Hitachi Vantara Solution Profile

2022-23 DCIG TOP 5 ON-PREMISES SDS OBJECT STORAGE SOLUTIONS

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SOLUTION

Hitachi Vantara
Hitachi Content Platform

COMPANY

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DISTINGUISHING FEATURES OF THE HITACHI CONTENT PLATFORM

- Robust auto-tiering
- Hitachi Content Intelligence
- Multi-tenant services

DISTINGUISHING FEATURES OF TOP 5 SOLUTIONS

- Robust support
- Public cloud support
- Wide deployment support
- Directory services integration
- Robust analytics
- Value-added services

SOLUTION FEATURES EVALUATED

- Deployment capabilities
- Data protection
- Product and performance management
- Technical support
- Licensing and pricing

Object Storage Background

Object Storage has come a long way since its beginnings in the 1990s. Evolving from its modest role serving backup, archive, and disaster recovery needs, object storage has grown to become an essential part of enterprise storage. Object storage deployment options now abound: in the cloud, on-premises, and at the edge; appliance-based and software-defined; proprietary offerings and open-source solutions.

Object Storage Characteristics and Benefits

A principal reason driving object storage's adoption is the deluge of data growth. IT departments must store, manage, and protect existing data, plus deal with new data coming into the organization. The largest segment of this data growth is unstructured data such as video, images, documents, emails, presentations, spreadsheets, and similar file types. For many organizations, terabytes of data under management have become petabytes and even exabytes.

Object storage's characteristics are beneficial in this regard.

Scalability. There is a reason why all the public cloud providers primarily use object storage. Object storage's flat architecture without folders, hierarchical structures, or built-in limits does away with the scaling limitations of file systems. Plus, object storage scales at a more affordable price per terabyte than contrasting file storage systems.

Metadata. When storing large amounts of unstructured data, there is the need to make sense of that data. A key characteristic of object storage is the ability to attach customizable metadata to objects. Meta comes from the Greek word meaning 'with' or 'beside.' Metadata is a small amount of structured data associated with the object itself. User-defined metadata enables applications to perform bulk functions upon objects such as searching, indexing, and analyzing objects.

Self-protecting. Inherent within object storage solutions are protection capabilities to ensure data resiliency and durability. Often as a standard feature, object storage solutions include replication and erasure coding. Erasure coding segments and distributes data across multiple nodes or sites. Replication makes and stores multiple copies of the data for backup and recovery. Data may be restored to an original state from erasure-coded segments in the event of storage component failures, preventing data loss.

S3 API. Amazon's API for Amazon Simple Storage Service (S3), has become the API standard for object storage. All object storage vendors DCIG evaluated support the S3 API to some extent. With S3, organizations can access their object stores, authenticate data, obtain object properties, and manage permissions. With S3-compatible storage, organizations can move their data to other object storage services for cost savings or specialized workloads.

Public Cloud Object Storage Challenges

There is little question AWS's introduction of S3 cloud storage in 2006[1] fueled the adoption of cloud computing and storage. One of the great benefits of the cloud is its simple value proposition: with a credit card, scalable compute and storage infrastructure becomes immediately available. However, public cloud infrastructure is not with its challenges.

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Cloud costs are a principal reason why organizations are repatriating their data to on-premises or hybrid-cloud (on-premises and cloud) object storage solutions.

Latency. Latencies occur because of transmission delays across the Internet or within the cloud provider itself. Latencies can be problematic for workloads with time-sensitive requirements. Dedicated circuits into the cloud provider can help, but may be insufficient for critical applications.

Data sovereignty. The rise of cloud computing has resulted in countries passing regulations that specify how data is stored. Regulations may require data collected and processed within a country's borders remain within those borders. It may also mean that data is subject to the jurisdiction in which the cloud infrastructure physically resides. Ultimately, enterprises must understand the evolving legal impacts of data sovereignty regulations on data storage and transfers.

Public cloud data breaches. The accessibility and volume of data stored in the cloud makes it a attractive target for criminals. A recent security research study reported that 40% of organizations had experienced a cloud-based data breach over the last 12 months.[2] Given the costs and negative public relations that data breaches can bring, organizations are rightly concerned about this potential risk.

