DELLTechnologies

Industry
Technology

VMware footprint
- VMware® Greenplum®
- VMware vSphere® Hypervisor

Dell Technologies Innovates Enterprise Data Analytics with VMware Greenplum

Dell Technologies is on a mission to harness the power of data. With more than 420 petabytes of data across the organization, the company needed to find a way to make it actionable—both to transform life for employees and pioneer new data services for customers. Dell adopted VMware Greenplum, using VMware vSphere to virtualize and make it available on a Dell private cloud via self-service. With VMware, Dell has pioneered a powerful solution to reveal actionable, real-time insights on an unprecedented scale, paving the way for new levels of agility and innovation as yet unseen on the market.

Driving human progress with the power of technology

Founded in 1984, Dell provides devices to consumers and businesses, as well as storage, networking and security, virtualization, analytics and cloud computing systems to companies. The organization also supports large enterprises with end-to-end managed services.

The company aspires to drive progress by developing person-centered technologies and making large troves of data actionable for enterprise customers. Leading by example, Dell is pioneering a new wave of analytics to help businesses be more agile and address specific challenges on an unprecedented scale. The service is being tested and shaped in-house before being launched to customers.

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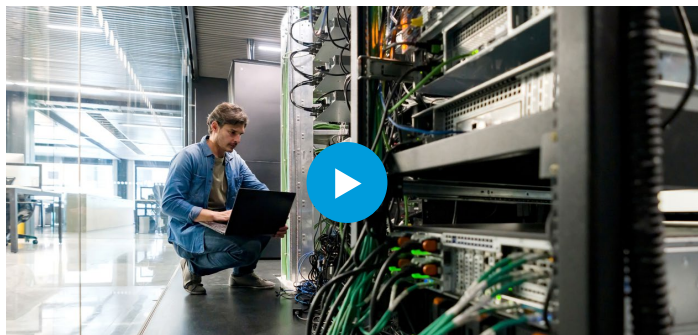
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DELL TECHNOLOGIES & VMWARE: POWERING DATA

"Dell is a very large enterprise with a lot of product lines and solutions. All of that generates a lot of data that we can use to make important decisions and super-charge innovation," says Jim Hall, senior consultant for IT infrastructure, Dell Technologies. "Our vision is to democratize data and make it accessible for everyone—first at Dell and then for our customers."

Simplifying and standardizing data management

Data has the power to transform businesses. It's a goldmine of insights about the past, current and potential future state of a company—but only if it's accurate, comprehensive and interpreted correctly. Dell has accumulated more than 420 petabytes of operational and customer data. But without being able to refine it, multiple factions of the business were losing time on inefficient processes. Calculating sales commission across large teams based in different locations, for example, was time-consuming and arduous.

Meanwhile the marketing team were missing out on opportunities to mine insights from the Dell website—one of the most visited websites in the sector. Understanding browser behavior and combining it with CRM data is crucial for creating hyper-personalized marketing campaigns that get higher engagement and boost conversion rates.

Data also has the potential to transform managed services by creating environments that automatically capture the relevant metrics to monitor IT performance, including big data generated by sensors and smart technologies. Switching from reacting to issues to proactively preventing them in the first place is a clear differentiator to companies looking to protect their own customer experience and business reputation.

"Harnessing the power of data could be a real differentiator. Picture a customer experience where we don't just sell services and hardware, but also proactively identify issues within their environment and resolve them before they cause any disruption," says Hall. "Data will also be transformational for us as a business. We can eliminate complexity from time-consuming processes like calculating sales commission."

Making data actionable at scale involves collating huge numbers of data streams and collecting relevant data points to unlock the best insights. This was down to a team of 1,500 data scientists who were manually collecting, cleaning and visualizing data for business users.

Dell needed to simplify its infrastructure and establish a standard data model to not only make it accessible and insightful but pave the way for artificial intelligence and predictive analytics.

"We had various types of data siloed across 26 data centers. If a business user wanted to query it, they had to raise a help desk ticket and ask the data team to create a database, which was slow," says Hall. "We needed to centralize data into one lake and find a data warehouse capable of processing petabytes of data at speed."

