



Dell Storage SC Series Management Suite

Automated, integrated enterprise storage management

Managing complex storage tasks like live volume, encryption, replication and capacity planning for multi-terabyte SANs at multiple locations or even in a federated environment with more than one interface can be challenging. Operational costs and complexity can grow exponentially as storage capacity increases. Introducing Dell Storage Manager (formerly known as Enterprise Manager) the all-encompassing management tool that simplifies SAN administration with an intuitive interface that automates the most common storage tasks. Dell Storage Manager (DSM)¹ enables day-to-day management of SC Series and PS Series arrays from a single interface, and delivers centralized management of local and remote environments and tight integration with leading technology providers.

Manage storage with an intuitive interface

Dell Storage SC Series storage systems feature a unified, point-and-click user interface that cuts administration time and reduces the need for specialized administrative skills. The intuitive interface automates repetitive, time-consuming tasks so data center staff can focus on more critical projects. Wizards guide the process for tasks such as complex allocation, configuration and administration functions. Comprehensive SupportAssist capabilities deliver remote diagnostic and monitoring tools with automated alert and notification services.

Simplify multi-site administration with DSM

With DSM you can streamline administration and reduce operating costs with advanced features like volume-level QoS, VVOLs support² and departmental “charge-back” reporting, allowing instant visibility and control of a multi-terabyte, multi-location environment. You can gain instant visibility and control of storage resources enterprise-wide to streamline administration and reduce operational costs. DSM offers cross-platform replication capabilities between PS Series and SC Series arrays for seamless management. Configure and verify remote replication processes, monitor storage capacity and drive utilization in real-time, and generate comprehensive storage usage and performance reports — all from a single pane of glass.

Streamline disaster recovery and maximize bandwidth

DSM simplifies disaster recovery with remote replication setup in as few as six clicks. This streamlined replication management also allows recovery from disaster in just seconds with a single-click disaster declaration. Advanced bandwidth-shaping algorithms allow you to use the lowest bandwidth required while maintaining optimal performance.

Assign costs to storage and chargeback appropriate departments

The SC Series storage-based chargeback feature automatically calculates storage costs based on the actual space consumed by applications. Administrators can assign different costs to each volume based on drive class or storage tier. DSM monitors storage utilization and generates reports that identify the cost of storage consumption based on department name or account number. These chargeback reports can be scheduled for automatic email delivery to business units.

Illustrate your innovation with boardroom-ready reports

DSM empowers you with a real-time, C-level view and reporting for your Dell Storage SC Series infrastructure. Understand how utilization affects performance with features that summarize I/O usage and display ongoing CPU and memory consumption. Reduce network costs with bandwidth simulation and shaping. Be a hero in the boardroom with executive-ready reports that demonstrate bottom-line economical and eco-friendly savings from features like Dynamic Capacity, Data Instant Replay and Data Progression.

Manage data continuity for live applications with Application Protection Manager Suite

Dell Storage SC Series Management Suite is designed with flexibility in mind for the ever changing data center, and delivers superior data center automation for industry-leading applications with its Application Manager (APM) Suite. APM for Oracle[®] is a client/server application that creates and manages application-consistent replays for Oracle databases on a Dell Storage Center. APM Suite includes APM for Oracle and Replay Manager. Replay Manager provides application consistent array-based snapshots of VMware[®] virtual machines, Hyper-V[®] virtual machines, Microsoft[®] Windows Server[®] as well as Microsoft VSS enabled applications Exchange, SQL Server[®] without clones or downtime.

Dynamic business continuity with Live Volume

Live Volume, an innovative capability on the Dell SC Series arrays, delivers dynamic business continuity by migrating volumes intelligently between arrays or multiple systems, and helping organizations keep applications online and data accessible during planned maintenance. Live Volume provides the zero downtime volume migration capabilities between arrays for this federated configuration. Live Volume also provides the ability to stretch volumes between arrays providing read/write access from both arrays, while providing DR capabilities to quickly recover volumes on surviving arrays.

Live Volume’s auto-failover feature provides greater storage redundancy with continuous storage in the event of an array failure, site failure, or even component failure within an array arising out of natural causes or disasters. The ability to automatically repair the live volumes after an automatic failover lends itself further to support strong business continuity and disaster recovery.

