
DELL Technologies
PowerScale Solutions
for Multi-cloud
LEARN MORE

Contents

[click any title to navigate]

1

Why Cloud File Storage

File data accounts for nearly 50% or organizations' on-premises data footprint. Only 10% of cloud data is file.

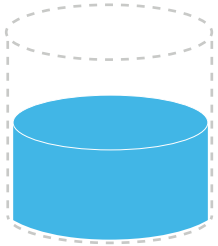
Despite this, file data has been underrepresented in the public cloud due to several challenges:

- Cost of availability and access
- Scale and performance limitations
- Vendor cloud lock-in, data gravity and latency

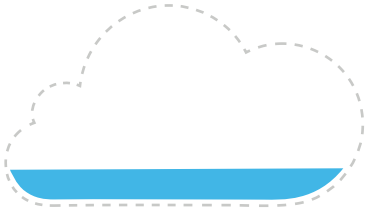
To accelerate hybrid cloud adoption for file data, organizations need:

- Interoperability with on-prem systems
- Scalable performance and capacity
- Enterprise-class data storage features

File data is growing, but is underrepresented in the cloud



~50%
of organizations' on-prem data*



~10%
of data in the cloud is file**

Source: ESG, Performance Testing of Dell Technologies Cloud PowerScale for Google Cloud, June 2020
**Source: IDC, "4Q19 Storage Software and Cloud Services Qview Update Presentation," March 2020*

2

Why Cloud Storage from Dell Technologies

Prior to Dell Technologies entering the market, there was no easy way for organizations to bring their high-performance file workloads to the cloud because of throughput bottlenecks, capacity limitations and missing storage features.

Dell Technologies believes that cloud strategy requires a data first approach, NOT a cloud first strategy.

Avoid future cloud repatriation by storing your most valuable asset

- in the right place
- at the right time
- with the right Service Level Objective (SLO).

What you get from Dell Technologies	
Leader in Gartner Magic Quadrant for distributed file systems	
A complete portfolio of cloud storage solutions for file and block data for multi-cloud	
Cloud Data Protection for multi-cloud	Financing
Expertise in vertical markets which run complex, technical file-based workloads such as M&E, Life Sciences, AI and ML, EDA, Oil Exploration and many more	

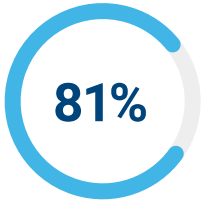
For the 5th year in a row, Gartner named Dell Technologies a Leader in its Gartner Magic Quadrant for Distributed File Systems and Object Storage.

3

The Future is Multi-cloud

Storage is one of the most critical elements of cloud adoption.

Global organizations are embracing a multi-cloud strategy



of respondents reported they are using more than one public cloud provider[1]

of G1000 organizations will have a **multi-cloud** strategy by 2024[2]

