DELL Technologies

Hand Out

Top Reasons to Choose Dell PowerScale for Oil and Gas

10

Dell PowerScale offers a scalable, easy-to-manage storage solution tailored for the oil and gas industry, enabling efficient management of massive unstructured data like seismic archives without additional storage administrators. It reduces operational costs, supports multi-petabyte capacities, integrates with Dell ECS for secure archiving and enhances business agility with advanced analytics tools. PowerScale accelerates AI-driven analytics, ensures high availability and meets stringent IT governance requirements with robust security features. Its unified storage pool eliminates data silos, supporting a wide range of petrotechnical applications and improving data-driven decision-making.

1 | Simplify IT Management for Seismic Archives and Home Directories

Dell PowerScale is a powerful yet simple scale-out NAS solution for oil and gas customers that want to invest in managing their data, not their storage. With a single volume, single file system architecture, PowerScale is simple to install, manage and scale at virtually any size. With PowerScale, you don't need to add storage administrators as your storage environment grows. One person can now manage petabytes of data, which minimizes operating expenses and allows staff to focus on managing petrotechnical applications and data—not storage.

2 | Deliver PB Scale Capacity for Seismic Archives and Simulations

PowerScale scale-out NAS enables you to scale capacity based on the specific requirements of your business. PowerScale allows you to grow to multi-petabyte scale. When needed, you can easily increase capacity by adding a node in about a minute or less. With its ability to support 16 TB QLC drives, PowerScale enables organizations to more seamlessly process and manage the large seismic datasets. In addition, with Dell ECS, your cluster can grow into exabyte-scale capacity across several oil fields. ECS serves as a secure and affordable on-prem cloud for archival and long-term retention purposes. Using ECS as a cost-effective archive tier, oil and gas companies can preserve data retained for compliance, legal or value-creation purposes.

PowerScale delivers up to 80% storage utilization. Storage efficiency can be further increased with PowerScale's SmartDedupe data deduplication, inline compression and a data reduction guarantee of 2:1 to further reduce physical storage required. The simplified management of PowerScale combined with our unmatched efficiency helps you reduce operational and capital costs.

3 | Improve business agility and sustainability

Dell InsightIQ software provides powerful performance monitoring and reporting tools to help you maximize the performance of your PowerScale system. InsightIQ includes advanced analytics to optimize applications, correlate cluster events and accurately forecast future storage needs.

Dell APEX AIOps Observability (formerly CloudIQ is the AIOps application that proactively monitors and provides recommendations and predictive analytics for your Dell server, storage, data protection, network, CI, HCI and APEX multicloud products in a common user interface. AIOps Observability provides insights for power, energy consumption and carbon footprint forecasting for PowerScale systems. You can now track the following KPIs: total carbon emissions for this year (YTD); energy consumption trends (monthly and YTD); 24-hour power consumption; 24-hour load on average; and historical and forecast data for energy consumption and carbon footprint. Carbon footprint (CO2eq) is computed leveraging IEA (International Energy Agency) emission factors by default. You can override the application's default IEA emission factor and default PUE (Power Usage Effectiveness) ratio with your customized data.

10 Top Reasons to Choose Dell PowerScale for Oil and Gas

4 | Accelerate Cloud Journey

Oil and gas organizations want to take advantage of efficiency and flexibility of cloud to fuel their business innovation and growth. Dell Technologies has partnered with leading cloud providers to provide a range of cloud storage services that offer performance at scale, efficiency and simplicity of management to enable companies to deploy the most suitable offering with the economics of the cloud. Powered by the unmatched performance, reliability and scalability of PowerScale, oil and gas organizations can efficiently run workloads while reducing risk and maintaining complete control of their data.

With our ability to support S3 natively, moving data between on-prem and cloud is now efficient and transparent. The oil and gas industry is making major investments in the Open Subsurface Data Universe (OSDU) forum, an industry consortium to build a cloud native data platform for all upstream data, applications and business workflows. Dell Technologies strives to be the exclusive provider of multi-cloud solution for OSDU. With its variety of multi-cloud deployment models suitable for a huge range of organizations, Dell Technologies is well positioned to help organizations adopt cloud technologies.