Active collaboration with federated systems

The SC Series Live Migrate “storage hypervisor” feature² included with the base product, provides the ability to move volumes seamlessly between arrays without application downtime. This allows you to optimize the utilization of available capacity and performance across federated multi-array systems. Volume Advisor integrates with Live Migrate functionality to provide intelligent data placement and recommendations on volume migrations to keep your storage environment running optimally.

Automate your data center

With aggressive platform integration, ongoing interoperability testing and collaborative design efforts, Dell Storage SC delivers data center automation for industry-leading applications. For automation of repetitive tasks and integration into orchestrated management environments, Microsoft PowerShell™ SDK and RESTful APIs streamline system management with an intuitive scripting interface. These certified and validated platforms ensure seamless interoperability and support.

Feature	Dell Storage SC Series Management Suite
Storage Center Interface	
Intuitive point-and-click interface	Yes
Rapid setup and installation	Yes
SupportAssist capabilities	Yes, including automated alert and notification services coupled with remote diagnostic and monitoring tools
Integration of all software features	Yes
Interface spans the entire set of technologies, capabilities and configurations	Yes
Dell Storage Manager	
Data collection service OS support	Microsoft Windows Server®, 2008 R2, 2012, 2012 R2
Client OS support	Microsoft Windows®, Vista®, Microsoft Windows Server 2012, 2012 R2, Microsoft Windows 7, Microsoft Windows 8
Optional agent OS support	Microsoft Windows Server 2008, 2008 R2, 2012, 2012 R2
Database support	MySQL 5.1, 5.2, Microsoft SQL Server 2008, 2008 R2, 2012, Flat file
Resource usage identification	Systems, Drives, Volumes and Servers
Performance I/O utilization	Systems, Drives, Ports, Volumes and Servers
Storage Center connectivity	TCP/IP
Wizard-based replication creation	Yes
Replication progress reporting	Yes
Bandwidth validation and recovery	Yes
Disaster site recovery activation	Yes
VMware SRM adapter	Yes
User-configurable properties and security profiles	Yes
Configuration import and export	Yes
System log forwarding	Yes

Feature	Dell Storage SC Series Management Suite
Application Protection Manager Suite	
Integration with Oracle Management Suite and Enterprise Linux	ASM, Oracle RAC and database, 11gR2 and 12c (RAC is required)
Replay Manager - Integration with Microsoft VSS	Yes
Server OS support	Microsoft Windows Server 2008 R2, 2012, 2012 R2
Database support	Microsoft Exchange 2007, 2010, 2013 SQL Server 2005, 2008, 2012, 2014
Hypervisor support	Microsoft Hyper-V 2008 R2, 2012, 2012 R2 VMware vSphere® 5.0, 5.1, 5.5, 6.0
Clustering support	Yes
Volume recovery to any server	Yes
Management Compatibility	
Product	Version
Dell Storage Center	Storage Center OS versions 6.3–7.x Note: Version 6.4.1 is not supported.
Dell Storage FS8600	FluidFS versions 3.0, 4.0 and 5.0
Microsoft System Center Virtual Machine Manager (SCVMM)	Versions 2012, 2012 SP1 and 2012 R2
vSphere support	VMware vCenter™ 5.5, 6.0 and 6.1
VMware SRM support	6.0, 6.1
Data Collector Server Requirements	
Component	Requirement
Operating System	Microsoft Windows Server 2008 R2, 2012, 2012 R2
Processor	64-bit (x64) microprocessor with two or more cores
Memory	At least 4GB; 8GB if using the Dell Storage Replication Adapter (SRA) for VMware vCenter Site Recovery Manager
Disk space	At least 20GB; additional space is required to manage FluidFS cluster software upgrades
Software	Microsoft .NET Framework 4.0 Full Microsoft Windows PowerShell 3.0 or higher (for SMI-S only)
Web browser	Internet Explorer, Firefox, Safari, Google Chrome, Microsoft Edge
External database	Microsoft SQL 2008, 2008 R2, 2012, 2014, MySQL 5.5, MySQL 5.6, MySQL 5.7
Dell Storage client operating system	64-bit OS: Microsoft Windows 7, 8, 8.1, 10; Microsoft Windows Server 2008, 2008 R2, 2012, 2012 R2; SUSE® Linux Enterprise 12; Oracle Linux 6.5, 7.0; RHEL 6.7, 7.0, 7.1
Server Agent Requirements	
Component	Requirement
Operating System	64-bit OS: Microsoft Windows Server 2008, 2008 R2, 2012, 2012 R2, 2008 Core, 2008 R2 Core, 2012 Core
Processor	64-bit (x64) microprocessor with two or more cores
Software	Microsoft .NET Framework 4.0 full Microsoft Windows Installer 4.5 (included with Windows Server 2008 and later)

Dell Storage Center Integrations

Dell Storage SC Series Management Suite delivers superior data center automation for industry-leading applications. Storage Center has a vast array of integration points with VMware, Microsoft, Oracle, OpenStack, IBM, CommVault, Symantec, Foglight and more.



