

Dell expands backup and recovery with PowerProtect DD series appliances



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James Hall

Product Line Architect -
Core Infrastructure Engineering

Business needs

When Dell Digital, Dell's IT organization, merged two large data center environments to build its private cloud several years ago, it needed to also reconcile two very different sets of data protection policies and implementations. It began by creating a single set of standards around virtual machines (VMs), databases and backup solutions. It also wanted to extend that protection to modern databases and workloads that lacked standardized backup and recovery capabilities. The Backup Engineering team chose the Dell EMC PowerProtect DD series appliances and the accompanying data protection software, Dell EMC Data Protection Suite.

Business results

- Standardized protection policy
- Reduced the risk of data loss
- Reduced data center footprint
- Reduced network overhead by enabling the backup server or application client to send only unique data segments across the network to the system
- Reduced backup and restore times by delivering up to 38% faster backups and up to 45% faster restores at higher compression levels*

Solutions at a glance

- [Dell EMC PowerProtect DD Series Appliances](#)
- [Dell EMC Data Protection Suite](#)

*When compared to previous generation. Based on Dell EMC internal testing. April 2021. Actual results may vary.

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The Backup Engineering team chose the Dell EMC PowerProtect DD series appliances and the accompanying data protection software, Dell EMC Data Protection Suite to protect, manage and recover data at scale across Dell's diverse environments. DD series appliances increases efficiency by providing added self-service capabilities and automation around the database and the VM backups. Dell Digital also deployed Dell EMC NetWorker software to manage and configure backup policies for database backups and Dell EMC Avamar software to manage and configure policies for VM backups.

With DD series appliances and the DD Operating System (DDOS), Dell Digital was able to leverage the agility of its private cloud to provide scalable protection storage for backup, archive, and modern disaster recovery. DD series appliances with DD Boost delivers client-side deduplication and data compression that speeds up backup and reduces network utilization, says James Hall, Product Line Architect - Core Infrastructure Engineering.

Client-side deduplication eliminates like blocks of data from being sent multiple times to the main storage device from the client, explains Dwight Smith, Lead Backup Engineer for Dell Digital Data Protection and Object Team.

DD series appliances also allowed Dell Digital to eliminate its dependency on Fiber-Channel network for most of its backup workloads and migrate to a less expensive Ethernet network.



Protecting more workloads

While DD series appliances support a wide ecosystem of enterprise applications, there were some non-traditional workloads that were not backing up to a traditional data protection storage device. Those workloads were typically using network attached storage (NAS) which had limited governance for backup and security, Jim notes. These included applications hosted on the Tanzu Application Services (TAS) platform, Dell's platform-as-a-service (PAS) environment that hosts apps using a prescriptive, cloud-native framework that is highly standardized, for faster deployments with scalability, ease of automation and resiliency. TAS is particularly suitable for web apps and dashboards.

Users were reporting that the NAS backup process for TAS and other non-traditional workloads was slow and inefficient.

Jim says TAS and data protection teams worked together to use DD BoostFS, an application originally designed to compress data in the deduplication process, to connect TAS workloads to the DD series appliance. The new DD BoostFS solution not only successfully backed up TAS workloads seven times faster than the NAS process, but it also worked on other non-traditional environments as well, he says, including Mongo, Cassandra and Postgres databases.

"We broke through a lot of barriers around the product and worked with the product teams to really expose our ability to back up a lot of these new and novel resources in our environment to DD series appliances," Jim says. "We are able to use the DD series to service more and more customers and get them on a secure solution that we can replicate and provide that peace of mind that the data is protected."



Locking the backup door

Another capability that Dell Digital has deployed is the Retention Lock capability that prevents Dell's DD series environments from security threats from internal or external actors. The lock system prevents someone from deleting data content or causing the early expiration of backed up data either intentionally or unintentionally, Jim says.

Initiated in 2018, 100 percent of Dell Digital's DD series appliances are now Retention Lock enabled.

Overall, Dwight notes that DD series appliances standardize protection policies and reduce the risk of data loss, while adding efficiency with less data footprint and network overhead required. It also requires less backup and recovery time.

"PowerProtect DD series appliances are the center piece of all Dell IT's data protection," he says. "It shines brightly with its stability, reliability and highly configurable options. Its performance in recent restore efforts has raised eyebrows within our leadership and proven that PowerProtect DD series appliances were a wise investment."

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