading read/write operations across all drives and processing multiple requests in parallel. You can create high performing, highly-efficient volumes in seconds without allocating drives to specific servers, without complicated capacity planning and without performance tuning. Remove the limitations of physical drives and dynamically change and scale your virtualized pool without disruption or downtime. Sophisticated compression technology enables the ability to store significantly more data with fewer disks. Coupled with block-level deduplication and compression, you get the best data reduction techniques in the market.

Drive down the total cost of storage

With patented tiering technology, Dell Storage Center Data Progression improves platform efficiency by automatically classifying and migrating data to the optimal storage tier and RAID level based on actual usage. All new data is written to tier 1, RAID 10, and snapshots are moved on demand to RAID 5/6 on the same tier. Then the most active blocks of data remain on high-performance tier 1 drives, while less active blocks automatically move to lower cost, higher-capacity tier 3 drives. The result is storage that is always in tune with application needs — and an overall cost per GB that decreases as you grow.

Virtualize and manage with simplicity

VMware® Virtual Volumes (VVOLs) can now manage storage on a per VM basis using a more policy based approach. Be a leader in your virtualized data center making storage management simpler for the vSphere administrator. Volume Quality of Service (QoS) allows IT administrators to set thresholds helping manage users in the same group or organization. Manage your network from a business, rather than a technical perspective.

Protect data against downtime and disaster

With Data Instant Replay, you can take continuous space-efficient snapshots to speed the local recovery of lost or deleted files. Once an initial snapshot of a volume is taken, only the incremental changes in data need to be captured. Data Progression uses the readable snapshots to move data to lower cost drives that can then be used to recover any size volume to any server in less than 10 seconds.

Remote Instant Replay leverages storage snapshots between local and remote sites to deliver a cost-effective replication solution. After initial site synchronization, only incremental changes in data are replicated on an ongoing basis — cutting hardware, bandwidth and administration costs. You can replicate over Fibre Channel or iSCSI depending on your unique business requirements.

Provide dynamic business continuity

Live Migrate enables organizations to move storage on demand. All migration occurs transparently while applications remain online. In addition, Live Volume allows data to remain online and available in the event of a site or storage array failure with Live Volume auto-failover. Both these functionalities are fully integrated, eliminating the need for additional hardware or server-side agents.

Live Volume provides the ability to provide a zero recovery point and time objective (RPO/RTO) solution with Live Volume with auto-failover. This feature adds additional storage redundancy by providing the ability to continue storage availability in the event of an array failure, site failure, or even component failure within an array that would cause the volume incapable of performing IOPS. In addition to Live Volume's capability to automatically failover volumes between arrays, it also provides the ability to automatically repair the live volumes after an automatic failover. Over all, it lends itself to support for strong business continuity and disaster recovery.

Simple and seamless migration

The SC Series Live Migrate "storage hypervisor" feature² included with the base product, allows you to move data seamlessly between arrays without remapping your hosts, optimizing utilization of available capacity and cache across federated multi-array systems. Live Migrate is a federation technology allowing users to migrate data from one array to another to scale out to place data in the right place. Volume Advisor provides intelligent

data placement and recommendations on volume migrations to keep your storage environment running optimally.

Enhanced security

Feel at ease with self-encrypting drives (SED), offering a highly secure solution for organizations with regulatory compliance requirements, such as those within the finance, legal and healthcare industries. Unlike software-based encryption, SED security is built into each drive and cannot be turned off. No external mechanisms are required to encrypt and decrypt the data, which means the solution remains completely transparent to users and applications. In addition, Dell's FIPS 140-2 certified SEDs have no impact on system, network or workload performance — you simply install and use them like any other storage media. Leading remote key management platforms are supported, allowing large enterprise customers to leverage their existing key management investments.

Feature	Dell Storage Center Software Suite
Dynamic capacity	
Allocate on write technology	Yes
Pre-allocation required	No
Define volumes larger than physical storage	Yes
Automated page-based allocation	Yes
Allocation page size	2MB by default, with option of 512KB or 4MB
Dynamic RAID level conversion	Yes
Storage added online without disruption	Yes
Drive operations on written data only (including copy, replication and rebuilds)	Yes
User-defined thresholds for capacity utilization	Email, text, alerts, PhoneHome
Data Progression	
Storage tiers defined by	Drive type, RAID level, rotational speed, SSD class
RAID level support	RAID 0, 1, 5, 6 and 10
Drive support	SAS SSD, SAS HDD
Drive intermixing	Yes, any combination in shared pool (across tiers and RAID levels)
Volumes stored across multiple RAID levels and tiers	Yes
Snapshots migrated	Yes, automatic
Additional software required for data classification and movement	None
Data Instant Replay Remote Instant Replay	
Automated snapshot creation and scheduling	Yes
Pre-allocation required	No
Readable and writeable replays	Yes
Copy-on-write technology	No, points to data only

Feature	Dell Storage Center Software Suite
Volume clone required for recovery	No
Automated coalescence of expired replays	Yes
Replay scheduling frequency	Once, minutes, hours, days, weeks, month
Multiple replay schedules for volumes	Yes
Volume recovery using only snapshots	Yes
Replication topology options	Point-to-point, point-to-multipoint, peer-to-peer
Asynchronous replication support	Yes
Synchronous replication support	Yes, high consistency, high availability
Replication interface	Fibre Channel, iSCSI
Replication link speed	T1 and above
Replication link bandwidth estimation and optimization	Yes
Replay deduplication	Yes
Independent replay schedules per location	Yes
Validate volume recovery while links are operational	Yes
Volume recovery to any host	Yes
Integration with Microsoft® VSS and VMware SRM	Yes
Integration with Oracle	Yes
Live Volume	
Synchronous and asynchronous replication	Yes
Number of volumes supported	100
Managed through Dell Storage Manager	Yes
Migrate volumes non-disruptively	Yes
Distance limitation	None for Async, Application dependent on Sync and for VMware vSphere® Metro Cluster storage 10ms max
Microsoft PowerShell™ support	Yes
Supports clustered environments: MPIO	Yes
Primary site auto-migration	Yes

¹ Dell is the only storage vendor to offer native cross-replication across product lines. Source: Dell internal analysis (March 23, 2016) comparing against the top 5 other vendors in the mid-range enterprise market.

² Multiple SC Series (SC9000, SC8000, SC7020, SC4020) arrays may be deployed in federated configurations using the Live Migrate feature included with firmware version 7.1. Transparent, non-disruptive volume movement among arrays is enabled, allowing the combined capacity and cache of the entire federated cluster to be seamlessly utilized for maximum performance and scalability in expanding data centers. For example, a cluster of eight SC9000 arrays can provide a total of 8,192 drives (up to 48PB raw capacity) with over 4TB of system memory. Similar capability is available for arrays running previous firmware versions using the optional Live Volume feature.

Manage Data Differently at Dell.com/Storage

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