Cloud cost overruns. While storing data in the public cloud is relatively inexpensive, frequently accessing that data adds up. Further, it is not always clear how cloud decisions will affect an invoice. It is a common experience for companies using the cloud to receive a high bill at some point. Cloud survey research showed a large percentage of respondents had experienced unexpected or significantly higher cloud costs due to COVID-19.[3]

Why Object Storage On-Premises

Certainly, there are good reasons enterprises should leverage the cloud for its convenience and strengths. The public cloud helps companies learn cloud skills and technologies. The 'however' is that the cloud does not scale cost-effectively. Rising cloud costs place negative pressures on margins. As the team at Andreesen Horowitz noted in their article *The Cost of Cloud, a Trillion Dollar Paradox,* 'You're crazy if you don't start in the cloud; you're crazy if you stay on it.'[4] Cloud costs are a principal reason why organizations are repatriating the data to on-premises or hybrid-cloud (on-premises and cloud) object storage solutions.

Other reasons driving the adoption of on-premises object storage include:

Unstructured data growth solution. Object storage offers enterprises an optimum solution for dealing with exponential unstructured data growth. As organizations create unstructured data, they can move cold data off primary storage to on-site archive or active archive object storage. Enterprise may also use object storage for their backup and disaster recovery needs. Moving cold data off tier 1 storage creates a lean, organized, and higher performing primary storage infrastructure.

High performance object storage. Data rich applications and workloads depend on fast response times. Hardware and software improvements add to on-premises high performance use-cases involving unstructured data such as IoT, big data analytics, and AI/ML. Flash media accelerates low latency and high throughput. On top of this, because of proximity, workloads utilizing on-premises object storage achieve better performance.

Data sovereignty. Data sovereignty rules change yearly. Non-compliance can lead to stiff penalties. For critical data and workloads, organizations may find it simpler to store their object data on-premises for geographical control. On-premises object storage also allows organizations to design security protocols tailored to their needs.

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Object storage becomes the preferred storage medium where IoT devices, cameras, and machine sensors generate, store, and transmit unstructured data.

Edge computing. Edge computing use cases continue to evolve. The edge presents unique challenges of environment, power, performance, connectivity, and space. Object storage becomes the preferred storage medium where IoT devices, cameras, and machine sensors generate, store, and transmit unstructured data.

Transition to cloud-native workloads. Enterprises are using on-premises object storage to develop, test, and deploy applications made for a cloud computing architecture. Cloud-native workloads run anywhere: in the cloud, in data centers, or at the edge. Developing these applications on-premises enables developers to work out issues before transitioning these workloads to the cloud. This on-premises storage also enables organizations to move applications developed in the cloud back on-premises.

Software-Defined Object Storage

The growth of Software-defined Storage (SDS) is part of the 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 its flexibility and cost-efficiencies, fuels SDS demand.

SDS expands on the benefits of object storage in the following ways:

Scalability. SDS solutions enable organizations to scale up or out depending on requirements. On-premises, organizations can add to their existing physical storage to expand their virtualized pool. Many SDS solutions have virtually no capacity limitations. Such scalability helps organizations flex to their growing data and application needs.

Cost efficiencies. SDS-based solutions bring savings and efficiencies compared with traditional storage systems. Organizations may deploy SDS solutions with cost-effective commodity hardware. They may also save money by optimizing and extending the life of their existing storage. When constrained IT budgets rarely grow at the pace of unstructured data accumulation, these cost-efficiencies are greatly valued.

Data management capabilities. The data management component of SDS solutions virtualizes and views data from its source systems as one central repository. Global views, including permissions management, capacity utilization, and analytics, enable new opportunities for ensuring optimal performance and cost for managing an organization's object stores.

Distinguishing Features of DCIG TOP 5 On-Premises SDS Object Storage Solutions

DCIG evaluated eighteen SDS-based solutions for an on-premises object storage use case. Using feature-based analysis and comparisons of defensible data derived from publicly available sources, vendors, and DCIG's own experience, DCIG's TOP 5 On-Premises SDS Object Storage Solutions evidenced these characteristics in contrast with the other evaluated solutions.

