E-BOOK TO MULTI-CLOUD ADOPTION

Multi-Cloud Data Services

Overcome Data Gravity and Get the Most from Your Data in the Cloud

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Introduction

MULTI-CLOUD ADOPTION AND INNOVATION CAN BE HINDERED BY DATA GRAVITY

What is data gravity? Data gravity can prevent your organization from being nimble, both in adapting your IT to the changing landscape and from competing in the market. As the amount of data generated by applications continues to grow, it becomes difficult to get the data where it needs to be. Soon the data that you depend on and need to access very fast, becomes impossible to move or migrate, making it harder to extract value from it.

How fast you locate your data and cloud workloads and how you access them matters. The increasing latency of accessing data and running demanding technical workloads on-premises from a cloud-based application is detrimental to performance.

Result? Data gravity can lock you into your datacenter or a single cloud, preventing you from accessing and profiting from other available public clouds and their differentiated native services. As a result, costs generated by egress fees, or data sprawl, can compound the impact on your bottom line.

This "drain" created by data gravity can negatively impact projects such as:

Digital Transformation

Containerized Environments

Microservices

Edge Computing

INTRODUCTION   DISCOVER THE BENEFITS   IMPLEMENTING MULTI-CLOUD STRATEGY   MULTI-CLOUD DATA SERVICES   RESOURCES

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81%

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

DRAWBACKS OF CURRENT CLOUD APPROACHES

- **Performance constraints** caused by physical distance of on-prem may be too high from public clouds, resulting in deteriorating customer experience.

- A single cloud **data lock in** can limit innovation and performance/cost benefits of using multiple clouds, increasing risk of a single point of failure in case of cyberattacks.

- Do-It-Yourself approaches to multi-cloud often require you to duplicate the same data in each cloud, creating **management complexity** and **increasing storage costs**.

SOLUTION: RETAIN YOUR DATA OWNERSHIP WITH MULTI-CLOUD

- The biggest trend in cloud computing is an approach that combines different cloud services supplied from more than one cloud provider.

- Cloud providers could be public clouds like AWS, Microsoft Azure, or Google Cloud, as well as private clouds built on VMware.

THE RESULT: BUSINESS AGILITY AND COST EFFICIENCY

- Maintain control of your data, access best-in-class cloud data services from various public clouds, and avoid storing multiple, out-of-sync copies of the same data—all while eliminating data gravity concerns.

"Most organizations **adopt a multi-cloud strategy** out of a desire to **avoid vendor lock-in** or take **advantage of best-of-breed** solutions...

We expect that most large organizations will continue to willfully **pursue this approach.**"

—ACCORDING TO GARTNER ANALYST MICHAEL WARRILOW

[1] Gartner, Lessons Learned from the most common mistakes made by cloud infrastructure adopters, May 2020

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The Benefits of a Multi-Cloud Strategy

As the public cloud services continue to grow, the competition between cloud providers drives innovation. As native cloud services evolve, they provide increasingly differentiated value propositions to organizations. Implementing a multi-cloud strategy can allow your users to select the cloud services that best meet their needs, unleashing competitive advantages and productivity gains that would be unattainable with a single cloud.

PUBLIC CLOUD NATIVE SERVICES CONTINUE TO GROW

aws

Microsoft Azure

Google Cloud

165+ SERVICES

251+ SERVICES

101+ SERVICES

INTRODUCTION   DISCOVER THE   IMPLEMENTING MULTI-   MULTI-CLOUD DATA   RESOURCES
                      BENEFITS   CLOUD STRATEGY   SERVICES

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Multi-Cloud Advantages

Multi-Cloud offers the ability to:

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

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

Avoid vendor lock-in
- Benefit from the unique native cloud services from different providers
- Reconsider investing in a single cloud which may leave future opportunities out of reach
- Watch out for growing egress costs and migration risks as your data grows

Optimize performance
- Choose the right cost/performance combination of a native cloud service for each workload
- Get the best price by combining Azure's Spot VMs, AWS spot instances, and Google Cloud's preemptible VMs for your workloads

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Use Cases for Multi-Cloud Strategy

Businesses are innovating by using the best cloud services and not being locked into a single cloud

Backup and Data Protection
Customers can protect data hosted in multiple public clouds from a single destination with confidence, simplifying networking & operations.

