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Inspire the Next

Accelerate innovation with up to two times more all-flash performance and artificial intelligence (AI) enabled operations, backed up by the industry's most comprehensive 100% data availability guarantee.

DATASHEET

Hitachi Virtual Storage Platform F Series All-Flash Enterprise Cloud Solutions

Modernize Your Data Center With an Agile All-Flash Infrastructure

As the number and types of workloads that enterprise data center teams support has increased, so have the demands on the underlying storage infrastructure.

It isn't enough for storage to be fast and efficient. It needs to be agile enough to support cloud initiatives, containerized workloads and even utility consumption models that reduce upfront costs. Storage also needs to be supported by analytics and automation tools that simplify operations and free staff to focus on architecting solutions that drive the company forward. Without these things, costs escalate, and operations do not run at peak efficiency.

With our latest enterprise all-flash arrays (AFAs), Hitachi can help. Our new line of Hitachi Virtual Storage Platform (VSP) F series enterprise systems are designed to run up to two times faster, consolidate more workloads and enable a cloud-first strategy for data center modernization. Our VSP F systems are backed with the industry's most comprehensive 100% data availability guarantee, superior data protection services and best-in-class cloud analytics that ensure data center operations keep running and customers are happy.

Enterprise Scale and Efficiency

As workloads increase and data levels grow, it is important for storage to deliver scalable performance, capacity and storage efficiency. Solutions that only focus on one of these items are unlikely to deliver long-term value and may result in you spending more on new arrays than expected.

To maximize return on investment (ROI) and deliver long-term scaling, Hitachi has redesigned our Storage Virtualization Operating System RF (SVOS RF) to add more value. A new memory architecture and flash-aware I/O algorithms enable up to two times more performance and 25% lower latency with up to 71% more IOPS being delivered per CPU core. These improvements enable sub-millisecond operations even under heavy load and enable a single VSP F series system to consolidate more workloads.

For capacity scaling, VSP F series systems grow to over 17PB of native flash capacity. They leverage enhanced SVOS RF adaptive data reduction, inline compression and deduplication to improve storage efficiency and extend effective capacity. SVOS RF has also been enhanced to support eight times more volumes and one million snapshots for greater virtual machine consolidation.

All VSP F series models have 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 systems access volumes via

host ports on any controller with minimal performance difference. VMware users can activate the round-robin policy for better network utilization.

For the most demanding environments, including mainframe environments, Hitachi VSP F1500 contains an improved, Hi-Star crossbar switch architecture that provides immediate processing power without wait time or interruption to maximize I/O throughput. It allows for a highly granular upgrade path, and for the addition of drives and chassis components as processing needs increase.

Modern Data Protection

To protect the lifeblood of your business, safeguard your data and ensure customer experiences, Hitachi storage 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.

IT Economics

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

Systems are also backed by Hi-Track Remote Monitoring system and its analytics capabilities, bringing 28 years of recorded experience to proactively support your infrastructure. By looking at all performance and support detail from all our Hi-Track customers, we can predict when an issue might arise and proactively take action to mitigate downtime.

Advanced metroclustering with global-active device is available to enable robust business-continuity solutions among multiple data centers. Global-active device offers zero downtime and data loss protection and can be paired with VSP F series asynchronous replication for true, enterprise-level, 3-data-center protection. SVOS RF has been enhanced to ensure performance stays high, even when data protection is running.

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 AI operations software that monitors the infrastructure for you.

All VSP F series solutions include Hitachi Infrastructure Analytics Advisor (HIAA) and AI-powered analytics "out of the box." Unlike other solutions that monitor only storage, HIAA provides real enterprise analytics, constantly analyzing telemetry data across hypervisor, server operating system, network and storage to optimize application performance and prevent extended outages. Optional built-in analytics enable budget planning and forecasting, delivering the best customer experience available. For companies where security is critical, HIAA can run on the premises only. This gives you superior insights without the need to send data off-site.

To simplify management and prevent errors that impact performance and uptime, the VSP F series can be paired with Hitachi Automation Director (HAD). HAD software orchestrates management of virtual machines (VMs), network zoning, storage and data protection to accelerate deployments. It also integrates with IT service management tools as well as HIAA and Hitachi Data Instance Director (HDID) to

TABLE 1. HITACHI VIRTUAL STORAGE PLATFORM F SERIES ENTERPRISE SPECIFICATIONS

	VSP F700	VSP F900	VSP F1500
Performance	Up to 1.4M IOPS 24GB/s bandwidth	Up to 2.4M IOPS 41GB/s bandwidth	Up to 4.8M IOPS 48GB/s bandwidth
Max. Flash Drives Note: FMD = flash modules, SSD = solid-state drives	432 FMD 864 SSD	576 FMD 1,152 SSD	576 FMD 2,304 SSD
Max. Raw Capacity	6.0PB FMD 13.0PB SSD	8.1PB FMD 17.3PB SSD	8.1PB FMD 34.6PB SSD
Flash Packs	4 x 14TB FMD 4 x 7TB FMD 4 x 3.5TB FMD 4 x 15TB SSD 4 x 7.6TB SSD 4 x 3.8TB SSD 4 x 1.9TB SSD 4 x 480GB SSD	4 x 14TB FMD 4 x 7TB FMD 4 x 3.5TB FMD 4 x 15TB SSD 4 x 7.6TB SSD 4 x 3.8TB SSD 4 x 1.9TB SSD	4 x 14TB FMD 4 x 7TB FMD 4 x 15TB SSD 4 x 7.6TB SSD 4 x 3.8TB SSD 4 x 1.9TB SSD
Host Interfaces Note: FC = Fibre Channel, FCoE = Fibre Channel over Ethernet, FICON = IBM® FICON®	48x FC: 16Gb/s, 32Gb/s 24x iSCSI: 10Gb/s	64x FC*: 16Gb/s, 32Gb/s 32x iSCSI*: 10Gb/s	176x FC: 8Gb/s, 16Gb/s 176x FICON: 8Gb/s, 16Gb/s 176x FCoE: 10Gb/s, 88x iSCSI
Total Efficiency Guarantee Ratio**	Up to 7:1	Up to 7:1	2:1 Data Reduction
RAID Supported	RAID-1, RAID-5, RAID-6		

*Max I/O ports achieved by using an expansion tray
** The Total Efficiency Guarantee of up to 7:1 for the VSP F700 and VSP F900 models covers savings from data deduplication, compression, thin provisioning and snapshots. The VSP F1500 model is eligible for a Data Reduction Guarantee of 2:1 for capacity stored on Hitachi flash modules with data compression enabled.

simplify change management beyond what other vendors offer.

Simplify Modernization of Your Data Center

VSP F series enterprise 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 and data mobility for nondisruptive data migration. It also includes HIAA and HDID software for enterprise protection. The Advanced package

VSP Software Packages Datasheet
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includes everything in Foundation plus remote replication, metroclustering and HAD.

For additional agility, all VSP models can be combined with Hitachi NAS Platform gateways for file storage or Hitachi Content Platform for object storage. Or, they can be part of a converged solution 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. When integrated directly with a customer's ticketing solution, VSP F series systems are an enterprise game-changer!

Hitachi Vantara