Public clouds have many benefits

- flexibility of compute options
- variety of native cloud services

165+ services

251+ services

101+ services

But there are still challenges

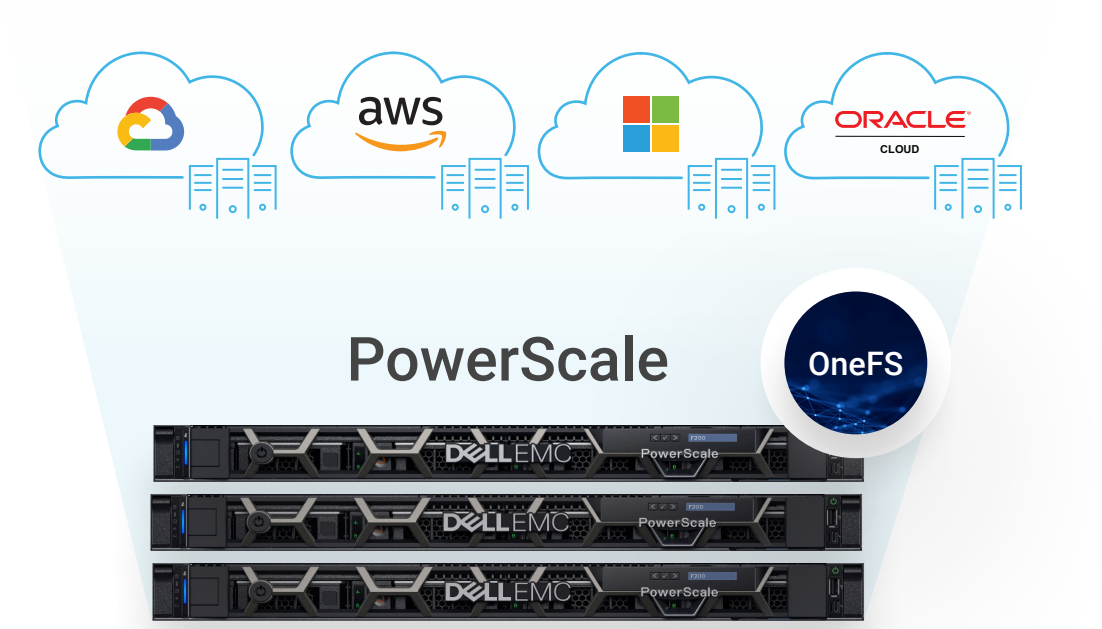
Challenges	Dell Technologies Can Help Address
Cloud vendor lock-in	Easy access to your data in multiple clouds
Unpredictable economics	Predictable, guaranteed pricing based on performance tiers
Inconsistent performance	Optimized, predictable performance
Low availability	Reduced risk with access to multiple clouds
Skill gaps	Familiar hardware and software

[1]*Gartner, Lessons Learned from the most common mistakes made by cloud infrastructure adopters, May 2020*
[2]*IDC FutureScape: Worldwide Cloud 2019 Predictions*

4

PowerScale Solutions for Multi-cloud

The freedom to choose the most suitable cloud or multiple clouds to drive the best business outcome.



Combining the massive scalability, performance and data services that you know on-premises with the economics and simplicity of public cloud.

- Solution choices for each public cloud
- Directly connected to the cloud of choice or natively integrated
- Familiar on-prem storage with native replication to the cloud service
- Predictable, guaranteed pricing based on performance tiers
- Optimized, predictable performance
- End-to-end managed service

Multi-cloud Use Cases

Businesses are innovating by using the best cloud services in these segments.

Life Sciences

- Accelerate time-to-insight for clinical genomic sequencing, drug design, and cancer research with multi-cloud AI and analytics solutions.

Healthcare

- Use one cloud for DR, another for processing (PACS) data, and a third for backups — all while improving diagnostic speed for service providers.

Big Data Analytics

- Leverage native HDFS on PowerScale with best in class performance.
- Use efficient storage for in-place analytics in public cloud.

Energy

- Use AI tools to analyze PBs of information contained in satellite images and seismic surveys used to improve the effectiveness of drilling operations.

Automotive

- Leverage global multi-cloud sensor and metadata management for ADAS.
- Use high-speed, low latency connection to the public cloud for AI/ML.

Media and Entertainment

- Leverage the best in breed tools from the public cloud of choice to collaborate throughout the production cycle on media.

Multi-cloud Advantages

The multi-cloud strategy offers businesses the ability to switch between different public clouds in order to:

Defy Data Gravity

- Unlock innovation when sharing a common data set between clouds.
- Eliminate data gravity and avoid storing multiple, out-of-sync copies of the data.

Avoid Vendor Lock-in

- Benefit from the unique native cloud services from different providers.
- Reconsider investing in a single cloud which may limit future opportunities.
- Watch out for growing egress costs.

Mitigate Risk

- Lower your exposure to cyberthreats that can overwhelm a single cloud.
- Distribute your cloud strategy across multiple providers to reduce exposure to a single point of failure.

