

Brochure

Hitachi Storage Virtualization Operating System (SVOS)

*Superior Resilience, Data Management, and Intelligent Performance
for the Hitachi Virtual Storage Platform (VSP) Family*

 **Hitachi Vantara**

Delivering on today's business demands for real-time customer engagement and increased operational efficiency requires more than fast data storage. What is needed is an advanced approach to data management services that combines speed, simplicity, and adaptability with always-on availability and hybrid cloud integration to control overall data storage costs.



Simplify and Virtualize Storage Operations for Superior ROI

Hitachi Storage Virtualization Operating System (SVOS) powers our Hitachi Virtual Storage Platform (VSP) family, enabling organizations to engage customers faster, deliver common data services, simplify storage management, and easily build hybrid cloud data solutions to enhance return on investment (ROI). IT leaders can also deliver best-in-class data security, cyber resiliency, and business continuity.

Adaptive inline data reduction increases storage efficiency while balancing data efficiency and application performance. Industry-leading storage virtualization enables SVOS to use third-party, all-flash and hybrid arrays as storage capacity, consolidating resources for a higher ROI and providing a high-speed, virtualized front end to slower, less predictable storage arrays.

Low Latency Data Access and Advanced Flash Availability

SVOS is continually enhanced to deliver scalable, sub-millisecond storage performance. VSP systems built on SVOS deliver up to tens of millions of IOPS and are recognized worldwide for superior flash performance building upon a legendary storage heritage of availability, performance, and resiliency. SVOS improves low latency throughput even as data scales to multiple petabytes and accelerates the transition to modern, all-flash data storage.

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The architecture proposed by Hitachi Vantara and deployed by BRB has set the benchmark in the Brazilian IT market due to its reliability and the peace of mind it provides in terms of availability and performance for the computing environment.”

Braulio Lourenço da Silva Junior
Infrastructure and Storage Platform Manager
Banco De Brasília (BRB)

[Read the Case Study →](#)

Leverage One Data Platform to Boost Data Efficiency and Agility

Improve Flash Performance

SVOS optimizes NVMe, SCM, and SAS flash to deliver optimized performance for the VSP, reducing application latency to as low as 70 microseconds. Quality of service (QoS) controls ensure application workloads have predictable read/write performance for better user experiences.

Increase IOPS with Hitachi Vantara's enhanced flash-aware I/O stack and patented express I/O algorithms. Lower storage latency by streamlining write operations with Hitachi Vantara's Direct Command Transfer (DCT).

Agile, User-Selectable Adaptive Inline Data Reduction

SVOS adaptive data reduction technologies, including deduplication and compression, increase effective data capacity by up to 4:1. Factor in snapshots and thin provisioning to realize data reduction of up to 7:1 or more, depending on workloads and datasets. Turn data reduction off for specific workloads to protect and enable superior performance.

Higher effective data capacity helps you to maximize your flash storage investment.

Accelerate Cloud and DevOps Adoption

SVOS supports CSI (Container Storage Interface) compliant orchestrators like Kubernetes and Docker SWARM, as well as OpenStack, and it integrates tightly with Microsoft Hyper-V and VMware. With its plug-in connectivity to containers and OpenStack, SVOS enables DevOps environments and allows you to provision persistent storage and create space-efficient clones. In addition, the Hitachi Storage Plug-In for Containers is available for free download as a CSI-compliant driver, providing persistent storage for containerized applications.

Consolidate more DevOps data workloads and quickly build cloud solutions for greater agility.

Secure Ransomware Protection and Business Continuity for Superior Uptime

Utilizing a shared set of data protection and security practices for secure locking of critical data volumes contributes to ongoing cyber resiliency efforts. Hitachi Vantara's global-active device (GAD) feature enables active-active storage clusters for

high-availability, mission-critical deployments. Complementary data replication solutions provide for rapid data recovery with synchronous and asynchronous options, providing zero recovery point objective (RPO) and near-zero recovery time objective (RTO) capabilities across two locations. A third location can be added with the Hitachi Universal Replicator software. RAS (Reliability, Availability, and Serviceability) functions help to monitor and ensure the health of Hitachi VSP systems and virtualized attached storage.