Robust support. DCIG TOP 5 providers display robust support capabilities. All TOP 5 vendors provide 24x7x365 technical support and one-hour support response times. Each of the TOP 5 solutions supports real-time reporting to the solution vendor for expedited trouble reporting and resolution compared with 69% of the other evaluated

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DCIG TOP 5 solutions offer ample deployment options compared with the other evaluated solutions.

solutions. All vendors offer community support forums and knowledgebases for self-service support. In short, DCIG TOP 5 solutions evidence a greater breadth of support options than the other solutions.

Public cloud support. Enterprises may leverage public cloud storage for its benefits. This may be for backup, disaster recovery, or archive purposes. DCIG TOP 5 solutions support multiple public cloud providers. Such broad support offers flexibility in matching a cloud provider's cost and capabilities with the needs of the business.

Wide deployment support. DCIG TOP 5 solutions offer ample deployment options compared with the other evaluated solutions. Examples include deployment support on bare metal servers, commodity x86 servers, Linux operating systems, public cloud, and VM environments. Wide deployment options give organizations flexibility for using SDS Object Storage for their specific situations.

Directory services integration. DCIG TOP 5 solutions show broad support for directory service and authentication features. All support AD/LDAP integration, IAM authentication, and object level access control lists for data security. In contrast, only 34% of the other evaluated solutions provide IAM and Object-Level Access Control List support.

Robust analytics. DCIG TOP 5 Solutions deliver extensive analytic capabilities. Analytics give organizations insights into their data patterns and trends. These insights help IT decision-makers plan, budget, and optimize their object storage usage.

Value-added services. In addition to their SDS Object Storage offering, DCIG TOP 5 Solution providers also offer value-added services such as consulting and installation services.

Hitachi Vantara Hitachi Content Platform

Hitachi Vantara compliments HCP with a portfolio of optional software products that provides expanded data management, governance, analytics, collaboration, and file gateway capabilities.

Upon DCIG's completion of reviewing multiple, available SDS-based on-premises object storage solutions, DCIG ranked Hitachi Content Platform as a TOP 5 solution. Hitachi Vantara's object storage software solution, Hitachi Content Platform (HCP), centralizes unstructured data storage for data creators, users, and applications. Enterprises may deploy HCP on bare metal servers, run HCP in a VM, container, or in the cloud, or purchase HCP as a fully integrated appliance. HCP enables configurations exceeding 5 exabytes. In addition to S3 and RESTful APIs, technical buyers will find HCP supports

NFS, SMB, SMTP, and WebDAV protocols. Hitachi Vantara compliments HCP with a portfolio of optional software products that provides expanded data management, governance, analytics, collaboration, and file gateway capabilities.

Notable features that earn HCP a DCIG TOP 5 award include:

Robust auto-tiering. System administrators can use HCP to establish policy-based management of their object store data. HCP supports up to a maximum of five tiers to automate when, where and how many copies of data are stored. Data can move between different classes of storage within an HCP cluster, or external to the cluster to any S3 compatible object store, or to any of the popular cloud storage services. Combining HCPs auto-tiering capabilities with HCP's QoS features, organizations can fine-tune their object storage for cost and performance priorities.

Hitachi Content Intelligence. Organizations may take advantage of HCP's complementary product, Hitachi Content Intelligence (HCI), to collect, process, normalize, index, and analyze their object stores. HCI implements its data processing as workflows

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created through a wizard-driven workflow designer. After processing, HCI can then store its results for processing by HCI's search utility, Hitachi Vantara's Pentaho tool, or availed to thirdparty applications for extracting valuable business intelligence.

Multi-tenant services. IT departments can manage their object storage capacity by dividing their pools into smaller, virtual object stores. Administrators can then configure tenants for capacity, attributes, and service levels. Tenants can be assigned to different IP networks and further subdivided into thousands of namespaces for additional control of storage assignments. HCP includes tenant monitoring, auditing, and reporting capabilities for chargeback, a feature service providers will especially value. ■

Sources - Referenced in January 2022

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