Optimize Performance

- Choose the right cost/performance ratio of a cloud service for each workload.
- Get the best price by combining cloud services; for example, Azure's low-priority VMs, AWS spot instances, and Google Cloud's preemptible VMs.

Choose What Service You Need from Each Public Cloud

Microsoft Azure

CHOOSE FROM 165+ SERVICES

EXAMPLES:
Azure Machine Learning
Azure Kubernetes
Linux Virtual Machines
Security Center
Azure Firewall

aws

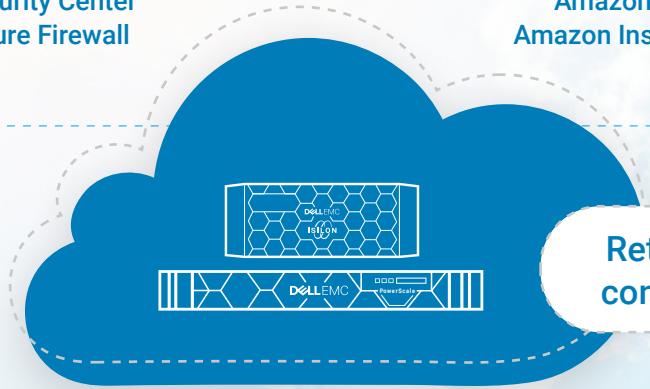
CHOOSE FROM 252+ SERVICES

EXAMPLES:
Amazon EC2
Amazon SageMaker
Amazon DynamoDB
Amazon S3
Amazon Inspector

Google Cloud

CHOOSE FROM 102+ SERVICES

EXAMPLES:
CloudSQL
Cloud Load Balancing
BigQuery
AutoML
AI Platform



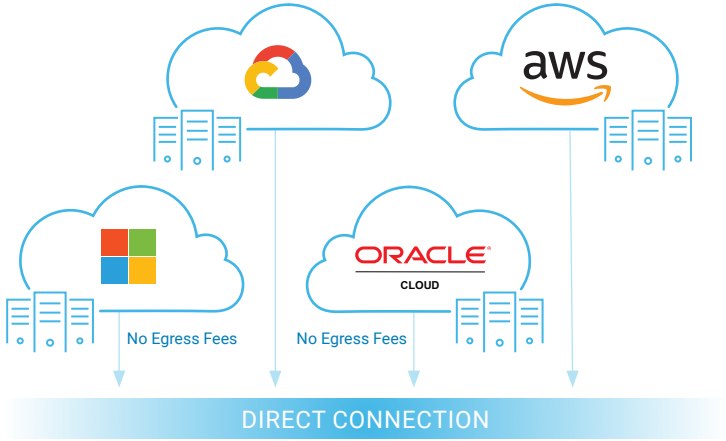
Retain control while maintaining a single, consistent data repository on PowerScale

5 PowerScale Cloud Integrations

Multi-Cloud Data Services for Dell EMC PowerScale

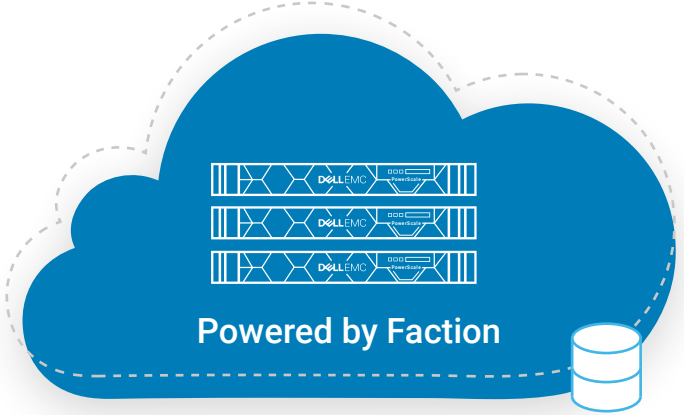
Extend market leading file storage to public clouds of choice.

