

DELL STORAGE SC4020 ARRAY



All-in-one form factor

Intelligent, self-optimizing array in an affordable, all-in-one form factor. Why choose between cost and competitive advantage? Best-in-class auto-tiering is now the economical choice.

In the past, advanced storage optimization techniques, available only on a huge scale, were the secret to big enterprise, big data success. The world's largest companies could achieve massive business results while simultaneously enjoying the lowest TCO-per-GB of storage. Cost-saving auto-tiering and data migration capabilities, expensive to acquire, remained out of reach for the resource-strapped smaller businesses that needed them most.

Today, your organization can access these powerful techniques starting with a compact, affordable, yet feature-rich and scalable solution from Dell Storage.

SC SERIES ADVANTAGE FOR EVERY BUSINESS

SC4020 arrays are based on Dell's award-winning SC8000 mid-range platform. Offering similar benefits at a smaller scale, the SC4020 may be deployed with any choice or combination of flash and traditional hard disk drives. Virtualized multi-tier storage policies are applied quickly and automatically, leveraging the unique characteristics of all your drives, and allowing you to target application-specific price and performance requirements with a minimum of planning or effort.

Dual redundant controllers, 24 internal drive slots, plus multiprotocol network, replication and expansion ports are all delivered in a space-saving 2U chassis, making the flexible SC4020 a true all-in-one solution. Add-on enclosures let you scale to over 1PB raw storage capacity per array; and when you're ready, you can link multiple SC Series arrays in federated clusters under unified management — with non-disruptive data movement between arrays through the included Live Migrate feature.

AUTO-TUNE YOUR DATA CENTER FOR MAXIMUM PERFORMANCE AND COST SAVINGS

Like the larger SC8000 or SC9000, SC4020 features innovative Data Progression technology that works in the background to provision and optimize data placement across all drives. Incoming writes are steered to the highest-performing tier at the fastest RAID level, providing an exceptional performance experience for your users. As data ages, it is automatically identified and moved to less expensive storage until it becomes more active again. Data is precisely where it's needed, when it's needed — resulting in an ideal blend of high IOPS and cost-savings.

Deploying with other SC Series or PS Series arrays

SC4020 is ideal for both standalone and distributed SC environments with management, expansion and drive support options shared across the portfolio. SC4020 can now also interoperate and coexist in PS (EqualLogic) environments. Unified day-to-day management and bi-directional replication lets PS customers add SC arrays at any time, extending and enhancing the value of either platform investment.

SPEND LESS TIME CONFIGURING AND MANAGING STORAGE

Dell's fully virtualized Storage Center platform enables unprecedented levels of efficiency and automation. All available capacity is combined in a single pool by default — and since individual disks and volumes can support multiple RAID levels, pre-allocation of RAID groups is not required.

The performance and capacity of the entire pool is presented to all RAID levels simultaneously, each of which dynamically expands or contracts as needed based on real-time access patterns. Thin provisioning best practices are automatically enforced, ensuring the best drive utilization, with no administrative intervention required.

DESIGNED AND OPTIMIZED FOR FLASH

SC4020 all-flash or hybrid SSD/HDD configurations can support multiple SSD tiers, combining the best attributes of write- and read-intensive drives. SC4020 all-flash solutions actually cost less than comparable 15K disk drive solutions — making it an easy choice to move 100% of your hot data to flash.¹

ENHANCE ANY ENVIRONMENT

SC4020 supports SANs natively, and with the Dell Storage FS8600 NAS front-end also supports file-based systems. Advanced features such as intelligent deduplication and compression, space-efficient snapshots, synchronous/asynchronous replication, data-at-rest encryption, and FastTrack drive optimization — along with world-class Dell Copilot Support² — make the SC4020 a perfect complement to any Dell server installation. Regardless of your current infrastructure, this open standard array helps you begin your migration to a modern storage architecture in small, affordable increments.

In today's global marketplace, the ability to efficiently store, manage, access and extract value from data is synonymous with business success. State-of-the-art storage virtualization is no longer a luxury — it is a key business requirement. Fortunately, the SC4020 now gives even small organizations and remote departments the self-optimizing resources necessary to succeed in a big data world. It's just one more way Dell is redefining the economics of modern storage.

Specifications

CHASSIS OVERVIEW

CHASSIS FORMAT	All-in-one (dual controllers, internal drive bays, networking and expansion ports)
RACK SIZE	2U
CONTROLLERS	2 per chassis (active/active)
PROCESSORS	2.5GHz 4-core Intel® Xeon® processors (2 per controller, 4 per chassis)
INTERNAL STORAGE CAPACITY	24 x 2.5" drive bays

¹ Based on internal Dell pricing analysis, July 2015.

² Dell Copilot Support received over 94% customer satisfaction rating for the past seven years in a row. Results based on internal Dell analysis of online surveys 2009-2015.