Speed operational recovery with space-efficient, secure snapshots and drive more value from backup data by creating clones of snapshots for low-cost development.

AIOps Management and Observability

Hitachi Ops Center enables AIOps driven management of SVOS storage resources. Ops Center Administrator's wizard-driven graphical user interface (GUI) with integrated performance and health status dashboard simplifies administrative tasks to easily manage and maintain VSP storage systems. Extend flexible management options with embedded platform management tools to enable basic platform administration by anyone, as well as automated management operations with easy access to REST-based APIs for customized workflow orchestration.

Centrally manage multiple VSP storage systems easily with Ops Center or individually with embedded management tools and gain an at-a-glance summary of storage system health and capacity utilization with Clear Sight cloud-based observability portal.

Smart, Automated Dynamic Tiering

Hitachi Dynamic Tiering (HDT) is part of the SVOS operating system, and it leverages AI to ensure predictable and performant storage service levels. HDT supports three storage tiers and dynamically moves data to the most appropriate tier based on pre-determined service levels. For example, the VSP 5000 series supports SCM, NVMe, and SAS flash, as well as hard disk drives (HDD). The fastest tier may be configured with all NVMe, all SCM, or a mixture of NVMe and SCM to deliver the lowest latency and cost per IOP.

Deliver the best performant data services and optimized storage resources.

SVOS Features

- Enterprise-class: Designed for the optimized data services needs of mission-critical business applications.
- Optimized for SCM, NVMe, and SAS flash: Enables media intermix in the VSP 5000 and VSP E series.
- Optimized integration: Works with the entire Hitachi VSP family.
- Advanced efficiency: Provides user-selectable data reduction for VSP 5000 and VSP E series.
- DevOps friendly: Supports containers and OpenStack.
- Cloud-enabled agility: Connects to public, private, and hybrid clouds.
- Industry-leading, third-party array storage virtualization: Enable common data services and extend the life of previous storage investments while simplifying data management.

Choose the Right Solution

Integrated Software Solutions

SVOS integrates with the respective Hitachi VSP bundled software packages to deliver superior availability, resiliency, and operational efficiency. You gain data-at-rest encryption, active-active clustering, operational insights via machine learning, policy-defined data protection, ransomware protection, and local and remote replication for disaster recovery and business continuity.

Quickly allocate data resources for maximum efficiency using Hitachi SVOS, bundled VSP software packages, and Hitachi Ops Center management suite.

Services and Training

Hitachi Vantara Global Services offers market-leading storage consultants, proven methodologies, and a comprehensive portfolio of services to help you optimize and align storage to business requirements. Our assessment, planning, design, installation, management, and support services maximize the value of the Hitachi Storage Virtualization Operating System and the VSP platform family.



Choose Hitachi for Enterprise-Level Storage Resiliency and Performance

Hitachi Vantara has leveraged our industry-leading experience to enhance SVOS. Powering the Hitachi Virtual Storage Platform family, SVOS supports best-in-class business continuity and application availability with a 100% Data Availability Guarantee. Rely on SVOS to deliver common data services, enable modern hybrid cloud infrastructure, optimize flash performance, simplify storage operations, and improve storage ROI.



100% data availability. Guaranteed.



Superior quality of service.



Balanced data efficiency and storage performance.

Discover what Hitachi Storage Virtualization Operating System solutions can do to simplify your data storage operations and lower costs.

[Learn more →](#)

About Hitachi Vantara

Hitachi Vantara is transforming the way data fuels innovation. A wholly owned subsidiary of Hitachi, Ltd., we're the data foundation the world's leading innovators rely on. Through data storage, infrastructure systems, cloud management and digital expertise, we build the foundation for sustainable business growth.



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