Solution Profile

2025-26 DCIG TOP 5

ENTERPRISE SDS BLOCK STORAGE SOLUTIONS

Arctera InfoScale Solution Profile

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Enterprise SDS Block Storage Solutions

Arctera InfoScale Solution Profile

SOLUTION

Arctera InfoScale

COMPANY

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DISTINGUISHING FEATURES OF INFOSCALE

- Multiple DR, HA, and block storage optimization features.
- Broad enterprise support multiple cloud, hardware, and hypervisor platforms.
- Multiple deployment and configuration options to accommodate on-premises, cloud, and hybrid cloud environments.
- Protects against ransomware attacks and data corruption by restoring data back to a known-good state.
- UEFI Secure Boot integration forces OS to pass a signature check before booting.

SDS Block Storage Solutions Ready for Enterprise Deployments

Software-defined storage (SDS) block storage solutions have come of age. Sometimes viewed in the past as too hard, too risky, or unproven, those days are over. Rather, any enterprises that still view SDS block storage solutions through this lens do themselves a disservice.

SDS block storage solution providers have made significant strides to mitigate the risk and perceived stigma associated with deploying their solutions into enterprise environments. For instance, these providers now:

- Certify their SDS block storage solution with multiple leading application, database, hypervisor, and operating system providers.
- Configure and ship SDS block storage solutions directly from one or more hardware providers as preconfigured, ready-to-use hardware storage appliance.
- Make their SDS block storage software available on hardware from multiple providers.
- Offer ample evidence and proof points to demonstrate their SDS block storage solution performs as well or better than comparable storage appliances from hardware providers.
- Offer enterprise levels of upfront and ongoing technical support and customer training to ease deployments and ensure successful ongoing operations.

These and other factors should give enterprises the assurances they need to confidently move forward with deploying SDS block storage solutions. They also help explain why researchers forecast the market for SDS storage solutions will grow significantly. Two research firms forecast an increase in the SDS market from about $US50+ billion in 2024 to as high as $US260+ billion by 2029.[1]

Its SDS block storage's other features that should contribute to its accelerated growth and adoption in the coming years. For instance, depending on the SDS block storage solution, enterprises obtain new flexibility to virtualize multiple types of storage. Storage choices may range from storage arrays to disk drives available in x86 server hardware to cloud block storage.

SDS block storage solutions also help simplify the tasks associated with managing environments with block storage networking protocols. This simplification can range from migrating data between systems to centralizing the volume management of the virtualized storage. It may also alleviate complex zoning, LUN masking, and other storage networking tasks commonly associated with managing block storage environments.

Drivers for Enterprise SDS Block Storage Solution Adoption

DCIG identified over 20 different enterprise SDS block storage solutions that enterprises could deploy in various ways. Deployment options could include software for deployment on-premises, in the cloud, a preconfigured hardware appliance, or a combination of these.

Some providers also partner with hardware OEMs so that enterprises may order appliances from their preferred OEM. A few providers even make infrastructure-as-a-service (IaaS) available as an option. If electing to use IaaS, the provider manages the software after an enterprise deploys it.

Enterprises increasingly encounter new use cases that demand the use of storage solutions other than traditional storage hardware appliances. While edge locations may be the first that come to mind, enterprise IT environments possess additional business drivers for adopting SDS block storage solutions:

SDS block storage solution providers have made significant strides to mitigate the perceived risks and stigmas associated with deploying their solutions into enterprise environments.

- ***Common storage management experience.*** Deploying SDS block storage solutions in the cloud immediately emerges as a common enterprise use case. Enterprises may want to have the same block storage management experience both on-premises and in the cloud.

  Many of the SDS block storage solutions meet many if not all enterprise requirements. In some cases, the provider bases its SDS block storage software on the same software that runs on the provider's enterprise storage systems. This software may offer features such as replication, snapshots, data reduction, and data migration.

