

Top Reasons

Why Organizations Choose Dell EMC PowerScale for Google Cloud for Semiconductor Design

Dell EMC PowerScale for Google Cloud delivers the massive scalability and extreme performance and throughput of on-prem compute and storage with a native cloud experience. Fully integrated into Google billing and cloud portal, this turnkey managed service combines the performance, efficiency, and security of PowerScale with the flexibility and cost economics of Google Cloud. Enterprises can deploy a dedicated, secure Dell EMC PowerScale infrastructure with sub-millisecond latency network access to Google Cloud on-demand compute and analytics services for their semiconductor design workloads — accelerating time-to-market by having persistent design and scratch data on PowerScale for Google Cloud but without sacrificing on-prem like performance.

1 Cloud-native

PowerScale for Google Cloud features PowerScale, an enterprise-grade and scale-out network-attached storage (NAS) solution, located within Google Cloud data centers, with high-speed networking connecting them to native Google compute. PowerScale for Google Cloud is a fully managed service that is integrated into Google's Cloud portal, allowing self-service provisioning with direct billing from Google. Enterprises can deploy dedicated, secure PowerScale infrastructure with 24x7 proactive monitoring, maintenance, upgrades, and hardware lifecycle management handled for them - all without having to make any changes to their applications.

2 No-compromise Performance

Tracking with Moore's Law, storage footprints for semiconductor organizations typically double every two years. That's no problem for our customers as PowerScale for Google Cloud brings game-changing performance at scale - with up to 97MBps/TiB of throughput (and up to 1000 TiB's of aggregate throughput), and sub-millisecond latency access to Google Cloud. Based on the third-party performance validation, PowerScale for Google Cloud can deliver up to 46x higher maximum read throughput and up to 96x higher maximum write throughput* vs a competing vendor's NAS solution.

* Based on April 2021 ESG Report commissioned by Dell Technologies, "Performance testing of Dell EMC 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 EMC PowerScale both on Google Cloud. Actual results may vary. See [full report](#) here

3 Massive Scalability

PowerScale's single file system, single volume architecture delivers an ever-expanding namespace for the consolidation of a semiconductor organization's file shares, archiving, and scratch storage. And that's true whether on-prem or on Google Cloud. With scale-out capacity up to 50PiB in a single namespace on Google Cloud, PowerScale delivers up to 500x higher file system capacity* vs a competing vendor's NAS solution.

4 Enhanced Security

Security has always been a concern when considering public cloud, and that's especially true for semiconductor organizations. Unlike other cloud-native storage solutions, PowerScale for Google Cloud offers dedicated, single-tenant PowerScale clusters, this enhancement eliminates a common security weakness, as well as data compliance concerns that are common with multi-tenant public cloud storage offerings.

5 Predictability and Consistency

Predictability is today's biggest infrastructure challenge for semiconductor organizations. When on-prem infrastructure is architected poorly, inconsistent behavior results. While unpredictable raw performance is the most obvious symptom, inconsistencies can manifest itself in many other forms, including inaccessible islands of storage, performance hotspots (bottlenecks), limits on individual volume (or entire cluster) capacity, and unexpected —all leading to increasing management overhead and ultimately, unpredictable project schedules. While migrating to Public Cloud can help alleviate management overhead, it often does so at the cost of predictability. PowerScale's scale-out architecture, when combined with single tenancy of OneFS, brings the native file service experience of OneFS to Google Cloud customers without a requirement to re-platform their applications to object, ensuring consistency in user experience. PowerScale for Google Cloud is an easy-to-use service with annual subscriptions and flat-rate, predictable pricing. Customers can 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.

6 Cost-effective

A single PowerScale cluster can be utilized simultaneously for a mix of workloads, including design directory services, file shares, and transient scratch data for your massively parallel, compute-intensive semiconductor design batch jobs. Additional storage efficiency comes from available inline data compression. Depending on your specific dataset, inline data compression can deliver up to a 3:1 reduction in storage infrastructure requirements – reducing your total spend on Public Cloud. Add to the above 2-10x lower \$/GB/month storage fees and you have a winning combination that delivers great ROI.

Discover more about our Infrastructure Solutions for Semiconductor Design



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