Business Intelligence
Retain data ownership, gain actionable insights, and the flexibility to pivot when needed, while using the best analytics tools from every cloud.

Life Sciences
Research labs can accelerate time-to-insight for clinical genomic sequencing, drug design, and cancer research.

Healthcare
Healthcare providers can use one cloud for DR, another for processing (PACS) data, and a third for backups -- all while improving diagnostic speed.

Archive and Long-Term Retention
Organizations require a remote site to protect data that needs to be retained for governance and compliance requirements as well as workload migrations.

Predictive Financial Analytics
Financial institutions require fast access to petabytes of data that, when combined, can facilitate the process of predicting market movements.

High Performance Computing
Compute and data-heavy workloads that can cost-arbitrage processing between clouds and benefit from sharing data among the unique capabilities of multiple clouds.

Media and Entertainment
Studios leverage the best in breed tools from cloud providers of choice to collaborate during the production cycle, on media that is cloud-connected.

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Implementing an Effective Multi-Cloud Strategy

What questions to ask before getting started

1

"Which Cloud is Best?"

Is one public cloud superior at meeting the needs of your apps and developers, or do you require services from many providers? An effective multi-cloud strategy allows you to add future use cases you haven't thought of yet.

2

"Where Do I Need Clouds?"

Research the geographic availability of your cloud providers. Do you require multiple providers to comply with data compliance? Is your data in close enough proximity to deliver low-latency high-speed connectivity to public clouds?

3

"How Will My Data Grow?"

Can you scale storage independently of cloud compute and network resources? Can your data be accessed by multiple clouds simultaneously? What is the impact of moving your data in the future including egress fees?

4

"Will My Data Be There When I Need It?"

Is your data available when a compute instance or a container is deleted? Can you get your data back out of the cloud when you need it, without high egress fees?

5

"What Skills Do My Staff Need?"

Can your staff use consistent training on-prem and across clouds to minimize management overhead? Are the same storage systems available both on-prem and in the cloud to streamline and simplify these processes?

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What to Look for in an Ideal Solution

The right approach to multi-cloud adoption includes appropriate architecture, governance, and strategy.

- Data needs to be in close proximity to all major public clouds to meet specific low-latency thresholds.

- Cross-cloud connectivity and a dynamic allocation of network bandwidth to various clouds with change on demand

- Avoid duplication of data. Multiple copies and larger volumes equal higher costs and complexity.

- Compatibility with on-prem storage including scalability and native replication to the cloud; it should include familiar software which doesn't require additional training.

- Ability to reduce egress fees when taking the data out, or when accessing data from services and apps in other clouds.

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Architecture for Multi-Cloud Starts with Data...

The performance and scale of Dell Technologies storage combined with the economics and native services of the cloud

