

Hitachi Storage Virtualization Operating System RF

Superior Resilience, and
Intelligent Performance for
VSP Storage Systems

OVERVIEW

Delivering on business demands for real-time customer engagement and increased operational efficiency requires more than a fast storage platform with data reduction functionality. What is needed is an advanced approach to data management that combines speed and simplicity with always-on availability and advanced cloud integration to control overall data center costs.





Simplify Storage Operations, Leverage the Cloud for Superior ROI

Hitachi has enhanced our Hitachi Storage Virtualization Operating System RF (SVOS RF), which powers our award-winning Hitachi Virtual Storage Platform (VSP) family. With SVOS RF, organizations can engage customers faster, simplify storage management and build private or hybrid cloud solutions to enhance return on investment (ROI). IT leaders can also deliver best-in-class business continuity and data availability.

Flash performance is optimized with a patented flash-aware I/O stack, which accelerates data access. Adaptive inline data reduction increases storage efficiency while enabling a balance of data efficiency and application performance. Industry-leading storage virtualization allows SVOS RF to use third-party all-flash and hybrid arrays as storage capacity, consolidating resources for a higher ROI and providing a high-speed front end to slower, less-predictable arrays.

Low Latency Data Access and Advanced Flash Availability

Since its initial delivery, SVOS RF has been continually enhanced to deliver scalable, sub-microsecond performance. The result is that VSP systems built on SVOS RF deliver up to 21 million IOPS and are recognized worldwide for superior flash performance. SVOS RF is the latest version and builds upon the legendary SVOS heritage of availability and performance. The flash I/O stack has been upgraded to improve low latency throughput even as data scales to multiple petabytes, and accelerates the transition to a modern, all-flash data center.

“

We gained a future-proof solution from Hitachi for supporting excellent digital patient care and critical hospital applications.

”

Roman Haselsberger
IT Manager
Kufstein District Hospital

[Read the case study](#)

Leverage Multicloud Solutions To Boost Efficiency and Agility

Improved Flash Performance

SVOS RF optimizes NVMe, SCM, and SAS flash to deliver optimized performance in the VSP 5000 series, VSP E series and VSP F series. Reduce application latency to as low as 70 microseconds. Quality of service controls make sure workloads have predictable performance for better user experiences.

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

Agile, User-Selectable Adaptive Inline Data Reduction

SVOS RF deduplication and compression reduce capacity requirements up to 4:1. Factor in snapshots and thin provisioning to realize efficiency of up to 7:1 or more. Note that savings will vary based on the workload and dataset. Turn data reduction off for specific workloads to protect and enable superior performance.

More usable storage helps you to maximize your flash investment.

Accelerate Cloud and DevOps Adoption

SVOS RF 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, it enables DevOps 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 2.0 compliant driver, which provides persistent storage for containerized applications.

Consolidate more workloads and build cloud solutions for greater agility.

Business Continuity and Superior Uptime

Optional replication solutions provide rapid recovery. [Global-active device](#) enables active-active storage clusters. Synchronous and asynchronous replication provide zero recovery point objective (RPO) and near-zero recovery time objective (RTO) capabilities across two locations, up to 500 kilometers apart; a third location can be added with Hitachi Universal Replicator. And RAS (reliability, availability and serviceability) functions monitor the health of SVOS RF and attached storage.

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

Simple Management and Monitoring

[Hitachi Ops Center Administrator](#) manages SVOS RF resources. The wizard-driven graphical user interface (GUI) allows anyone to manage, monitor and maintain VSP systems via a status dashboard. REST-based APIs extend operations.

Administer multiple systems easily with an at-a-glance summary of storage system health and capacity provided by status dashboard.

Smart, Automated Tiering with Hitachi Dynamic Tiering

Hitachi Dynamic Tiering (HDT) is part of the SVOS RF operating system, and it leverages AI to assure predictable and performant service levels. HDT support 3 tiers of storage, and dynamically moves data to the most appropriate tier based on pre-determined service levels. For example, the VSP 5000 series storage systems support SCM/NVMe/SAS flash as well as hard disk drives (HDD). The fastest tier (Tier 1) may be configured with all NVMe, all SCM or a mixture of both NVMe and SCM to deliver the lowest latency and cost per IOP.

Deliver the best service and optimize storage.

Choose the Right Solution

Optional Software Solutions

SVOS RF integrates with Hitachi's Foundation and Advanced software packages to deliver superior availability and operational efficiency. You gain data-at-rest encryption, active-active clustering, insights via machine learning, and policy-defined data protection with local and remote replication.

Quickly allocate IT resources for maximum efficiency using [Hitachi Ops Center](#).

Software Packages

The [Foundation software package](#) comes standard on all VSP 5000 series, VSP E series, VSP F series and VSP G series systems and delivers software to simplify management and protection of your data. It also includes best-class analytics software to improve uptime and ROI of IT operations. Upgrade to the [Advanced software package](#) when business continuity is critical or you need to automate delivery of IT resources in less time, so you can focus on innovating faster.

Then, choose Hitachi services and training, as needed by your organization, to make Foundation or Advanced packages for your SVOS RF solution business ready.

Services and Training

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

SVOS RF Features

- Enterprise-class: Designed for mission-critical applications.
- Optimized for SCM, NVMe and SAS flash: Enables media intermix in the VSP 5000 series.
- Optimized integration: Works with [Hitachi's VSP 5000 series](#), [VSP E series](#), [VSP F series](#) and [VSP G series all-flash arrays](#).
- Advanced efficiency: Provides user-selectable data reduction.
- DevOps and cloud friendly: Supports containers and OpenStack.
- Cloud-enabled agility: Connects to public or private cloud.
- Industry-leading, third-party array virtualization: Virtualize third-party arrays with SVOS RF to extend the life of storage investments and simplify management.

Choose Hitachi for Enterprise-Level Resiliency and Performance

Hitachi Vantara has leveraged our industry-leading experience to enhance our Hitachi Storage Virtualization Operating System RF. Powering Hitachi Virtual Storage Platform family systems, SVOS RF supports best-in-class business continuity and application availability. Employ SVOS RF to speed customer interactions while leveraging the cloud and simplifying storage operations for improved ROI.

- [100% data availability, guaranteed.](#)
- Superior quality of service.
- Balanced data efficiency and flash performance.

[Discover](#) what Hitachi Vantara's intelligent data center management software solutions can do to simplify operations and lower data center costs.



We Are Hitachi Vantara

We guide our customers from what's now to what's next by solving their digital challenges. Working alongside each customer, we apply our unmatched industrial and digital capabilities to their data and applications to benefit both business and society.

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