  Additionally, some enterprises seek a more robust hybrid cloud experience. Some SDS block storage solutions give them the flexibility to host the same workloads both on-premises and in the cloud. In some cases, they can even move the workloads back and forth between on-premises and the cloud.
- ***Identifying a VMware vSAN alternative.*** Broadcom has further incentivized enterprises to explore alternative SDS block storage options. In December 2023, Broadcom announced that vSAN had become part of VMware Cloud Foundation (VCF) and VMware vSphere Foundation (VVF).[2] As a result, enterprises may no longer acquire vSAN as a standalone solution. This may prompt existing vSAN enterprise clients to identify a new SDS block storage solution.
- ***Cybersecurity and ransomware concerns.*** Enterprises have increased concerns about cybersecurity attacks in general and ransomware attacks specifically. To address these concerns, DCIG evaluated the various cybersecurity capabilities of each SDS block storage solution.

  DCIG used the National Institute of Science and Technology's (NIST) Cybersecurity Framework to focus its research in this area. Using these guidelines, DCIG evaluated how well each SDS block-based storage solution delivered on the NIST's five cybersecurity categories: identify, protect, detect, respond, and recover.

Common Features across All Enterprise SDS Block Storage Solutions

DCIG evaluated 21 different SDS block storage solutions in preparing this report. Across these 21 SDS block storage solutions DCIG evaluated over 325 features on each software product. In evaluating these solutions, DCIG often finds that all evaluated products support a subset of the evaluated features which held true again in this report.

However, the number of evaluated features that all evaluated products supported was lower than normal. DCIG only identified three features of the 325+ evaluated features that all 21 products universally offered and supported. These included:

- ***Deployment of a cluster in a single physical data center.*** Every SDS block storage solution that DCIG evaluated supported at least one type of cluster configuration to provide high availability. In most cases, each SDS block storage solution supports multiple different types of cluster deployments. However, a single physical data center cluster represents the only one of the six configurations that all 21 products supported.
- ***Web-based GUI.*** Using a web-based GUI to access and manage a product has become a de facto standard. This standard carries over to managing SDS block storage solutions.
- ***24x7x365 technical support with 4-hour response times.*** The availability of technical support 24 hours a day, 7 days a week, 365 days a year with 4-hour response times represents the baseline for enterprise solutions. All providers of SDS block storage solutions offer technical support packages that met this standard.

Despite these 21 solutions only sharing support for these three features, DCIG identified nine other features that 85 percent or more of the products supported. These included:

Enterprises have increased concerns about cybersecurity attacks in general and ransomware attacks specifically.

1. ***Back-end NVMe and SAS storage connectivity.*** SDS block storage solutions often support multiple storage networking protocols to communicate with backend storage. While no one back-end storage protocol was universally supported by all SDS block storage solutions, 85 percent supported either NVMe (Non-volatile Memory Express) or SAS (Serial attached SCSI).
2. ***Data encryption.*** Encrypting data at-rest takes on added importance in SDS block storage solutions. Enterprises may manage the SDS block storage software and underlying storage hardware separately. As a result, storage hardware removed from the SDS block storage environment could contain data in a readable format. Encrypting data stored on the storage devices mitigates this possibility. 85 percent of the SDS block storage solutions support at-rest AES-256 encryption to help prevent this occurrence.
3. ***Email, online knowledge base, and phone support.*** The methods that providers offer for support and contacting them continue to evolve. Contact methods and support options that enterprises could once assume would always be there may no longer hold true. That said, contacting providers by email or phone or the ability to access an online knowledge base still holds true for 95 percent of the SDS block storage solutions evaluated.
4. ***iSCSI storage networking protocol support.*** Being focused on block storage, one might expect all the SDS block storage solutions to share support for one block storage networking protocol. This was not the case. 85 percent did, however, support the iSCSI storage networking protocol. The next most supported storage networking protocol across all evaluated solutions was NVMe/TCP.
5. ***Multiple data protection options.*** Quickly creating copies of production data on multiple storage types represents one of SDS block storage's key benefits. Enterprises may then use these copies for backup, archiving, testing, and other purposes. While all the evaluated SDS block storage solutions do not universally support one replication technology, they do support several. 85 percent or more support asynchronous replication, clones, and crash-consistent snapshots.
6. ***Non-disruptive upgrades.*** All the SDS block storage solutions reviewed offered multiple non-disruptive upgrade options of a minute or less of downtime. No one of the four non-disruptive upgrade options was supported by all SDS block storage solutions. However, 85 percent supported non-disruptive virtual appliance or controller replacement. One way to upgrade non-disruptively includes migrating data from one virtualized storage target to another. These upgrades without downtime can be performed while adding or replacing a virtual appliance controller, or when doing a code upgrade.
7. ***Options to scale the SDS block storage solution either up or out.*** 85 percent or more of the SDS block storage solutions supported either scale up or scale out deployments. Scale up allows enterprises to add more storage resources into a single virtual or physical appliance. Scale out lets enterprises add virtual or physical storage appliances or controllers that are part of a single namespace or clustered instance.
8. ***REST APIs.*** More enterprises want to centrally manage their IT infrastructure using a single third-party tool or console. To achieve this end, they expect any new hardware or software they introduce into their IT environment to support this objective. 95 percent of the SDS block storage solutions offer REST APIs to support this type of centralized management.
9. ***Role-based access controls (RBAC).*** SDS block storage solutions often host data that is both critical to an enterprise's operations and sensitive in nature. These conditions make it imperative that enterprises control who can access these systems, under what conditions, and the changes they can make. 85 percent of these solutions offer role-based access controls to help enterprises meet these requirements.