Dell EMC Storage

Direct connection

Native Replication

FACTION

ON PREMISES
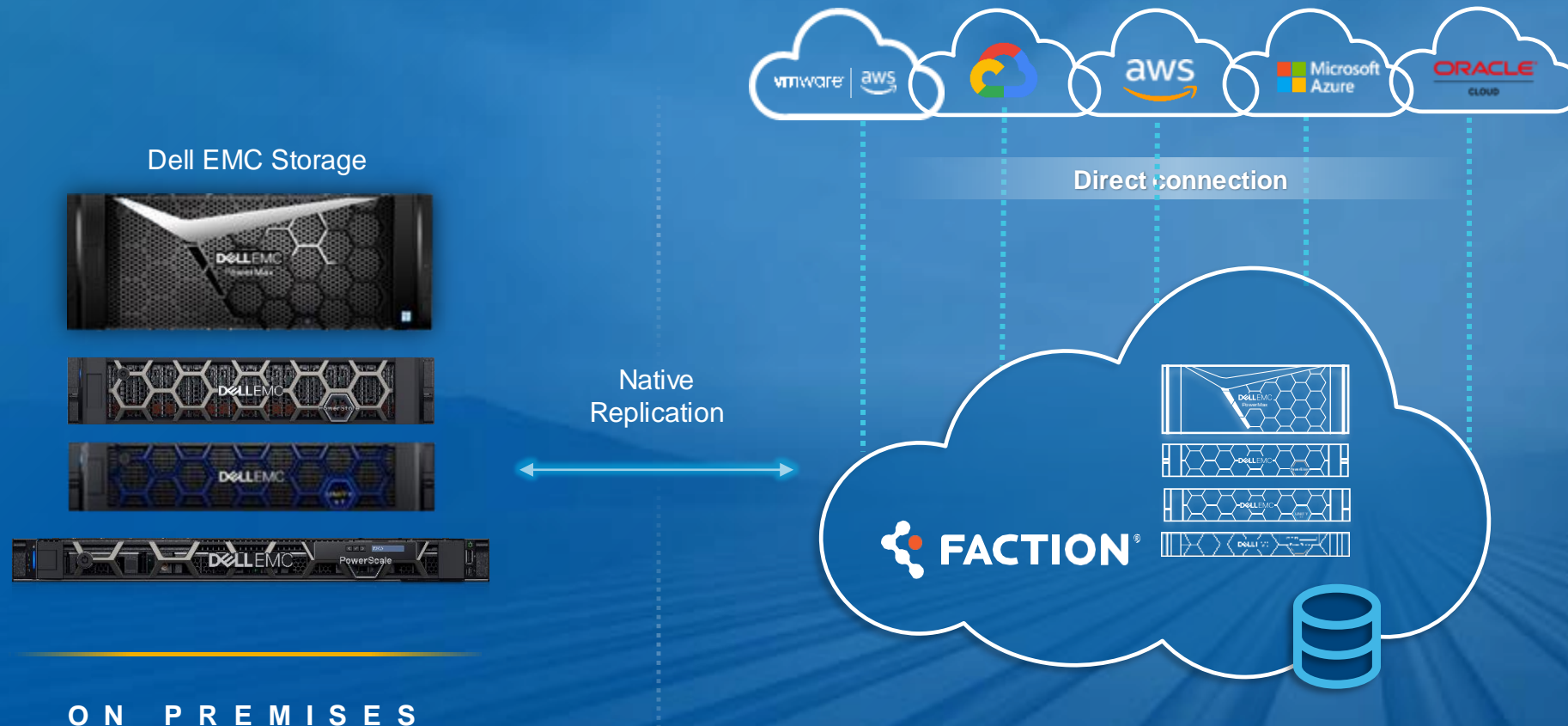
- The performance and scale of Dell EMC storage with the economics and services of the cloud

- Flexible, multi-cloud agility with zero data gravity

- No vendor lock-in with data independent of the cloud and the same dataset presented to multiple clouds

- Dynamic allocation of the network bandwidth to various clouds with change on demand

- Archive/long term retention of block, file and backup data with multi-cloud access

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...and Includes Offsite Data Protection

