

Accelerate innovation with three times more all-flash performance, backed by a 100% data availability guarantee.

## DATA SHEET

# Hitachi Virtual Storage Platform F Series All-Flash Midrange Cloud Solutions

## Modernize Your Data Center With an Agile All-Flash Infrastructure

Businesses are aware of the benefits of adopting all-flash cloud solutions to accelerate their applications, but they are also under increasing pressure to return business value. Consolidation of workloads with minimal investment is the aim, providing huge performance in the smallest footprint possible while extracting business insights. At the same time, it is critical that these cloud solutions are simple to implement and use while delivering enterprise reliability and operational simplicity.

With the latest midrange all-flash arrays (AFAs) from Hitachi, we can help. The compact Hitachi Virtual Storage Platform F series (VSP F series) delivers data three times faster and offers a 100% data availability guarantee to ensure that you get the experiences you demand. It also gives you something few AFAs do: infrastructure-wide predictive analytics that constantly analyze for performance and downtime risks. Working with Hitachi Remote Ops monitoring system, VSP F series ensures that you receive the best services, to keep workloads running at the highest performance and uptime.

### Serious All-Flash Efficiency

When dealing with all-flash solutions, efficiency is a key element to managing data

center operations. You need to optimize both performance and capacity needs so you can consolidate more workloads on flash.

The benefits start with up to three times the performance and 25% lower latency than our previous midrange all-flash models, even as data scales to petabytes. Using a new memory architecture and I/O algorithms, midrange VSP F series delivers up to 1.2 million IOPs at a better \$/IOPS efficiency. Pairing these advancements with built-in quality of service (QoS), which controls workload-specific performance limits, lets you serve more high-performance workloads with a single array than ever before.

Hitachi Storage Virtualization Operating System RF (SVOS RF) adds improved data reduction, with deduplication and compression that minimizes storage footprint, enabling capacity savings of up to 5:1. Compression and deduplication services are selectable and can be activated for specific workloads, giving you maximum control over capacity efficiency and performance.

All VSP F models have a true symmetric active-active controller design, which reduces the cost and complexity of path management. Other AFAs only let one controller access data at a given time, but VSP F series accesses data volumes via host ports on any controller to prevent wasted capacity. VMware users can

activate the round-robin policy for better network utilization.

### Cloud Ready

Today's IT leaders need to consider how their storage can be used as a private cloud platform or leveraged as part of a hybrid cloud strategy. To support this goal, VSP F series offers OpenStack and containers integration. OpenStack Block Storage (Cinder) support allows you to build cloud infrastructures on top of the VSP F series. Container integration allows DevOps teams to accelerate cloud-native application development. Teams can provision storage in seconds, provide persistent data availability and use leading container orchestration platforms (Docker SWARM, Kubernetes) to control VSP resources.

### Modern Protection

To protect the lifeblood of your business, safeguard data and ensure positive experiences for your customers, Hitachi

### IT Economics

Hitachi Vantara all-flash cloud platforms lower costs by tailoring payments to help improve return on investment (ROI) and align with budgets. Our flexible offerings enable you to upgrade and refresh when you need to improve life-cycle management.

is backed by the industry's most comprehensive [100% data availability guarantee](#). Built on legendary Hitachi reliability, VSP F series offers complete system redundancy by leveraging hot-swappable components, nondisruptive updates and outstanding data protection. The VSP F series is the best choice for all-flash storage operations that need to stay up and running.

Systems are also backed by Hitachi Remote Ops remote monitoring and analytics features, bringing 28 years of recorded operations experience to proactively support your infrastructure. By looking at all performance and support detail from all our Remote Ops customers, we can predict when an issue might arise and proactively take action to mitigate downtime.

Each VSP F series system also offers a suite of data protection software and services that can provide application-aware protection from downtime and data loss. Hitachi Data Instance Director (HDID) software enables simple setup of data protection and enforces policies to make sure data is always protected. HDID is paired with snapshots to eliminate backup windows and accelerates recovery as well as replication for remote disaster recovery.

For organizations that need more, the VSP F series offers global-active device, to provide advanced metroclustering. Global-active device enables robust business-continuity solutions across multiple data centers. These solutions offer zero downtime and data loss protection and can be paired with VSP F series replication for leading-edge 3-data-center protection.

## AI-Optimized Operations

Managing and maintaining a data center infrastructure takes time and can leave few cycles available to architect tomorrow's solutions. To free up time for driving innovation, Hitachi offers operations software with artificial intelligence (AI) that monitors the infrastructure for you.

**TABLE 1. HITACHI VIRTUAL STORAGE PLATFORM F SERIES MIDRANGE SPECIFICATIONS**

	VSP F350	VSP F370
<b>Performance</b>	Up to 600K IOPS 9GB/s bandwidth	Up to 1.2M IOPS 12GB/s bandwidth
<b>Max. Flash Drives</b> Note: SSD = solid-state drives	192 SSD	288 SSD
<b>Max. Raw Capacity</b>	5.7PB	8.6PB
<b>Flash Packs</b>	4 x 30TB SSD, 4 x 15TB SSD, 4 x 7.6TB SSD, 4 x 3.8TB SSD, 4 x 1.9TB SSD, 4 x 480GB SSD	
<b>Host Interfaces</b> Note: FC = Fibre Channel	16 x FC: 16Gb/s, 32Gb/s 8 x iSCSI: 10Gb/s	
<b>Total Efficiency Guarantee Ratio*</b>	Up to 7:1	Up to 7:1
<b>RAID Supported**</b>	RAID-1, RAID-5, RAID-6	

\* The Total Efficiency Guarantee of up to 7:1 for the VSP F350 and VSP F370 models covers savings from data deduplication, compression, thin provisioning and snapshots.

\*\* RAID 1 selection mirrors blocks across two drives and then creates a striped set across multiple drive pairs. This is commonly referred to as RAID 1+0.

All VSP F series solutions include Hitachi Infrastructure Analytics Advisor (HIAA), AI-powered predictive analytics, "out of the box." HIAA constantly analyzes telemetry data across hypervisor, server operating system, network and storage to optimize performance and prevent outages. It does this by monitoring resources for performance anomalies or service level agreement misses at device and subcomponent levels. Optional performance and capacity forecasting lets you predict when new resources will be needed, enabling superior budget control.

## Simplify Modernization of Your Data Center

All VSP F series midrange systems come packaged with a rich set of value-added software, and new packaging makes it easier than ever to add advanced features. The foundation software package includes SVOS RF local replication services and data mobility for nondisruptive data migration. It

also includes HIAA and HDID software. The advanced package includes everything in the foundation package plus remote replication, metroclustering and automation software.

For additional agility, all VSP models can be unified with our Hitachi NAS Platform gateways for block and file workloads or Hitachi Content Platform for block and object workloads. Or, they can be part of a converged solution in our Hitachi Unified Compute Platform.

Think of a fully automated, end-to-end, all-flash cloud that has workload protection, predictive analytics, live multisite capability and agnostic workload automation. Integrated directly with your ticketing solution, this is a midrange game-changer!



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