# DELL Technologies

Dell IT simplifies operations and super charges its database performance by moving to a flexible, software-defined strategy with PowerFlex

In search of database agility

Over the past several years, Dell Digital, Dell's IT organization, has been transforming its traditional data center into a flexible, agile multi-cloud environment built on Dell Technologies infrastructure. As it modernized applications and migrated them to the Dell Digital Cloud, it also needed a way to modernize the accompanying databases to achieve that same flexibility and agility. It needed a storage solution that was easy to use, highly performant and scalable, and that would enable data to move from one cloud platform to another without extensive engineering work or fine-tuning. It needed to deliver the software-defined storage (SDS) part of Dell's software-defined data center strategy.

Shifting the majority of high-performance applications and tens of petabytes of accompanying data to PowerFlex has allowed Dell IT to simplify its storage architecture and move to a software-defined strategy for its cloud environment.
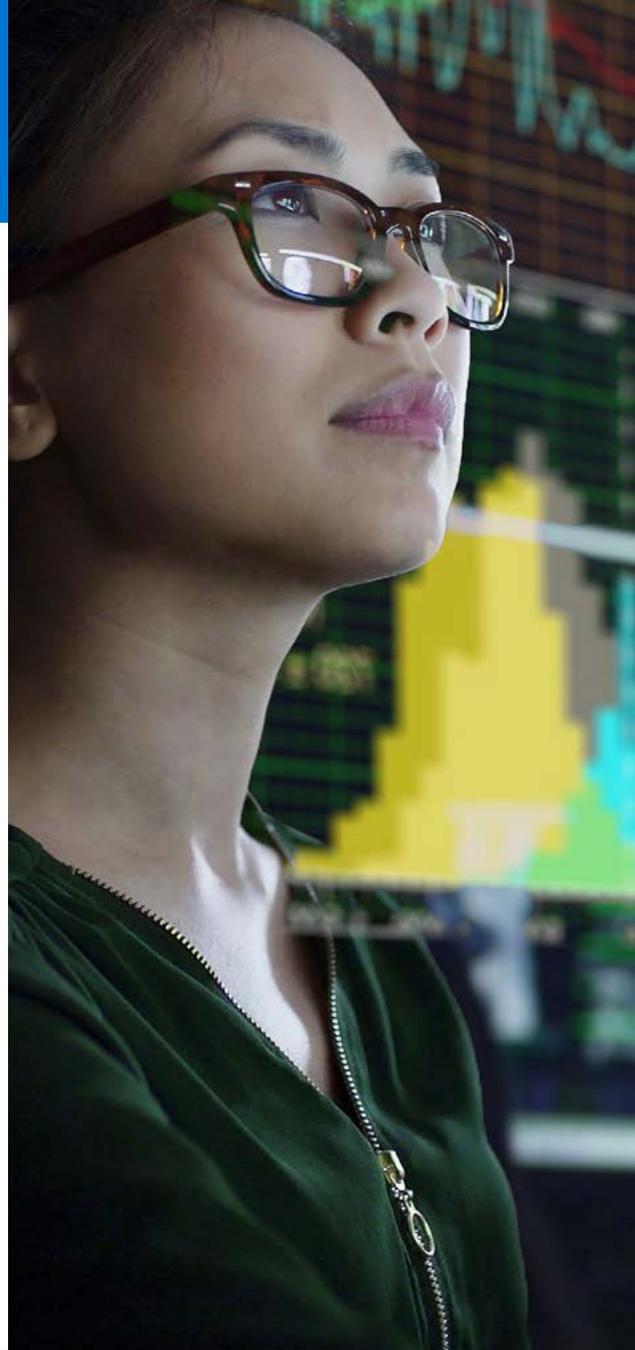
Software-defined storage across all workloads

Particularly in the wake of one of the biggest mergers in high-tech history, Dell had storage environments across the company utilizing a variety of Dell products. Creating a common framework for all of Dell's databases and applications to operate required moving towards an SDS strategy.

Enter Dell EMC PowerFlex, an SDS solution that supports everything from bare metal to virtualized and containerized infrastructure, with one common storage footprint. PowerFlex provides flexibility to run a uniform storage platform across all of Dell's different types of workloads— including Oracle databases, MongoDB, Cassandra DB, Microsoft SQL Server, and Hadoop clusters— and create a common experience.

Evolving PowerFlex technology has been central to Dell's storage strategy for its modern data center since 2016. As Dell Digital built its private cloud environment, it leveraged PowerFlex as its software-defined and hyperconverged infrastructure. PowerFlex delivers highly resilient, high-performance block storage services for these varied database landscapes.

Dell Digital has been working closely with its application and database teams to identify legacy environments and infrastructure, and actively migrate them to the Dell Digital Cloud primarily using PowerFlex. PowerFlex's simplicity and standardization means IT can offer blueprints and designs for the most common database and application types, enabling application and database owners to easily provision their new infrastructure for workload migration.

Dell currently has 1300 nodes of PowerFlex deployed, providing roughly 65 petabytes of capacity—the largest block storage platform at Dell today with more migrations planned to PowerFlex in the near future.

Simplification through software-defined

PowerFlex benefits for Dell Digital include:

- Common, efficient framework for workloads across the company allowing Dell Digital to consolidate storage.
- Massive scalability and performance for all of Dell's databases, with at least 30 percent performance improvement.
- More efficient use of storage capacity, which is now pooled rather than being tied up in multiple dedicated arrays and silos.
- The ability to add capacity in days compared with several weeks previously
- Maximum flexibility in mixing and matching storage nodes, including the capability to scale out to hundreds of nodes in a single cluster.
- Simple software updates, monitoring, reporting, security compliance as well as full-stack lifecycle management via Powerflex Manager software.
- Highly resilient infrastructure that is resistant to a downtime.

Database performance gains

Recent gains from migrating to PowerFlex include:

Moving a web-based data analytics software platform to PowerFlex has yielded approximately a **70%** performance improvement.

After shifting to PowerFlex, a major Dell sales database had a **50%** decrease in time spent by the CPU(s) waiting for outstanding I/O operations to complete, and **33%** more efficient use of CPU resources.

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