Multi-Cloud Data Services for PowerProtect

Direct connection

PowerProtect DD Series

Native Replication

O N   P R E M I S E S
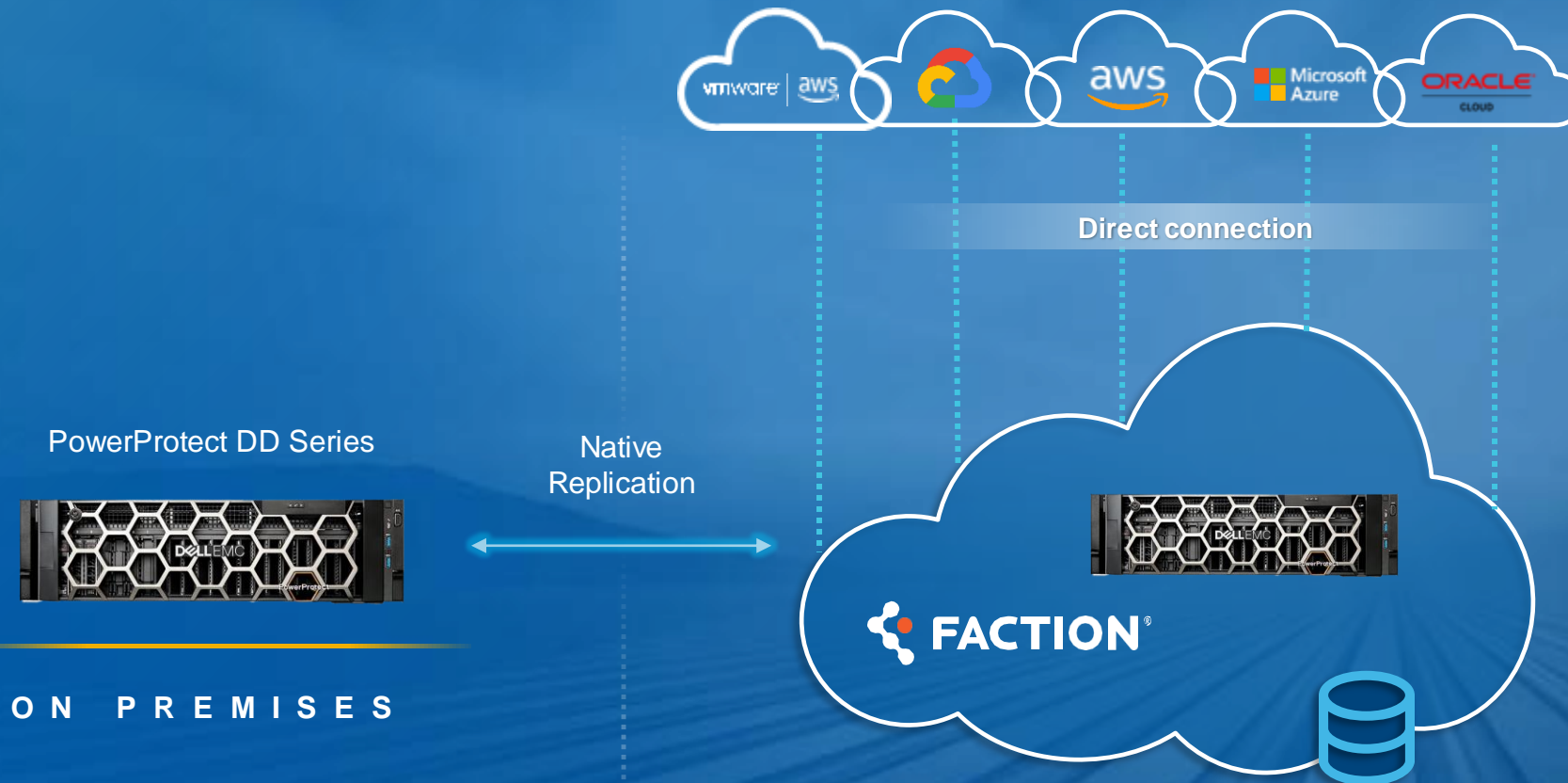
- Protect data and applications across public clouds in a single destination

- Up to 50:1 data reduction with PowerProtect DD series

- Restore data to any cloud

- $0 egress from Microsoft Azure

- Offsite target for long-term retention or disaster recovery

- Full managed service

- Multi-Cloud Services for Cyber Recovery as an option

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Customer Success Story

A healthcare organization embraces a hybrid multi-cloud environment with a range of Dell Technologies storage cloud solutions

Requirements

- Modernize PACS imagining and EPIC 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