Enterprise SDS Block Storage Solutions

Arctera InfoScale Solution Profile

In InfoScale's HCI configuration, enterprises may distribute InfoScale nodes across multiple geographical locations. These may include hybrid cloud configurations with on-premises and public cloud nodes participating in the same cluster where latency is not an issue.

Arctera InfoScale

Upon DCIG's completion of reviewing 21 enterprises SDS block storage solutions, DCIG ranked Arctera InfoScale as a TOP 5 solution. Arctera US, LLC, began selling storage management software before the term software-defined storage became the norm. It started with Storage Foundation, which eventually became InfoScale.

InfoScale directly integrates with applications to provide high availability and disaster recovery for many business services. These include critical business services, databases, and enterprise applications.

Arctera has expanded InfoScale's capabilities over the years to support physical and virtual environments, public clouds, and containers. Across these environments, InfoScale offers multiple high availability, disaster recovery, and block storage optimization features.

Additional features that helped Arctera InfoScale earn a TOP 5 award include:

- ***Broad enterprise cloud, hardware, and hypervisor platform support.*** InfoScale supports server hardware from nearly every major hardware provider. Cisco, Dell, Fujitsu, HPE, Lenovo, and Supermicro all appear on Arctera's hardware compatibility list.

  InfoScale also supports multiple hypervisors and clouds. On the hypervisor side, it supports VMware vSphere, Microsoft Hyper-V, Red Hat Enterprise Linux (RHEL), and multiple Linux KVM versions. On the cloud side, it supports deployments in all three of the major hyperscalers—AWS, Google Cloud, and Microsoft Azure.

- ***Multiple different deployment configurations.*** InfoScale offers enterprises the deployment flexibility needed to meet a broad range of enterprise storage requirements. Enterprises may deploy InfoScale as:
  - A compute-only cluster with separate storage resources
  - A storage-only cluster with a separate server
  - An HCI cluster with compute and storage in the same node.

  In its HCI configuration, enterprises may distribute InfoScale nodes across multiple geographical locations. These may include hybrid cloud configurations with on-premises and public cloud nodes participating in the same cluster where latency is not an issue.

  Enterprises may deploy InfoScale as a Mesh Active architecture, a scale-out grid, or in a shared nothing configuration. An InfoScale cluster can accommodate up to 64 virtual storage appliances or controllers and pool storage from third-party storage systems.

- ***Multiple advanced cybersecurity features.*** InfoScale offers at-rest encryption for both Linux and Windows Dynamic volumes. Its Secure Filesystem (SecureFS) protects against ransomware attacks and data corruption by restoring data back to a known-good state. Its UEFI Secure Boot integration forces the operating system to pass a signature check before booting. This helps prevent malicious or modified software from being introduced into systems. ■

Sources

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