DCIG *Solution Profile*
Enterprise Hybrid Cloud SDS Block Storage Solutions

by Todd Dorsey

2021-22 DCIG TOP 5 — ENTERPRISE HYBRID CLOUD SDS BLOCK STORAGE

SOLUTION
Pure Cloud Block Store

COMPANY
Pure Storage
650 Castro St #400
Mountain View, CA 94041
(833) 371-7873
purestorage.com

DISTINGUISHING FEATURES OF PURE CLOUD BLOCK STORE
- Stateless controllers plus virtual shelf architecture delivers high availability
- Proactive support
- Enterprise hybrid cloud SDS-as-a-Service

DISTINGUISHING FEATURES OF TOP 5 SOLUTION PROVIDERS
- Substantial revenues
- Robust support capabilities
- Public cloud support

SOLUTION FEATURES EVALUATED:
- Deployment capabilities
- Data protection
- Product and performance management
- Documentation support
- Technical support
- Licensing and pricing

Software-defined Storage Factors Driving Adoption

The growth of Software-defined Storage (SDS) is part of a broader transition to the software-defined data center, where infrastructure elements such as compute, storage, and networking are abstracted and virtualized. Increasing SDS capabilities, along with the demand for flexibility and agility, fuels SDS demand. Trending at a compound growth rate of 27%, the SDS market expects to grow $42.79 billion by 2024.

Factors contributing to the growth of SDS include:

Agility and optionality. Organizations can deploy and configure software-defined storage solutions where and how they want using their preferred server provider, which may differ from their preferred storage software vendor. Expanded deployment options open up within virtual and cloud platforms as SDS solutions free enterprises from particular hardware vendors and infrastructures.

Increasingly powerful hardware. Advances in underlying system hardware, including multi-core CPUs, large amounts of RAM, flash memory, and fast networking, contribute to SDS growth. In many cases, these advances eliminate the need for specialized storage hardware, enabling ever-expanding storage capacity and consistent, low-latency performance.

Hybrid cloud environments. Cloud adoption and in particular, the embrace of hybrid cloud models stimulates expansion of SDS. Enterprise storage vendors now offer their solutions as software on servers of the customer's choice and on public cloud platforms. They provide enterprise-class data services with performance characteristics businesses need for confidence to move their workloads to these platforms.

Hybrid Cloud Shaping SDS Product Capabilities

Many organizations desire to move workloads to the cloud or make data available for processing in the cloud without sacrificing data services and integrations they rely on in their on-premise datacenters. Their hybrid cloud requirements are shaping SDS product capabilities.

Examples of this evolution:

Deployment flexibility. Enterprises deploy SDS solutions at the edge, in data centers, and within cloud platforms. Recognizing deployment environments better suit some purposes over others, enterprises move data to where workloads best reside. Thus, organizations look for SDS solutions with flexibility and adaptability to meet the unique needs of these diverse workloads.

Cloud data snapshotting. More than in the past, enterprises are snapshotting to the cloud. Organizations may use that data to recover applications on-premise, recover applications in the cloud, or extract value from that data by running cloud-based processes against it.

Automation and predictive analytics. Data generation, regardless of industry, continues to climb. As data's value diminishes with age, organizations require automation tools to speed processes with SDS products. Predictive analytic features become a differentiator as companies look to save time and money through insights and recommendations based on artificial intelligence and machine learning (AI/ML).

Licensing and pricing. Organizations look for flexibility in their SDS agreements. As contrasted with a traditional contract for an on-premise storage array and then repurchasing those capabilities for data stored in the cloud, companies want agreements that enable them to manage data wherever it lives. In response, solution providers are adapting their licensing and pricing models to accommodate hybrid cloud architectures.

1. https://www.globenewswire.com/news-release/2020/07/14/2061718/0/en/Worldwide-Software-Defined-Storage-Industry-to-2024-Key-Drivers-Challenges-and-Trends.html. Accessed December 29th, 2020.