- Easily switch or add clouds without moving data
- Reduce risks and costs with no conversion or refactoring of workloads
- Accelerate time to innovation with rapid deployment and capacity on demand
- Simple, low cost set up for DevOps or analytics environment in the cloud
- Address regulatory and compliance needs



On-Premises

Native Replication



Check with your Dell sales contact for the complete list of locations

AWS Solution

For data intensive workloads.

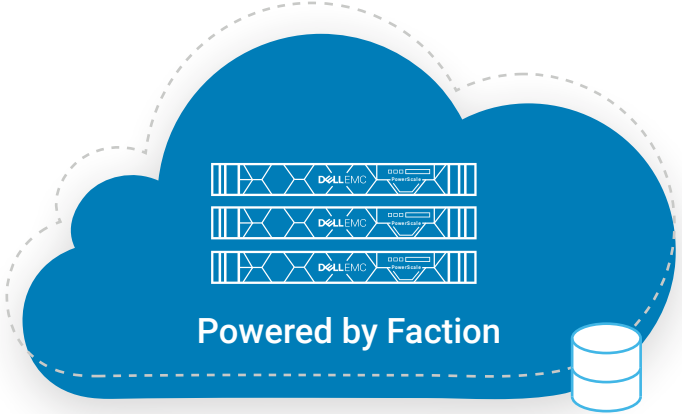
- Efficiently run data-intensive workloads in AWS
- Cost effectively take advantage of AWS's rich application services

On-Premises

Native Replication

AWS Direct Connect

DIRECT CONNECTION

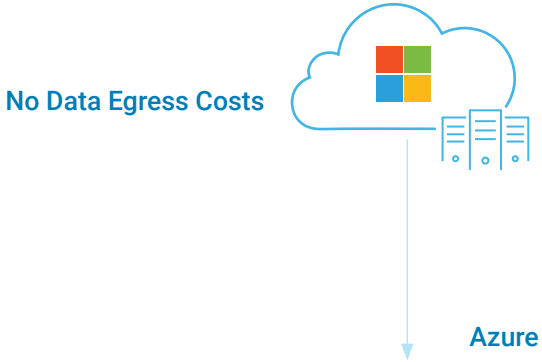


Powered by Faction

Microsoft Azure Solution

For data intensive workloads.

- Efficiently run data-intensive workloads in Azure
- As low as 1.2ms latency connection to the cloud with ExpressRoute Local
- No data egress costs
- Cost effectively take advantage of Azure's rich application services



5

Predictable Pricing and Guaranteed Performance

Storage tiers tailored to a variety of use cases.

PowerScale

Performance

Tier 1

Extreme performance and throughput for HPC **automotive design, genomic sequencing, EDA**

Tier 2

High performance for **predictive analytics**

Tier 3

Performance for **media and other large file formats**

Tier 4

Performance for maintaining access to files for fast **disaster recovery**

See Multi-Cloud Data Services for PowerScale in Action

Healthcare Organization, Sentara, Embraces a Hybrid Multi-cloud Environment with a Range of Dell Technologies Storage Cloud Solutions.

CUSTOMER REQUIREMENTS
Modernize PACS imaging and EPIC Electronic Medical Records (EMR) database tier
Migrate and consolidate all PACS data in the cloud with the lowest latency
Increase operational agility by avoiding cloud vendor lock-in
SOLUTION
PowerScale for Multi-cloud to host PACS data; PowerMax to support EPIC and Data Protection for Multi-cloud
Azure native cloud services including compute and machine learning
EXPECTED RESULTS
ROI under seven months and savings over three years
Centralized, fast access to PACS data and EPIC EMR database to facilitate better patient experience
Analyze trends, gain insight into patient data with Azure analytics services

SENTARA®

*"Dell Technologies solutions for Multi-cloud provide us with the **unmatched scalability, performance and efficiency of PowerScale OneFS** to successfully meet our compute and storage needs today and in the future. The solution was easy to deploy, is simple to manage and **migration was speedy and efficient.**"*

