

Accelerate your business operations and deliver a better experience for customers. Superior flash performance and resiliency combine with direct cloud connect for unparalleled value.

**DATASHEET**

## Hitachi Virtual Storage Platform G Series

### Hybrid 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.

Hybrid flash arrays (HFAs) can help, delivering data faster to improve customer experiences. However, few HFAs 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) G series, you no longer have to compromise (see Table 1).

### Hybrid Flash Speed for More Workloads

Powered by Hitachi Storage Virtualization Operating System (SVOS), the VSP G series delivers up to 4.8 million IOPS of flash performance. Scalability is delivered through advanced, active-flash tiering that analyzes data streams in real time and moves data from disk to flash for rapid access by applications. This enhanced tiering allows organizations to meet demanding service level agreements (SLAs) for performance with a cost-effective mix of flash and disk.

To ensure consistent performance over time and prevent latency spikes that could be caused by other workloads on the

VSP G series, SVOS offers powerful quality of service (QoS) functionality. QoS is adaptive, activating when needed so that you get maximum leverage of system performance.

### Unified Storage, Global Storage Virtualization

VSP G series supports both block and file workloads for greater consolidation and operational simplicity. File modules are designed with a hardware-accelerated architecture, using field-programmable gate arrays (FPGA) for high-performance file services. Individual file systems belong to a Hitachi Enterprise Virtual Server for NAS, and each server has its own set of IP addresses, policies and individual port assignments.

VSP G series also delivers global storage virtualization. Over 100 different array models can be used to extend VSP G series capacity. Manage it all from a single instance.

### Best-in-Class Efficiency

VSP G series enables the seamless move to a flash-based data center with a broad range of efficiency technologies that deliver maximum value and more predictable ongoing costs. Adaptive data reduction services, including deduplication and compression, minimize storage footprint, enabling savings of 5:1 or greater. Combine these 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). You gain 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 G series offers linked, writable snapshot clones. With linked clones, thousands — even millions — of copies of data sets are created very rapidly while using near-zero extra capacity. For highly virtualized environments, the ability to create a standard “gold image” that can be used across virtual machines and desktops not only saves money, but also reduces support and management costs.

### 100% Data Availability, Guaranteed

Built on legendary Hitachi reliability, VSP G series offers complete system redundancy and is backed by the industry's only 100% data availability guarantee. With nondisruptive updates, hot-swappable components and outstanding data protection, VSP G series is the best choice to ensure continuous hybrid flash storage operations.

Advanced data replication software enables robust business-continuity solutions among multiple data centers. This includes active-active metro clustering with global-active device. This feature is available across the VSP G series for both block and file workloads, to ensure continuous operations with nonstop data access. With global-active device, IT teams can meet their disaster recovery objectives with dramatically reduced return-to-operations time.

## Simple, Powerful Management

Set up VSP G series quickly and manage it 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 reduce the time to complete provisioning tasks as well as any diagnostic operations.

Software Options

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Powerful functionality comes bundled with the Foundation software package, which includes HSA, local replication, analytics, data mobility, nondisruptive migration and SVOS. The Advanced software package includes everything in the Foundation package plus remote replication, automation and global-active device, to support more demanding service level agreement requirements.

## IBM® Mainframe Compatibility

SVOS features compatibility with parallel access volumes (PAV), HyperPAV, dynamic volume expansion (DVE), extended address volumes (EAV), peer-to-peer remote copy (PPRC), and IBM high-performance FICON® with multitrack, FICON forward error correction, plus basic and IBM GDPS® HyperSwap®, IBM XRC, IBM FlashCopy®, IBM space-efficient FlashCopy, IBM zHyperWrite™ and IBM zHPF Extended Distance II.

## Optimized Virtualized Server Infrastructure

Hitachi Vantara offers plugins and adapters that enhance virtual server infrastructure performance and administrator productivity. SVOS integrates VMware and Microsoft Windows 2012 applications that offload storage-intensive tasks from hosts to increase virtual machine density, improve performance and reduce workload contention.

TABLE 1. HITACHI VIRTUAL STORAGE PLATFORM G SERIES SPECIFICATIONS

	VSP G200	VSP G400	VSP G600	VSP G800	VSP G1500
<b>Performance</b>	Up to 350,000 IOPS	Up to 600,000 IOPS	Up to 800,000 IOPS	Up to 1,400,000 IOPS	Up to 4,800,000 IOPS
<b>Maximum (Max.) Raw Internal Capacity</b>	2,467TB	4,699TB	7,049TB	14,098TB	6,767TB
<b>Max. Raw External Capacity</b>	8PB	16PB		64PB	255PB
<b>Solid State Drive Options Small Form Factor (SFF)</b>	480GB, 960GB, 1.9TB, 3.8TB			960GB 1.9TB 3.8TB	960GB 1.9TB 3.8TB
<b>Flash Module Capacity Options</b>	3.5TB, 7TB, 14TB				
<b>SFF Hard Disk Drive Options</b>	<b>15K RPM:</b> 300GB, 600GB <b>10K RPM:</b> 600GB, 1.2TB, 1.8TB, 2.4TB				<b>15K RPM:</b> 600GB, <b>10K RPM:</b> 600GB, 1.2TB, 1.8TB, 2.4TB
<b>Large Form Factor (LFF) Hard Disk Drives Options</b>	<b>7.2K RPM:</b> 4TB, 6TB, 10TB				<b>7.2K RPM:</b> 4TB, 6TB
<b>Max. Drives</b>	264 SFF 252 LFF 264 SSD 84 FMD	480 SFF 480 LFF 480 SSD 192 FMD	720 SFF 720 LFF 720 SSD 288 FMD	1,440 SFF 1,440 LFF 1,440 SSD 576 FMD	2,304 SFF 1,152 LFF 2,304 SSD 576 FMD
<b>Host Interface Ports (without drives)</b> Note: FC = Fibre Channel FCoE = Fibre Channel over Ethernet FICON = IBM® FICON®	16 FC: 8Gb/s 16Gb/s 32Gb/s  8 iSCSI: 10Gb/s 10GBase-T	64 FC: 8Gb/s 16Gb/s 32Gb/s  32 iSCSI: 10Gb/s 10GBase-T		80 FC: 8Gb/s 16Gb/s 32Gb/s  40 iSCSI: 10Gb/s 10GBase-T	192 FC: 8Gb/s 16Gb/s  176 FICON: 8Gb/s 16Gb/s/192 FCoE: 10Gb/s 96 iSCSI: 10GBase-T
<b>Max. Cache</b>	64GB	128GB	256GB	512GB	2,048GB
<b>RAID Supported</b>	RAID-1+0, RAID-5, RAID-6				
<b>Internal NAS Modules Options</b>	Not available	VSP G400, VSP G600 and VSP G800 can be ordered with two internal NAS modules. Each NAS module has 6 x 10GbE ports for a total of 12 x 10GbE per system.			Not available
<b>NAS Module Main Memory Board</b>	Not available	96GB (8GB NVRAM)			Not available
<b>File System Size</b>	1PB pool, single namespace up to maximum capacity				
<b>Max. File Systems</b>	500				
<b>Max. Files per Directory</b>	16M				
<b>Max. NAS Snapshots</b>	1,024 per file system				
<b>Max. Hitachi Enterprise Virtual Servers for NAS</b>	64				
<b>Max. IP Addresses per Enterprise Virtual Servers</b>	32				
<b>Protocols</b>	NFS, SMB, FTP, iSCSI and HTTP to the cloud				

\* Based on specific workload.

Note: 1GB equals 109 bytes or 1,000,000,000 bytes and 1TB = 1012 bytes.

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