SDS for Block Storage

The traditional storage area network (SAN) appliance has long been the trusted, shared platform for an enterprise's most valuable data. As SDS has moved mainstream, many enterprise storage vendors have made their solutions available as software-defined storage on-premises and in the cloud. Enterprises are comfortable extending trust to these SDS solutions for mission-critical workloads. In many cases, SDS solutions for hybrid cloud environments become a natural extension of the on-premise SAN. With these solutions, the tools and scripts to deploy and manage cloud data are the same as on-premise data management.

Distinguishing Features of TOP 5 SDS Enterprise Hybrid Cloud SDS Block Storage Solution Providers

DCIG evaluated twenty-two SDS solutions supporting block storage protocols. Using fact-based solution analysis and comparisons of defensible data derived from publicly available sources, vendors, and DCIG's own experience, DCIG's TOP 5 Enterprise Hybrid Cloud SDS Block Storage Solution providers evidenced these characteristics:

Substantial revenues. All DCIG TOP 5 SDS Block Storage solution providers have revenues approximate to or greater than $1 billion. These superior revenues reflect mature technical and support processes that instill confidence in deploying and using the product in enterprise settings.

Robust support capabilities. These TOP 5 solution providers display robust support capabilities compared to other solutions DCIG evaluated. They provide publicly available support documentation for big data applications such as Microsoft Structured Query Language (SQL), Oracle, and SAP HANA. All TOP 5 vendors hosted community forums and online knowledgebases for self-service support. They evidenced a greater breadth of technical support options in comparison with the other solutions.

Public cloud support. The idea of enterprise hybrid cloud SDS block storage links the concept of on-premise SDS deployment with deployment in at least one public cloud. Large companies look to cloud services for storage expansion, rapid recovery, and running cloud-based workloads. All DCIG TOP 5 solution providers support deployment in at least two public cloud platforms, providing ample opportunities for linking enterprise storage to cloud data services.

Pure Cloud Block Store

Upon DCIG's completion of reviewing multiple, available enterprise AWS cloud backup solutions, DCIG ranked Pure Cloud Block Store™ as a TOP 5 solution. Pure Storage started as an all-flash array company, introducing its flagship FlashArray product as primary storage for enterprise data centers. Pure Cloud Block Store runs the same Purity Operating Environment as its on-premise FlashArray storage arrays. The solution supports virtual machine (VM) deployments within AWS and Microsoft Azure. It integrates with on-premise FlashArray implementations and as a managed service through Pure as-a-Service™.

Notable features that earned Pure Cloud Block Store a place among the other DCIG TOP 5 Enterprise Hybrid Cloud Block SDS solutions include:

Stateless controllers plus virtual shelf architecture delivers high availability. Pure Storage differs substantively on how it architects cloud volumes. First, it deploys stateless active/active controllers as a pair of EC2 instances. Second, it creates a virtual storage shelf consisting of seven EC2 instances, each functioning as a virtual drive. If a virtual drive fails, the virtual shelf remains online. Storage can expand non-disruptively by adding more virtual storage shelves. Further, Pure Cloud Block Store mirrors all data to Amazon S3 for durability. Pure Storage built Cloud Block Store for the Azure platform with these same principles.

Proactive support. Pure Cloud Block Store includes the Pure1® META analytics platform for data storage management and monitoring. The analytics engine includes AI/ML recommendations based on both the customer's deployment and Pure's entire customer base. Pure Storage offers proactive resolution based on both fault data and predictive analytics. Pure Cloud Block Store's analytic and proactive support features reduce management overhead and increase system availability and performance.

Enterprise hybrid cloud SDS-as-a-Service. Pure-as-a-Service and Pure Cloud Block Store are both available on AWS Marketplace and on-premises as a pay-per-GB-used model. Designed as a 100% OPEX subscription model, Pure-as-a-Service requires a minimum contract term of twelve months and a 50 tebibyte reserve capacity commitment. Backed by Pure's Cloud Efficiency Guarantee, organizations can experience notable data reductions through data compression, deduplication, and thin provisioning, depending on the workload and application. The service includes access to Pure1 META tools for managing the hybrid-cloud storage environment from a single dashboard. ∎