Dell Storage SC Series Management Suite for VMware integrates a VASA Provider, Replay Manager Service for VMware, and the vSphere Web Client Plug-in with VMware vSphere environments. These integrations are deployed as a virtual appliance (CITV) in a customer's vSphere environment.

- The Dell Storage VASA provider gathers information about the available storage topologies, capabilities and statuses of Storage Center arrays and passes this information to VMware vCenter, making it accessible to vSphere clients. This information helps administrators make intelligent decisions when selecting the data stores for new virtual machines.
- Dell Replay Manager Service for VMware enables schedulable virtual machine consistent storage snapshots and recovery of VMware virtual machines and data stores.
- Dell Storage vSphere Web Client Plugin for vCenter provides storage administrators the ability to manage Dell Storage with the VMware vSphere Web Client. To effectively run today's data centers, you need to manage both physical and virtual infrastructure involving multiple disconnected tools and processes that waste valuable time and resources. Dell has created a solution to address this problem while increasing task automation right from within the virtualization management console that you use most, VMware vCenter. The Dell Storage Center Web Client Plug-in streamlines tools and tasks associated with the management and deployment of Dell storage in your virtual environment. By extending management capabilities through vSphere, Dell Storage Center reduces the strain of having to switch between interfaces and reduces the required internal communication between the virtualization and storage administrators to create, assign and manage storage in a VMware environment.
- Dell Storage SC Series Management Suite includes a VMware Site Recovery Adapter that integrates Dell Storage with VMware Site Recovery manager to provide a disaster recovery solution that provides automated orchestration and non-disruptive testing of centralized recovery plans for virtualized applications.
- The Dell Compellent™ Solution Pack for vCenter Operations Manager delivers a single, view of virtualized infrastructures (servers to storage) powered by the VMware vRealize Operations Management Suite. The Solutions Pack delivers performance analysis and increased insight into storage to help detect capacity and performance issues so they can be corrected before they cause a major impact. The Dell Storage Solution Pack provides increased visibility, metrics and a rich collection of storage analytics for Dell Storage infrastructures in VMware virtual environments.



System Center Virtual Machine Manager (SCVMM)

Dell Storage SC Series Management Suite for Microsoft System Center Virtual Machine Manager (SCVMM) forms part of Microsoft's System Center line of management and reporting tools, alongside previously established tools such as System Center Operations Manager (SCOM) and System Center Configuration Manager. SCVMM is designed for management of large numbers of Virtual Servers based on Microsoft Virtual Server and Hyper-V. SCVMM leverages Dell Enterprise Manager SMI-S to automate Virtual Machine storage tasks.

System Center Operations Manager (SCOM)

Dell Storage SC Series Management Suite for System Center Operations Manager (SCOM) allows for discovery and monitoring of Storage Center arrays from the SCOM console. From a single console administrators can view easy to use Storage Center dashboards to see Performance and usage data on Storage centers, controllers, disk, servers, and volumes.

Replay Manager for Microsoft

Dell Storage Center's Replay Manager is a tool used to quickly and efficiently take consistent snapshots of Microsoft applications including SQL, Exchange and Hyper-V.

Replay Manager, combined with Storage Center Data Instant Replay (DIR), ensures reliable application consistent backup and recovery of Microsoft Volume Shadow Copy (VSS) enabled applications (Exchange, SQL and Hyper-V) and VMware virtual machines (VMs).

Through integration with VSS and VMware vCenter, Replay Manager is capable to scheduling automated, non-disruptive Replays (snapshots) of Windows Server and VMware VM volumes. Replay Manager Integrations enable Dell Storage to quiesce IO between the server and the storage volume, pausing applications and VMs, to provide an application consistent recovery point for replication and/or recovery purposes.

