Feature Brief

Dell Storage SC Series Data Reduction with Deduplication and Compression

Intelligent deduplication and enhanced compression complemented with platform efficiency provides the most comprehensive data reduction techniques

Lower cost of capacity for:

- Backups
- Virtual machines
- Email systems
- Collaboration systems
- Any application with a large quantity of duplicated data

Why deduplication?

- Adds to platform efficiency
- Reduces storage cost
- Lowers storage space requirements
- Extends storage retention

Why Dell Storage SC Series?

- Leverage industry leading auto-tiering capabilities
- Increase efficiences
- Deduplication and compression on flash drives and hard drives

Too much data, not enough time, not enough storage space, and not enough budget. Sound familiar? Ever since mainframes, IT organizations have worked hard to optimize storage capacity requirements and data protection processes. Cheaper storage may help, but isn't operationally efficient for many workloads. Instead we need to shrink data to manageable levels since too much of it can cause real problems.

Digital information has become the basis for any service in use today. As a result, the underlying systems providing access to digital information are expected to be online all the time. This has made it impossible to introduce data reduction solutions that impose any kind of downtime, whether it's actual inability to access the data, or even a major slowdown when accessing an optimized data set. Deduplication and compression provide an innovative approach in response to these demands.

Innovative technologies built from the ground up

In developing the SC Series, the goal since day one has been to create an architecture that is "fully-virtualized." Features such as RAID tiering, auto-tiering and thin methods complement data reduction techniques.

In fact, Dell offers the most comprehensive data reduction[1] techniques in the industry. Some mid-range enterprise vendors don't offer data reduction, which shows a lack of leadership in storage efficiency.

Lower cost of performance with better platform efficiency

With Storage Center OS (SCOS), the SC Series leverages the industry leading Data Progression (auto-tiering) technologies prioritizing data where it needs to be — at the right place, at the right time. Most frequently accessed data is stored in tier 1 storage, while less frequently accessed data is stored in tier 2 or tier 3 storage. Deduplication and compression further increases efficiency with intelligent data reduction — all of which is done behind the scenes.

Dell's unique data reduction methods are fully integrated with platform efficiency to intelligently manage data. For example, Data Progression targets deduplication and compression at the sub-LUN level, ensuring performance at a lower cost.

Lower cost of capacity with deduplication and enhanced compression

SCOS 7 or higher offers block-level deduplication and compression on the Dell Storage SC Series. The SC4020, SC8000 and SC9000[2] make deduplication and compression a breeze to help ease the burden of data growth.

Dell Storage Center's implementation of deduplication uses flash in the array for metadata. All writes are written to RAID 10. Once a snapshot of the data is taken, the data reduction algorithms process the data. This uses a similar process as other vendors that claim to provide inline deduplication by accepting data into a high-speed, non-volatile buffer and running a deduplication algorithm against it prior to writing the data to disk.

Dell's choice to integrate deduplication and compression into Data Progression is a natural fit and provides the effective benefits of inline deduplication while optimizing performance and data protection. Dell Storage SC Series deduplication and compression features offer up to 10:1 capacity savings with an average data reduction observed of 4:1 with mixed workloads.

Dell Storage Center has extended deduplication to hybrid-flash arrays as well as being able to deduplicate on both all-flash and spinning drives. This further enhances data reduction while increasing read performance of spinning drives in hybrid configurations through intelligent deduplication caching capabilities. These capabilities can increase read IOPS by up to 2.7x[3] and decrease read latency by up to 64%.[3]

Flash optimization with increased efficiencies

Deduplication and compression are available on SC Series arrays for both flash and spinning disks. No manual intervention is required, and upgrading to SCOS 7 allows you to realize capacity savings right away. The space efficiencies of the SCOS platform, combined with data reduction techniques enabled by flash, drives down the $/GB for all-flash and hybrid-flash arrays.

Dell offers flash at a cost of $0.45/GB and spinning disks at $0.10/GB.[4] With the space efficiency technologies, and an eye towards balancing performance as well as capacity over the long haul, all-flash and hybrid-flash arrays with space efficiency are a perfect fit for the storage needs of an increasingly broad spectrum of applications in your data center. By evaluating your data and existing infrastructure, you can determine your ROI when using all-flash and hybrid-flash arrays.

Data reduction flexibility

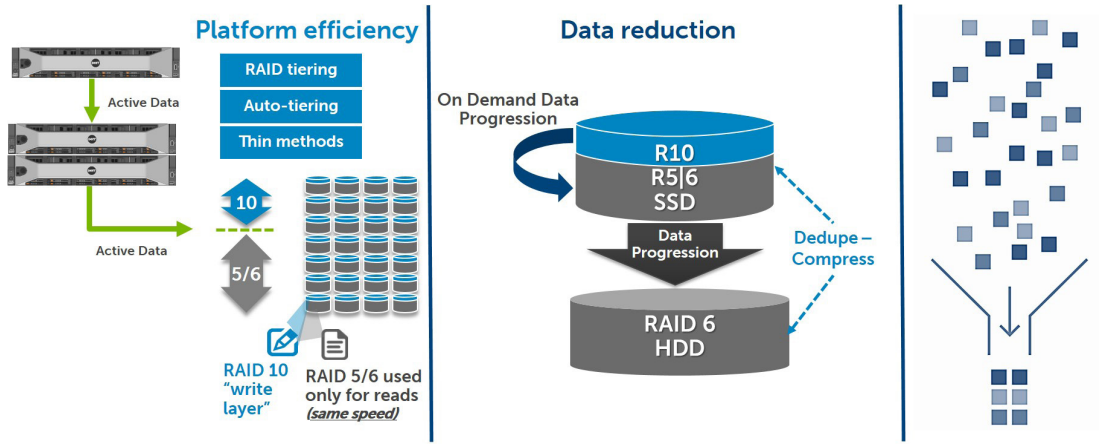
Dell Storage Center allows you the flexibility to turn on deduplication, which also implies compression on a per-volume basis, or enable compression only on a volume-by-volume basis. A compression-only option is helpful if you know that the data set on the volume is not very deduplicable, meaning all the data is unique but may be compressible. You also have the flexibility to deduplicate and/or compress all data on the volume or just the inactive data stored in snapshots where the data has been overwritten but still retained in a snapshot.

[1]Source: Dell internal analysis comparing against the top 5 vendors in the mid-range enterprise market

[2]Not available on the SCv2000 Series.

[3]Source: Dell internal analysis performed on SC8000 in April 2016. 177% performance improvement tested on 12 x 72k RPM HDDs with 32K block size, 100% read, 100% random, resulted in 2.7x increase in read IOPS and 64% decrease in read latency.

[4]Source: Dell internal analysis, March 2016. Net effective capacity after applying a 4:1 compression and deduplication ratio. Customer's price may vary based on a variety of circumstances and data should be used for comparison purposes.



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