DELL Technologies

Dell expands backup and recovery with PowerProtect DD

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 newer databases and workloads that lacked standardized backup and recovery capabilities. The Backup Engineering team chose the PowerProtect Data Domain and the accompanying data protection software suite.

Business results

- Standardized protection policy
- Reduced the risk of data loss
- Reduced data center footprint by one-third *
- 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 time by delivering up to 38% faster backups and up to 45% faster restores at higher compression levels**

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James Hall
Product Line Architect -
Core Infrastructure Engineering

Solutions at a glance

- Dell EMC Data Domain Series Appliances

*Based on Dell EMC analysis of field telemetry from PowerProtect DD series appliances v. previous generation, October 2020. Results applied to PowerProtect DD and DP series appliances. Results will vary.
**Based on Dell EMC internal testing with DD Boost protocol on DD9900 and DP8900 with DDOS 7.2 vs. DD9800 and DP8800 with DDOS 7.2, April 2020. Actual results will vary.

Dell expands backup and recovery with PowerProtect DD

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 newer databases and workloads that lacked standardized backup and recovery capabilities.

The Backup Engineering team chose the Dell EMC PowerProtect Data Domain and the accompanying data protection software suite to protect, manage and recover data at scale across Dell's diverse environments. Data Domain increased 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 PowerProtect Data Domain and its deduplication software, Dell Digital was able to leverage the agility of its private cloud to provide scalable protection storage for backup, archive, and modern disaster recovery. It also 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.

PowerProtect Data Domain 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 Data Domain supports 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 Data Domain Boost FS, an application originally designed to compress data in the deduplication process, to connect TAS workloads to Data Domain. The new Boost solution not only successfully backed up TAS workloads 7 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 Data Domain," Jim says. "We are able to use PowerProtect Data Domain 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 PowerProtect DD capability that Dell Digital has deployed is the Retention Lock capability that prevents Dell's Data Domain 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 PowerProtect Data Domains are now retention lock enabled.

Overall, Dwight notes that PowerProtect Data Domain standardizes protection policies and reduces 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 Data Domain is 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 Data Domain was a wise investment."

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