PowerShell Command Set

Dell Storage PowerShell command set provides administrators with ability to perform storage center tasks from the PowerShell interface. This provides the ability to script repetitive tasks as well as incorporating storage task into workflow engines such as Microsoft System Center Orchestrator or VMware vRealize Orchestrator.



Dell Storage Center Plug-in for Oracle Enterprise Manager is an Oracle Validated Integration (OVI) certified solution for SC Series storage arrays. It is a plug-in that provides Oracle Database administrators with visibility into their storage infrastructure pertaining to granular metrics, which can assist in identifying storage issues in an Oracle environment. It is developed to provide Oracle administrators visibility to storage infrastructure and granular storage metrics. The plug-in also provides storage relationship information between Oracle hosts and arrays. Furthermore, it provides relationship information from database to storage array to volume. The plug-in integrates easily with Oracle Enterprise Manager 12c to provide granular metrics for Dell Storage Center solutions.



Dell Storage SC Series Management Suite integrates with OpenStack™ software that controls large pools of compute, storage, and networking resources throughout a data center, managed through a dashboard or via the OpenStack API. The management suite protects your investment in Dell Storage by using it as part of your private or hybrid cloud infrastructure. The fully featured Dell Storage Center “Cinder” driver is included as a standard feature in the OpenStack release. It provides a comprehensive set of block storage services including volume creation, volume management along with snap shot and migration services.



Dell Storage Center is certified and supported with Symantec™ Storage Foundation powered by Veritas to deliver Comprehensive insight into the storage environment enabling improved usage and efficiency, dynamic multipathing, centralized management, deduplication, compression and more.



Dell Storage SC Series Management Suite integration with CommVault Simpana® IntelliSnap® is a proven configuration that provides an integrated unified and robust end-to-end data management solution that seamlessly enables data protection policies in physical as well as virtual environments. IntelliSnap technology integrates the complex lifecycle of snapshot management into one seamless framework. This integrated approach makes it quicker, easier and more affordable to harness the power of Dell Storage Center Replays, accelerating backup and recovery of applications, systems, VMs and data.



Dell Storage SC Series Management Suite for AIX increases the value of IBM solutions by giving AIX users access to the popular Dell Storage SC Series arrays. The Dell Storage Suite for AIX 2.0 is an approved solution found on the IBM's Global Solutions Directory. Dell's SC Series portfolio provides a scalable, massively efficient storage solution that can enhance

the performance of mission-critical applications while lowering overall data center costs. This free plug-in allows SC-connected AIX hosts to use MPIO techniques for enhanced availability and automatic path failover protection. The latest release also enables use of Dell's Virtual Ports capability, providing even greater path abstraction and protection, along with significant reductions in management overhead. Highlights include:

- The Dell Storage Suite for AIX is a driver software package that enables Dell Storage Center Solutions to be utilized in a wide range of IBM AIX environments
- Organizations that are supporting applications in AIX legacy, bare metal, multi-path I/O (MPIO), and virtualized modes now have the ability to leverage Dell Storage Center solutions
- IBM has designated the Dell Storage Suite for AIX as a “VIOS Recognized” under the Ready for Power Systems Software Validation program
- The Dell Storage Suite for AIX supports AIX release 6.1 and 7.0
- Dell Storage Suite for AIX is a no-cost driver package that contains path control module (PCM) and object data manager (ODM) software modules that work in concert with existing IBM AIX software
- This comprehensive solution support IBM AIX features such as dynamic tracking and multi-path I/O (MPIO)

Foglight®

The Dell Storage SC Series Management Suite and Foglight integration can help you visualize, analyze and optimize your entire storage infrastructure easily with in-depth analysis and expert advice from Foglight for Storage Management. The integration ensures optimal virtual machine performance and availability with actionable insights that help detect, diagnose and resolve potential issues from the application through the virtualization layer to the physical disk spindle. This solution allows you to control operating expenses (OPEX) and limit capital expenditures (CAPEX) by maximizing capacity utilization of your existing storage arrays during virtualization, consolidation and cloud initiatives.

For more information, white papers and reference architectures, go to [Dell Tech Center](#).

¹ DSM supports PS6xxx, PS-M4110 and PS4xxx arrays running PS 8.0 firmware or above. Note cross-platform replication is available now on SC9000, SC8000, SC7020, SC4020, PS6xxx, PS-M4110 and PS4xxx arrays running SCOS 7.0/PS 9.0 firmware or above.

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