– Matt Douglas, Chief Enterprise Architect
Sentara Healthcare

6

PowerScale for Google Cloud

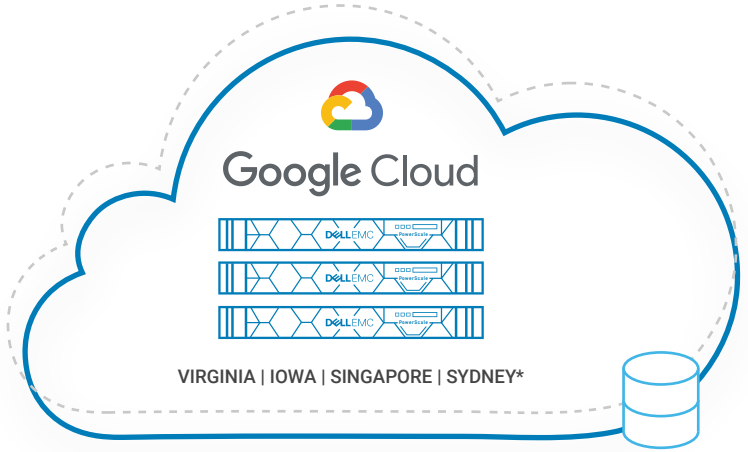
Fully integrated native cloud experience.

- An integrated native Google Cloud service operated by Dell Services and backed by enterprise SLAs
- Google Marketplace integrated billing and support
- Easily combined with the Google Cloud compute and analytics services
- Guaranteed and predictable pricing based on four performance-optimized tiers
- A fully managed cloud service

On-Premises

Realize hybrid cloud with seamless data movement between on-prem and public cloud. Replicate data without risk with native replication.

Native Replication

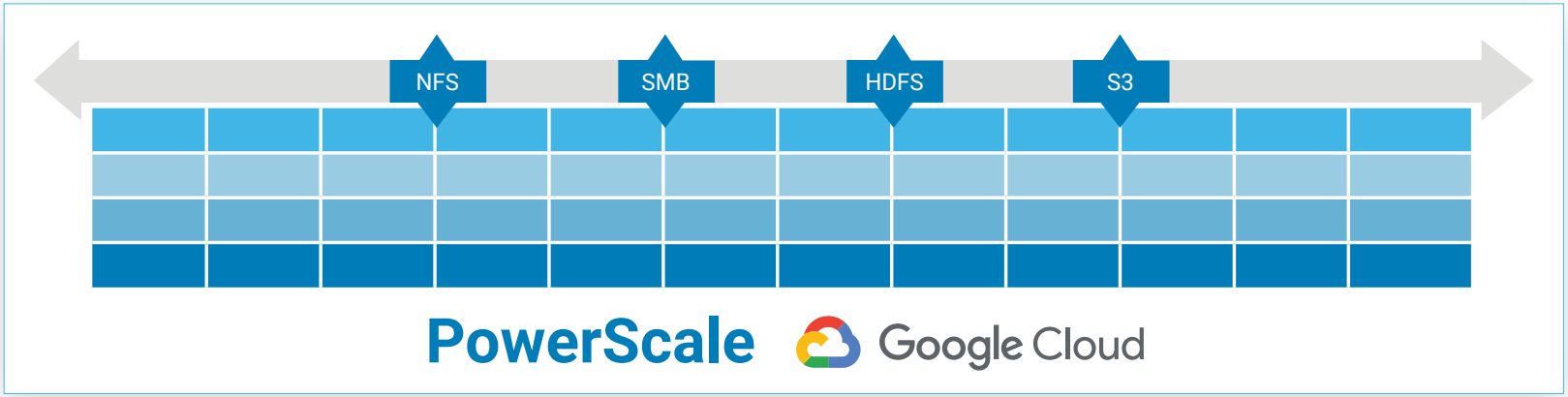


Combining the performance and scale of the Dell EMC PowerScale with the economics and simplicity of public cloud.

