DellTechnologies

Dell PowerScale for Google Cloud

Google native file service powered by PowerScale OneFS and managed by Dell Technologies

Benefits

- Fully integrated native Google Cloud service operated by Dell Services and backed by enterprise SLAs

- Predictable pricing with performance targets based on four performance-optimized tiers including a small all-flash tier with lower entry points and shorter terms

- Scale-out capacity up to 33PiB effective in a single namespace[1], throughput up to 18.6GB/s per 100TiB with sub-ms latency[2]

- Ordered and managed through Google Cloud console

- Purchased directly on Google Marketplace

- Integrated billing and support from Google

- Easily combined with the Google Cloud compute and analytics services

- Enterprise-class data features include multi-protocol file access, native replication and snapshots

Business Challenges

As unstructured data grows exponentially, organizations are looking to migrate file-based workloads to the cloud to increase business agility, reduce cost and simplify management. But while file data often accounts for at least half of organization's on-premises data, very little file data is stored in the cloud. There are legacy challenges that still need to be addressed to enable organizations to realize a hybrid cloud approach for their file data and accelerate this growth.

To help customers with their journey to public cloud, Dell Technologies has partnered with Google to bring to market PowerScale for Google Cloud, a fully integrated native cloud file service for Google Cloud users powered by PowerScale, the industry's #1 scale-out NAS storage system.

Solution Overview

Google Cloud provides a broad range of compute and analytics services for on-demand, cost-effective processing and analysis of high-throughput, filed-based workloads. Dell Technologies brings the Dell PowerScale family of scale-out NAS solutions, which includes PowerScale nodes along with the OneFS operating system deployed in thousands of on-premises locations, to the cloud. Together, PowerScale for Google Cloud enables enterprises to run the most demanding file-based workloads which require extreme performance and throughput, including Artificial Intelligence and Machine Learning, Life Sciences Genome Analysis, Media and Entertainment and Big Data Analytics, in the cloud, taking advantage of flexible cloud consumption models and cloud economics.

Dell Technologies provides a range of choices of private, multi-cloud and native cloud storage services designed for unstructured data. These services extend the familiar capabilities of PowerScale such as performance at scale, operational efficiency, simplicity of management and enterprise-class data services to the public cloud.

Incredible Power

PowerScale for Google Cloud brings the game-changing performance for file data in the public cloud. Based on the third-party performance validation, PowerScale for Google Cloud can deliver:

- Up to 46x higher maximum read throughput[3]
- Up to 96x higher maximum write throughput[3]
- Up to 500x higher maximum file system capacity[3]
- Scale-out capacity up to 33PiB effective in a single namespace
- Throughput up to 18.6GB/s per 100TiB with sub-ms latency

Organizations can now host high-performance workloads that traditionally have only run on-premises in Google Cloud where they will have their familiar OneFS features while taking advantage of Google Cloud's elastic compute, GPU instances and analytics services. PowerScale for Google Cloud provides massive scale-out capacity from 25TiB to 33PiB effective in a single namespace, performance at scale up to 18.6GB/s per 100TiB of throughput (and up to 100s of GB/s of aggregate throughput), and sub-ms latency access to Google Cloud. Plus, customers can use enterprise-class data features such as high availability, multi-protocol file access and built-in security, native replication and data protection with snapshots.

With PowerScale for Google Cloud customers can realize the advantage of hybrid cloud architectures, using native replication between the on-premises storage and Google Cloud, allowing them to easily move data between environments for use with Google's vast services and tools. File data can now be replicated rapidly between these environments and easily burst application data into the cloud without risk or having to make changes to applications and eliminating difficult and time-consuming data migration.

Consistent Operations

User Experience

PowerScale for Google Cloud brings the native file service experience of OneFS to Google Cloud customers without a requirement to re-platform their applications to object. The consistency in user experience is a critical enabler for the data scientists and researchers of organizations to run their analysis workflows both on-prem and in the cloud with ease, not requiring them to learn new tools and thereby boosting their productivity.

Simplified Operations

PowerScale for Google Cloud is an easy-to-use service with annual subscriptions and flat-rate, predictable pricing. Customers order it from the Google Cloud Marketplace, and once provisioned they can configure and manage their OneFS clusters directly from the Google Cloud console. Customers receive a single monthly bill and support from Google. Cloud consumption model provides on-demand dedicated capacity, choice of annual subscriptions and optimized performance tiers to service the entire range of needs - from the basic file shares up to the most demanding workload requirements.

The storage tiers are tailored to a variety of use cases with Tier 1 optimized for extreme performance and throughput for commercial HPC, Tier 2 for high performance required by predictive analytics, Tier 3 for large file formats of media workloads and Tier 4 for maintaining access to files for fast backup and recovery. The powerful Tier 1 Agile expands the current Tier 1 with all-flash configurations designed for agility and extreme performance. It offers organizations a lower entry point into the service with reduced capacities, smaller increments, and shorter commitment terms, making it easy to try out new features or test the offer.

PowerScale for Google Cloud is managed and operated by Dell Technologies experts who provide complete lifecycle management of the environment. It is monitored and maintained 24x7 to provide a complete hands-off operation which is backed by enterprise SLAs and availability.

Accelerated Innovation

PowerScale for Google Cloud enables organizations to take advantage of elastic compute and rich analytics services of Google Cloud to run data-intensive workloads in the cloud that traditionally could only be done on-prem with the game changing performance and scale of OneFS, such as:

AI and Machine Learning

- Make the most of Google Cloud's industry leading AI/ML capabilities
- Run machine learning models against high resolution data for greater model accuracy with access up to 33PiB effective per namespace
- Enable in-place analytics without time consuming data movement and staging operations
- Maximize GPU utilization while reducing cost even at massive scale

Life Sciences Genome Analysis

- Accelerate research and optimize costs for any project size with on-demand compute and storage resources
- Scale performance linearly with increasing operations' demands to support massive scale genome analysis
- Enable hybrid cloud pipeline architectures by automatically replicating data from Isilon on-prem connected to sequencers to PowerScale for Google Cloud for analysis and processing

Media and Entertainment

- High resolution media editing experience comparable to on-prem
- Deliver storage performance at scale for large scale rendering
- Serve content with the geographical reach of Google Cloud

Big Data Analytics

- PowerScale storage is the first scale-out NAS platform that natively integrates with the Hadoop Distributed File System (HDFS) layer. By treating HDFS as an over the wire protocol, organizations can deploy a Big Data solution that combines the industry-standard Hadoop distribution of your choice with OneFS to provide a powerful, highly efficient and flexible data storage and in-place analytics ecosystem.

[1]Based on Dell Technologies analysis, June 2021. CLM-000957

[2]Based on Dell Technologies analysis, June 2021. CLM-000968

[3]Based on an April 2021 ESG Report commissioned by Dell, "Performance Testing of Dell PowerScale for Google Cloud", estimate based on comparison of publicly available specifications and performance benchmarking results for a competing vendor's NAS solution and Dell PowerScale both on Google Cloud. Actual results may vary. See full report here.

Learn more about PowerScale for Google Cloud and Cloud Storage Services for Unstructured data

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