SYSTEM MEMORY	32GB per chassis (16GB per controller)
OPERATING SYSTEM	Dell Storage Center OS (SCOS) 6.5 or greater
EXPANSION CAPACITY	
EXPANSION ENCLOSURES	SC200 (12 x 3.5" drive slots, 6Gb SAS) SC220 (24 x 2.5" drive slots, 6Gb SAS) SC280 (84 x 3.5" drive slots, 6Gb SAS)
MAX DRIVE COUNT	192 (24 internal, plus 168 external), more in federated systems ³
MAX RAW CAPACITY (SAN)	1PB per array (SSD or HDD), more in federated systems ³
MAX RAW CAPACITY (NAS)	1PB per array with optional FS8600 6PB in single namespace (with FS8600 and multiple SC4020 arrays)
STORAGE MEDIA	SAS and NL-SAS drives; different drive types, transfer rates and rotational speeds can be mixed in the same system SSDs: write-intensive, read-intensive HDDs: 15K, 10K, 7.2K RPM
NETWORK AND EXPANSION I/O	
FRONT-END NETWORK PROTOCOLS	FC, iSCSI, SAS ⁴ (supports simultaneous multiprotocol)
MAX 16Gb FC PORTS	4 per array (SFP+)
MAX 8Gb/4Gb FC PORTS	8 per array (SFP+)
MAX 10Gb ISCSI PORTS	6 total per array – may be used for front-end iSCSI network or replication <ul style="list-style-type: none"> • 4 SFP+ optical or copper • 2 BASE-T
MAX 12Gb FRONT-END SAS PORTS	8 per array, 32 x 12Gb front-end SAS ports per federated systems ⁴
MANAGEMENT PORTS	2 per array (1Gb BASE-T)
BACK-END EXPANSION PROTOCOLS	6Gb SAS
MAX BACK-END EXPANSION PORTS	4 per array
FUNCTIONAL	
ARRAY CONFIGURATIONS	All-flash, hybrid or HDD arrays
STORAGE FORMAT	Block (SAN) and/or file (NAS) from same pool ⁵
DATA OPTIMIZATION	
AUTO-TIERING METHOD	Policy-based migration based on real-time data usage, customizable 512KB-4MB page size

³ 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.

⁴ Front-end SAS only supported with Dell PowerEdge 13th generation servers.

⁵ NAS support requires optional Dell Storage FS8600 NAS appliance.

AUTO-TIERING STRUCTURE	Up to 3 primary (media-based) tiers total, up to 2 SSD tiers (write- and read-intensive SSDs)
TIERING CUSTOMIZATIONS	Default and user-defined profiles, option to “pin” volumes to any tier
RAID SUPPORT	RAID 0, 1, 5, 6, RAID 10, and RAID 10 DM (dual mirror); any combination of RAID levels can exist on a single array
RAID TIERING	Auto-provisions and dynamically restripes multiple RAID levels on the same tier; no need to pre-allocate RAID groups
THIN PROVISIONING	Active by default on all volumes, operates at full performance across all features
DEDUPLICATION AND COMPRESSION	Selectable option per volume on SSD and/or HDD tiers Compression-only option also available
HDD OPTIMIZATION	FastTrack moves frequently accessed data to outer tracks for quicker response times
DATA MOBILITY AND MIGRATION	
REPLICATION	Synchronous/Asynchronous via FC or iSCSI Target/source relationships may be one-to-many or many-to-one Supports all SC data services on source and target volumes Change replication types and topologies on demand Supports cross-platform replication with PS Series/EqualLogic arrays (either direction)
VOLUME MOBILITY	Live Migrate (included with base product) enables host-transparent data movement between arrays; see also Federation section Maintains snapshots/replication relationships
THIN IMPORT	Space-efficient, non-disruptive data migration from PS Series (EqualLogic) arrays
THIN CLONES	Clone standalone volumes with zero duplication of data Clones maintain independent snapshots and replication Ideal for VDI, test/dev, other applications that require discrete instances of common data More efficient than dedupe for database copies
DATA PROTECTION, DISASTER RECOVERY, SECURITY	
BUSINESS CONTINUITY	Live Volume bi-directional auto-failover, auto-repair ⁶ Continuous operations, disaster recovery, disaster avoidance Includes third-site (tertiary) replication options Zero RTO/RPO with customizable site failover SLAs per volume Does not require identical hardware at each site VMware Metro Stretch Cluster support VMware Site Recovery Manager Microsoft Azure Site Recovery support
THIN SNAPSHOTS	Records changes only, snapshots auto-migrate to lower-cost storage
APPLICATION DATA PROTECTION	Application Protection Manager Suite protects and restores host-side data from array in Oracle, Microsoft or VMware environments
DATA-AT-REST ENCRYPTION	Self-encrypting drives (SED) in SSD or HDD formats

⁶ Requires optional Live Volume feature and 6.7-level firmware.