- Multi-Cloud Data Services for PowerScale hosting PACS data for 12 hospitals with Azure native services including compute, machine learning and AI development

- PowerMax to support EPIC with scale-out, NVMe and sub-1ms write latency

Expected Results

- ROI under 7 months; savings over 3yrs
- Centralized, fast access to PACS data and EPIC EMR database data to facilitate a better patient experience
- Analyze trends, gain insight into patient data with Azure analytics services

"Multi-Cloud Data Services provides 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

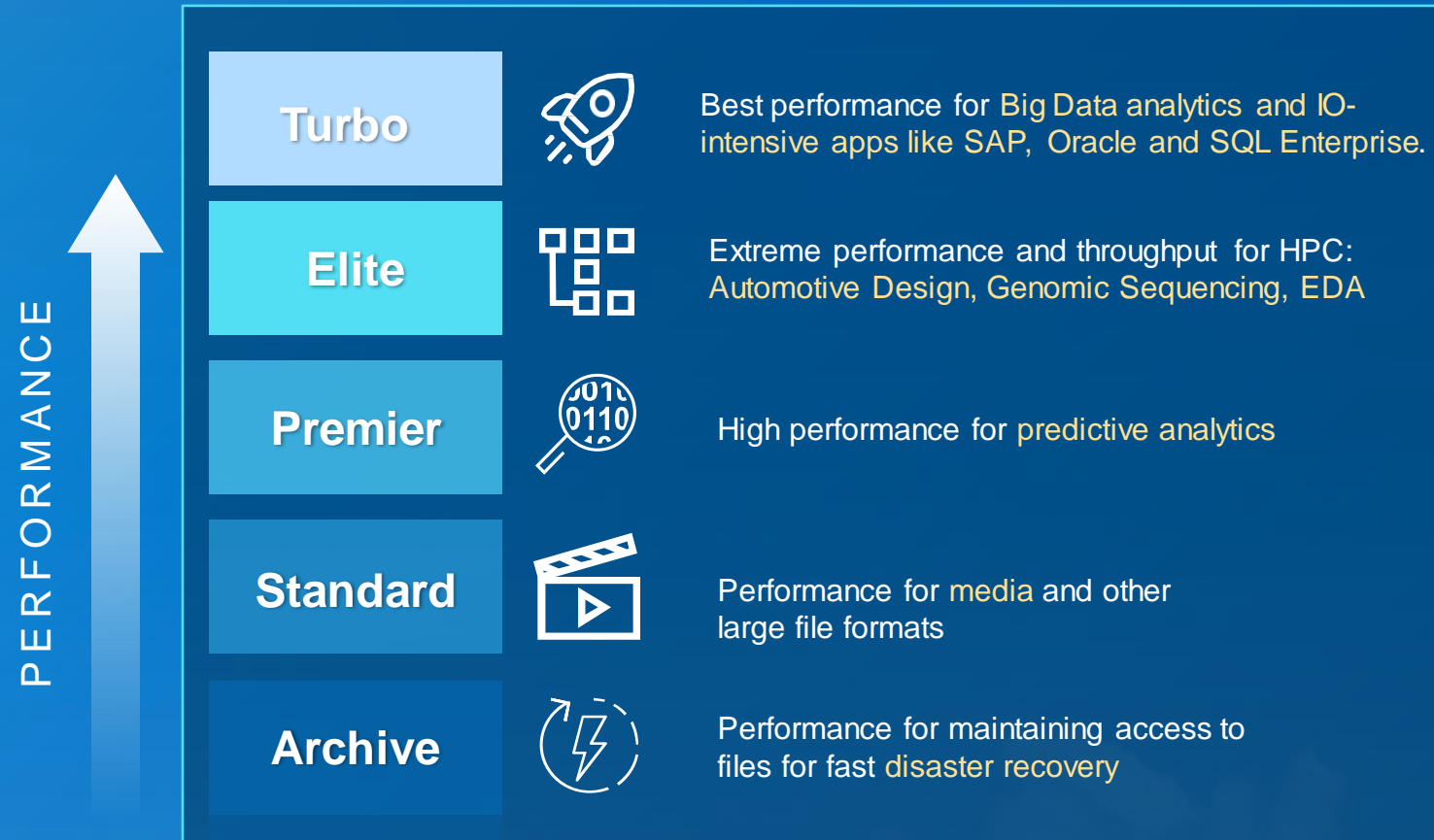INTRODUCTION DISCOVER THE BENEFITS IMPLEMENTING MULTI-CLOUD STRATEGY **MULTI-CLOUD DATA SERVICES** RESOURCES