**Check with your Dell sales contact for the complete list of locations*

Performance for the Most Demanding File Workloads

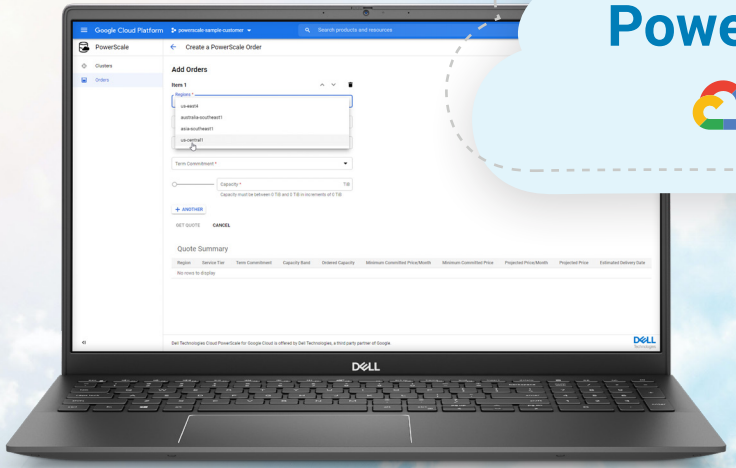
scale-out capacity up to	scale-out performance up to	multi-protocol • native replication • snapshots
50PB	**97MB/s per TiB**	**Enterprise-class data features**
in a single namespace	throughput with sub-millisecond latency	



Native Cloud Experience

Completely integrated into Google Cloud.

- Provisioning, configuration and management of OneFS clusters in Google Cloud Console
- Single bill and support from Google
- Predictable pricing and guaranteed performance
- Complete lifecycle management from Dell Technologies experts