	<p>Full-disk encryption (FDE) based on AES-256</p> <p>Drives certified to FIPS 140-2 Level 2</p> <p>Key Management Server options available for FIPS 140-2 Level 1, 2 and 3</p>
EXTERNAL KEY MANAGER SUPPORT	<ul style="list-style-type: none"> • Gemalto's SafeNet KeySecure k460, SafeNet KeySecure k250, SafeNet KeySecure k150v • Thales EMS 200
MANAGEMENT	
MANAGEMENT INTERFACE	<p>Dell Storage Manager (DSM), formerly Enterprise Manager</p> <p>Multi-array, multi-site, cross-platform management from single interface</p>
FEDERATION	<p>Create large multi-array systems under unified management, with seamless workload migration between arrays via included Live Migrate feature. Add arrays non-disruptively, efficiently utilizing their combined capacity and performance. Volume Advisor monitors federated arrays to suggest optimal data placement and load balancing. Volume movement does not impact snapshots or replication data protection. Federate like or unlike arrays: SC9000, SC8000, SC7020, SC4020.³</p>
SCRIPTING SUPPORT	<p>Microsoft PowerShell API, RESTful API</p>
HOST OS SUPPORT	<p>Microsoft Windows Server®, Oracle® Solaris, HP®-UX, Oracle Enterprise Linux, IBM® AIX®, Novell® NetWare®, SUSE® Enterprise Linux®, Apple®, HPTru64, VMware, Citrix® XenServer®, RedHat®</p>
THIRD-PARTY APPLICATION INTEGRATION	<p>VMware, Oracle, Microsoft, IBM, OpenStack™, Symantec™, CommVault®, Foglight™, Docker™; see the SC Series Management spec sheet for additional integrations and details</p>
COEXISTANCE WITH PS SERIES (EQUALLOGIC) ARRAYS	<ul style="list-style-type: none"> • Replication in either direction • Day-to-day management from a single interface • Thin import: space-efficient, non-disruptive data migration from PS Series arrays
CERTIFICATIONS	<p>VMware vSphere Metro Storage Cluster, VMware SRM, Veritas Storage Foundations Suite, IBM VIOS Recognized, Oracle Validated Infrastructure (OVI); see Dell Storage Support Matrix for additional certifications and details</p>
REPORTING/ALERTS	<p>Support Assist (phone home), remote diagnostics and performance monitoring, automated alerts, reports and notifications, departmental chargeback</p>
PHYSICAL	
POWER SUPPLIES	<p>2 hot-swappable 580W power supplies</p>
MAX POWER	<p>580W</p>
INLET TYPE	<p>NEMA 5-15/CS22.2, n°42</p>
CHASSIS	<p>Height: 8.79 cm (3.46 inches)</p> <p>Width: 48.2 cm (18.98 inches)</p> <p>Depth: 54.68 cm (21.53 inches)</p> <p>Weight at maximum configuration: 24 kg (53 lb)</p> <p>Weight empty: 7 kg (15.4 lb)</p>
RACK SUPPORT	<p>ReadyRails™ II static rails for tool-less mounting in 4-post racks with square or unthreaded round holes or tooled mounting in 4-post threaded-hole racks</p>

ENVIRONMENTAL	Temperature Operating: 50 - 95°F (10 - 35°C) Non-operating: -40 - 149°F (-40 - 65°C) Humidity Operating: 10% to 80% with 29°C (84.2°F) maximum dew point Non-operating: 5% to 95% with 33°C (91°F) maximum dew point
SERVICES, WARRANTIES⁷	
SERVICES	Dell Copilot support with deployment and consulting services. Dell Copilot Optimize available for additional ongoing strategic counsel and guidance from a highly trained system analyst.
DIAGNOSTICS ENGINE	Integrated Dell Remote Access Controller (iDRAC)
SYSTEM SIZING	Dell Performance Analysis Collection Kit (DPACK) tool
DRIVE WARRANTY	All SSDs and HDDs are warrantied for full lifetime wear-out replacement with valid service agreement

⁷ Availability and terms of Dell Services vary by region. For more information, visit Dell.com/ServiceDescriptions.

⁸ OEM-ready available on certain models.

End-to-end technology solutions

Reduce IT complexity, lower costs and eliminate inefficiencies by making IT and business solutions work harder for you. You can count on Dell for end-to-end solutions to maximize your performance and uptime. A proven leader in Servers, Storage and Networking, Dell Enterprise Solutions and Services deliver innovation at any scale. And if you're looking to preserve cash or increase operational efficiency, Dell Financial Services™ has a wide range of options to make technology acquisition easy and affordable. Contact your Dell Sales Representative for more information.

OEM-ready version available

From bezel to BIOS to packaging, your storage arrays can look and feel as if they were designed and built by you. For more information, visit Dell.com/OEM.⁸

[Learn more at Dell.com/SCseries.](http://Dell.com/SCseries)

CONTACT US

To learn more, contact your local representative or authorized reseller.



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