About Multi-Cloud Data Services

Predictable pricing and guaranteed performance

PERFORMANCE ↑

Tier	Description
Turbo	Best performance for Big Data analytics and IO-intensive apps like SAP, Oracle and SQL Enterprise.
Elite	Extreme performance and throughput for HPC: Automotive Design, Genomic Sequencing, EDA
Premier	High performance for predictive analytics
Standard	Performance for media and other large file formats
Archive	Performance for maintaining access to files for fast disaster recovery

Portland
Chicago
Reston
Santa Clara
Los Angeles

London
Frankfurt

Sydney

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Next step: Multi-Cloud Data Services Hands-on-Lab

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DEMO CENTER

Make It Real With Demos

Demo Center is a highly scalable, multi-cloud-based service that provides 24/7 self-service access to virtual labs, hardware labs, and interactive product simulations.

LEARN MORE

HOL-0544-01 **Multi-Cloud Data Services for PowerScale**

New

This lab features Dell Technologies Cloud PowerScale for Multi-Cloud. The PowerScale family — including PowerScale and Isilon nodes and the OneFS Filesystem — provides scalable, resilient cloud-attached storage wi...

Data Storage | Authors: Jae Roh | Keywords: AWS,Azure, Multi Cloud, Faction,PowerScale, Isilon | MORE INFO | ⚡ DEPLOY

Contact Dell Technologies Sales to experience hands-on-lab that demonstrates the ease of attaching Dell EMC PowerScale to multiple clouds

INTRODUCTION   WHAT PROBLEM DOES   DISCOVER THE   MULTI-CLOUD DATA   RESOURCES
                      MULTI-CLOUD SOLVE?   BENEFITS   SERVICES

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ADDITIONAL RESOURCES

Websites

Dell Storage Solutions for Cloud
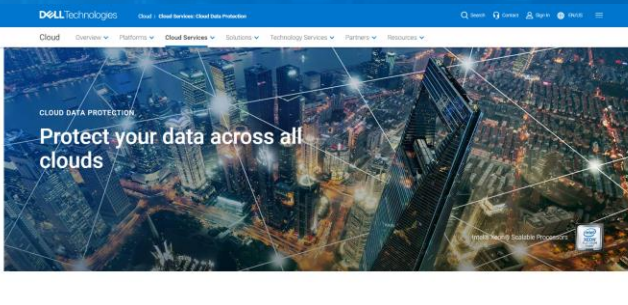
Multi-Cloud Data Services for Data Protection

Dell Technologies Cloud Data Protection and Backup Solutions

Collateral

Demos

Multi-cloud Data Services Interactive Demo

Blogs
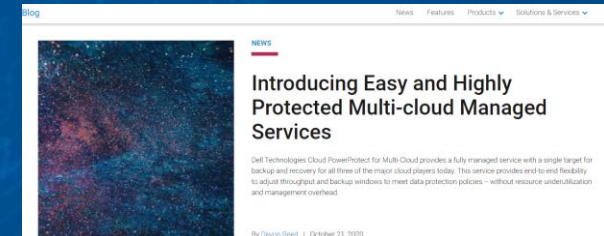
Dell Technologies Blogs

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WHAT PROBLEM DOES MULTI-CLOUD SOLVE?

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MULTI-CLOUD DATA SERVICES

RESOURCES

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