"We've set the wheels in motion to empower lots of different teams to use data to drive efficiency, job satisfaction and innovate faster. VMware Greenplum is now mission critical at Dell."

Jim Hall, Senior Consultant for IT Infrastructure, Dell Technologies

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Powerful data analytics on an unprecedented scale

To collect and process data from across the organization, Dell engaged VMware to implement a massively parallel processing (MPP) data warehouse on top of its data lake. VMware Greenplum supports large-scale analytics and—thanks to the existing VMware products in use at Dell—the IT team already had the in-house skills to manage it and a great partnership with the VMware team. Throughout the migration, Dell worked closely with VMware to optimize the solution.

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"Combining VMware with PowerFlex made extraordinary things happen. Together, they provide unprecedented scalability, resilience and control."

Shashikiran Chidambara, Product Manager for PowerFlex, Dell Technologies

VMware Greenplum addressed the challenge of standardizing the data model and getting data to business users faster. To make it scalable across the enterprise, Dell virtualized the environment with VMware vSphere Hypervisor. Leveraging software-defined infrastructure provided the operational consistency the team needed to make large-scale analytics available on the Dell private cloud.

A self-service portal hosted on the Dell private cloud enables data scientists to pull reports and visualizations. The team also deployed software-defined computing and storage solution, Dell PowerFlex.

"Combining VMware Greenplum with PowerFlex made extraordinary things happen. Together, they provide unprecedented scalability, resilience and empower the IT team with greater control—they can scale compute and storage independently, for example, which promotes continuous optimization as the volume of data handled by Greenplum grows," says Shashikiran Chidambara, product manager for PowerFlex, Dell Technologies.

PowerFlex is a great pairing for VMware Greenplum. It has improved database performance by 70 percent, CPU efficiency by 33 percent and reduced CPU waiting times by 50 percent.

During testing, Dell moved 20 percent of its critical data onto the new architecture. The team ran 182 data queries on Greenplum simultaneously in less than 12 minutes with a read bandwidth of 40GB/second and a write bandwidth of 10GB/second.

"We achieved 250GB/second throughput, demonstrating the high performance and resilience of our new environment. We're now migrating the rest of our data and Greenplum currently handles eight million queries per day with sub-millisecond latency," explains Chidambara.

Leading the way for enterprise-wide data democracy

Dell has broken down the barriers preventing the company from making huge volumes of data actionable—freeing business users to fix the biggest productivity blockers across multiple teams. With data in one place, calculating sales commission is a breeze. Marketing personnel have full visibility of the customer journey and can work alongside sales to optimize campaigns and get the right message to the right people at the right time. And Dell managed services combined with big data insights provide more protection against outages that could cause serious disruption for business customers.

These benefits are just the tip of the iceberg. The company can now tap into predictive analytics and AI by connecting more tools to one of the fastest enterprise scale databases in the world—VMware Greenplum.

The outstanding processing power of VMware Greenplum has empowered Dell with extraordinarily fast analytics while simplifying and standardizing its environment for easier management. Virtualizing the solution brought the additional benefits of reducing software maintenance, turbocharging performance and the ability to scale across entire enterprises without becoming slow or difficult to use.

When the data migration is complete, Dell will have 420 petabytes of actionable data to optimize every area of its business.

"We have one of the highest performing Greenplum databases on the planet and a very happy team of data scientists and engineers," says Hall. "Data democracy is all about making insights available to employees across the business. We've set the wheels in motion to empower lots of different teams to use data to drive efficiency and job satisfaction and innovate faster. The solution is now mission critical at Dell."

Accelerating the data revolution

Looking to the future, Dell is preparing to launch a new service for customers combining VMware Greenplum, VMware vSphere and Dell PowerFlex as a package. This will enable more enterprises to start using their data to eliminate their specific pain points and boost efficiency, thus generating more revenue for Dell and protecting its reputation as a leading innovator.