5 | Accelerate Analytics for Petrochemical Workloads

PowerScale offers massive AI performance with the ultimate density. It accelerates all phases of the AI pipeline, from model training to inferencing and fine-tuning. Boasting up to 24 NVMe SSD drives per node and 300 PBs of storage per cluster, it ensures GPU utilization for large-scale model training and drives faster time to AI insights with up to 127% improved throughput. PowerScale is no stranger to AI-optimized infrastructure, being one of the first storage vendors to offer GPUDirect support with NVIDIA, low latency storage access with NFSoRDMA, multi-tenant capabilities, simultaneous multiprotocol support, and 6x9s availability and resiliency to ensure uninterrupted uptime.

Building on that foundation and leveraging continuous software and hardware innovation, our next-generation all-flash systems form a key component of Dell's AI-ready data platform offering multicloud agility with our Dell APEX File Storage for public cloud portfolio, federal-grade security features to safeguard the AI process from attacks such as data poisoning and model inversion, and exceptional efficiency with the world's most efficient scale-out NAS to manage the AI data growth while controlling storage costs. PowerScale is the first ethernet-based NVIDIA DGX SuperPOD certified storage platform and is enabling seamless AI Adoption for enterprise customers everywhere.

6 | Deploy Secure and Highly Available Simulations and Optimizations

PowerScale is highly resilient and can withstand the loss of up to four nodes or drive failures simultaneously and maintain complete availability of your data. Non-disruptive upgrades and operations minimize the need to schedule downtime for your PowerScale clusters. For fast and efficient data backup, you can schedule snapshots as frequently as needed to meet specific recovery-point objectives. For disaster recovery protection, PowerScale SyncIQ software provides efficient data replication to local or remote sites.

7 | Reduce Risk and Increase IT Governance

To help you address your security and compliance needs for your petrotechnical data, PowerScale offers a broad range of security options including PowerScale SmartLock software for write once, read many (WORM) protection to prevent accidental or malicious alteration or deletion of data; file system auditing to track which users are accessing specific files; and data at rest encryption (DARE) with self-encrypting drives (SEDs) to protect against drive theft or loss. PowerScale also includes role-based access control (RBAC) capabilities to allow you to create a strict separation between storage administration and users and their file system access. With PowerScale, you can also create access zones to provide secure, isolated storage pools for specific departments within your organization.

8 | Eliminate Data Silos for Interpretation and Modeling

The Exploration and Production data lake provides a single pool of storage to eliminate the data silos in your environment. The multi-protocol access methods that surround the data lake and the enterprise grade features of data protection, data management, security, and performance management make it easy for you to manage all your unstructured data.

10 Top Reasons to Choose Dell PowerScale for Oil and Gas

9 | Maintain Compatibility with Petrotechnical Workloads

PowerScale runs seamlessly with leading petrotechnical workloads like Schlumberger and Landmark. PowerScale is the ideal platform for reservoir modelling, production optimization, reservoir simulation, interpretation and modelling and seismic processing workloads. In addition, many customers deploy seismic archives, home directories, file shares, security analytics and big data workloads on PowerScale.

10 | Drive Reservoir Modeling and Seismic Processing Workloads

PowerScale includes integrated support for a wide range of industry-standard protocols including NFS, SMB, HTTP, FTP and Hadoop HDFS. These capabilities allow you to provide an efficient and flexible shared petrotechnical storage infrastructure – a scale-out data lake – that can support a wide applications and workloads. With it, you can get more value from your enterprise data assets and enable better information sharing across your organization. You can also leverage native HDFS support for Hadoop analytics to gain new insight and unlock new opportunities for your business while supporting data-driven decision making.

Learn more about Dell PowerScale solutions

Contact a Dell Technologies expert

View more resources

Join the conversation with #DellStorage_HCI

DELL Technologies