Accelerate your transition to an all-flash data center and deliver a better experience for customers. Superior all-flash performance and resiliency combine with direct cloud connect for unparalleled value.

DATASHEET

Hitachi Virtual Storage Platform F Series

All Flash for Block, File and Mainframe

Businesses are under increasing pressure to stay relevant and succeed. To maintain customer interest and maximize revenue, businesses must transform their operations to be more efficient and deliver information faster. At the same time, it is critical that the infrastructure delivers enterprise reliability and operational simplicity.

All-flash arrays (AFAs) can help, delivering data faster to improve customer experiences, but few AFAs support the broad range of workloads businesses run or deliver the advanced capabilities required to keep IT operations running at maximum efficiency. With Hitachi Virtual Storage Platform (VSP) F series, you no longer have to compromise.

All-Flash Speed for More Workloads

Powered by Hitachi Storage Virtualization Operating System (SVOS), the VSP F series delivers more than four million IOPS of all-flash performance. High-speed data transfers are accomplished using an enhanced, flash-aware I/O stack. This stack leverages flash-specific data processing and priority data handling to reduce system latency as well as potential latency from background flash-media management. This approach is combined with new flash virtual memory scaling, which offloads tasks from SVOS to flash module drives (FMDs). Together, these features

enable more of your transactions to be executed with sub-millisecond response.

SVOS also includes new quality of service (QoS) functionality designed to ensure consistent performance over time and prevent latency spikes that could be caused by other workloads on the VSP F series. QoS is adaptive, activating when needed so that you get maximum leverage of system performance.

To accelerate the move to all-flash and minimize the need to leave workloads trapped on disk storage, the VSP F series is unified, consolidating block and file workloads. For mainframe customers, the VSP F series has been expanded: The new VSP F1500 delivers IBM® tested and compatible mainframe support so businesses have a single architecture for serving applications.

Best-in-Class Efficiency

Efficiency is another key element to moving data center operations to all flash. By controlling storage consumption and overall data center costs, organizations can move more of their workloads to flash today. To support that move, the VSP F series delivers a broad range of efficiency technologies designed to maximize the value from your investments. Adaptive data reduction services, including deduplication and compression, minimize storage footprint, enabling savings of 5:1 or greater. These can be combined with our direct cloud connect functionality to transparently move file data to your choice of content repository or cloud service (Hitachi Content Platform,

Amazon Web Services or Microsoft® Azure®). This capability enables unparalleled reduction in on-site storage costs and more predictable ongoing storage costs. All services are selectable and can be activated for specific workloads, giving you maximum control over efficiency and performance.

VSP F series also offers linked, writable snapshot clones: thousands of copies of data sets that are created very rapidly while using near-zero extra capacity. Clones can be used to test new business ideas or application versions. They can also be "broken off" and used as new data stores if you want to move them into production. For highly virtualized environments, the ability to create a standard "gold image" for use across virtual machines and desktops not only saves money, but it also reduces support and management costs.

100% Data Availability

Built on legendary Hitachi reliability, VSP F series offers complete system redundancy and is backed by the industry's only 100% data availability guarantee. 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. Each VSP F series system includes a suite of data protection software that eliminates backup windows and accelerates recovery via snapshots. System configuration is handled with a simple, easy-to-use policy management and workflow solution.

Advanced data replication software is available to enable robust business-continuity solutions among multiple data centers. These solutions include active-active metro clustering with global-active device. Available across the VSP F series for both block and file workloads, global-active device ensures the highest data protection service level. IT teams can use it to deliver zero downtime with no data loss.

Simple, Powerful Management

VSP F series systems can be set up quickly and managed at a glance using Hitachi Storage Advisor (HSA). Designed for IT generalists, HSA uses an intuitive graphical user interface (GUI) and recommended configuration practices to dramatically reduce the time to complete provisioning tasks as well as any diagnostic operations.