PowerScale

Google Cloud

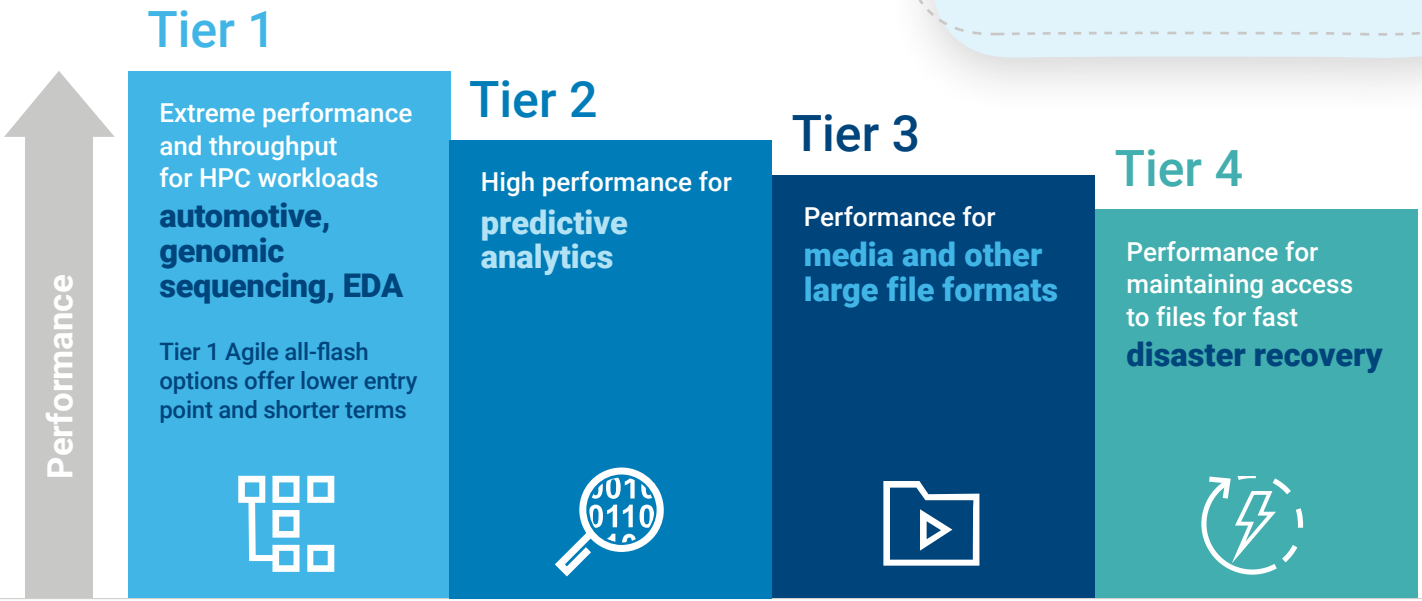
Backed by Enterprise SLAs

Predictable Pricing and Guaranteed Performance

Storage tiers tailored to a variety of use cases.

PowerScale

Google Cloud



See PowerScale for Google Cloud in Action

An e-commerce company with a digital platform chooses Google Cloud

CUSTOMER REQUIREMENTS

- High-performance file service in the cloud with flexible management and automated data replication
- Move media data, video rendering process and long-term archiving from on prem to the cloud
- Gain access to cloud native tools to accelerate business and reduce costs

EXPECTED RESULTS

- Achieve cost savings from consolidating data centers
- Enable a true hybrid cloud model with native replication from private cloud to Google Cloud
- Expand the service to additional PowerScale for Google Cloud sites over time

A healthcare insurance agency uses Google Cloud to shift to a consumer-centric business model

CUSTOMER REQUIREMENTS

- Move all IT operations including the production environment and DR to the cloud
- Lower burden on IT with a managed cloud service
- Expand to additional locations across the US

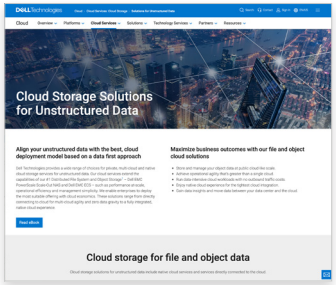
EXPECTED RESULTS

- Move all customer data from upcoming open enrollment for healthcare plans to Google Cloud
- Drive a better customer experience and higher user satisfaction with all data in a single location
- Analyze trends, gain insight into patient data with Google Cloud compute and analytics native services

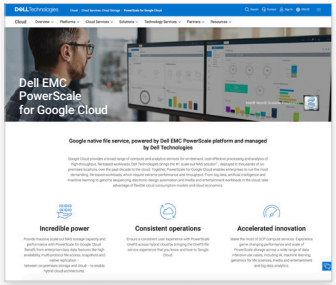
7

For More Information

[click any image or caption to navigate]



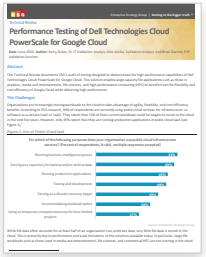
Cloud Storage Solutions for Unstructured Data



Videos, White Papers, Demos and Solutions Briefs

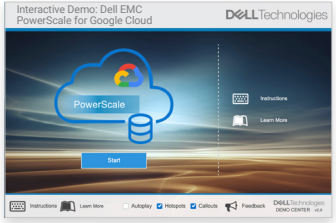
ESG Technical Validation:

PowerScale for Azure

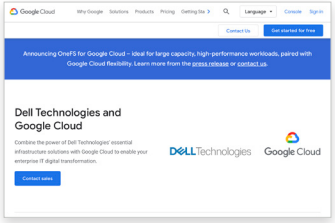


PowerScale for Google Cloud

Interactive Demo: Multi-Cloud Data Services for Dell EMC Storage



Interactive Demo: Dell EMC PowerScale for Google Cloud



Google Cloud Pages

Data Sheet