For organizations that have their own management toolset, HSA includes standards-based application program interfaces (APIs) that centralize administrative operations on a preferred management application.

Delivering all-flash performance requires more than a fast array. It requires an optimized ecosystem. HDS understands this and offers scalable storage analytics via Hitachi Infrastructure Analytics Advisor (HIAA). HIAA looks across servers, VMs, network and storage resources to optimize performance as well as long-term storage utilization. Standard reports provide quick views of the current operating environment and custom reporting capabilities let you modify them to your specific needs. You can quickly identify flash performance trends and optimize resources for improved application performance.

Choose the Right All-Flash for You CHECKLIST

Guaranteed Return

With the VSP F series, HDS guarantees:

- 100% data availability.
- Double the data reduction.

This new guarantee program allows you to have ongoing confidence in the value of your VSP F series investment.

TABLE 1. HITACHI VIRTUAL STORAGE PLATFORM F SERIES SPECIFICATIONS

	VSP F400	VSP F600	VSP F800	VSP F1500
Performance	Up to 600,000 IOPS 11GB/sec bandwidth*	Up to 800,000 IOPS 12GB/s bandwidth*	Up to 1,400,000 IOPS 24GB/s bandwidth*	Up to 4,800,000 IOPS 48GB/s bandwidth*
Cache	128GB	256GB	512GB	2048GB
Connectivity (Maximum)	32 Fibre Channel (FC) 8Gb/s, 32 FC 16Gb/s, 32 FC 32Gb/s, 16 iSCSI 10Gb/s, 16 iSCSI 10GBase-T	32 FC 8Gb/s, 32 FC 16Gb/s, 32 FC 32Gb/s, 16 iSCSI 10Gb/s, 16 iSCSI 10GBase-T	With additional I/O module: 64 FC 8Gb/s, 64 FC 16Gb/s, 48 FC 32Gb/s, 32 iSCSI 10Gb/s, 32 iSCSI 10GBase-T	128 FC 8Gb/s or 16Gb/s or 32Gb/s, 128 IBM® FICON® 8Gb/s or 16Gb/s, 128 FCoE 10Gb/s, 88 iSCSI 10GBase-T
Configurations	Base model with a minimum of 4 flash modules			
Capacity Range**	From 7TB to 2.68PB raw flash capacity, up to 13PB effective flash capacity	From 7TB to 4PB raw flash capacity, up to 20PB effective flash capacity	From 7TB to 8PB raw flash capacity, up to 40PB effective flash capacity	From 28TB to 8PB raw flash capacity, up to 40PB effective flash capacity
Expansion Paths	Add 4 or 8 flash modules at a time up to model limits			
Max. Flash Modules	192	288	576	576
Average Data Reduction Ratio ***	5:1			
High Availability	Active-active N+1 architecture. 100% data availability guarantee. Active mirroring option for 100% data accessibility.			
Application Integration	VMware vSphere and vRealize; Microsoft® Hyper-V®, System Center and SQL Server®; OpenStack; Oracle Enterprise Manager and Recovery Manager; SAP HANA; Hitachi; Microsoft and Amazon cloud environments.			
Foundation Software	Hitachi Storage Virtualization Operating System SVOS (Storage Virtualization Operating System), Management console, snapshots and clones, analytics, data deduplication and compression, multipathing, thin provisioning, storage virtualization, secure multitenancy, quality of service controls, system utilities, nondisruptive migration (VSP F400, F600, F800 only)			
Advanced Software	Cloud tiering, active-active cluster, provisioning automation, remote replication, remote replication extended, mainframe (for VSP F1500 only)			
Added Value	100% Data Availability Guarantee			

* Based on specific workload. Latency may vary based on other factors in the environment.

** All capacities are expressed in Base 10: 1MB = 1,000,000 bytes.

*** Average data reduction ratios are based on capacity savings from data deduplication and data compression. Actual data reduction ratios can vary and depend on individual environments and data structures.