HITACHI
Inspire the Next

In a world where microseconds matter, Hitachi Virtual Storage Platform (VSP) E990 supercharges performance for business applications, while also meeting data efficiency needs with a simple-to-manage platform.

DATA SHEET

Hitachi Virtual Storage Platform E990: All-Flash NVMe Speed and Efficiency

We Deliver Trusted Capabilities That Won't Break the Bank

With Hitachi Virtual Storage Platform E990 and the rest of our midrange storage family, we provide agile and automated data center technology. These systems enable you to cost-effectively meet your users' current digital expectations and give them the ability to address future challenges as application data needs and service levels evolve. With time-tested, proven availability and scalability, we deliver infrastructure solutions that help you maximize your data center advantage.

Give your growing business the performance that large enterprises rely on to satisfy the demands of real-time, data-hungry applications. VSP E990's NVMe architecture delivers consistent, industry-leading, low-microsecond latency, reduces the transaction costs of latency-critical applications and delivers predictable performance to optimize storage resources.

Use analytics based on Hitachi Ops Center to properly analyze your operating environment to highlight your most demanding workloads for critical applications, such as online transaction processing databases, virtual desktop infrastructure (VDI) or artificial intelligence (AI) based analytics. These tasks can best leverage the low latency benefits of VSP E990 with NVMe, while improving your data management productivity and driving down infrastructure costs.

Take advantage of the advanced capabilities in the VSP E990 across all of your data center storage assets through virtualization pioneered by Hitachi. Storage virtualization gives you a common management control point for multiple storage systems, which drives increased administrative efficiencies. Data services, like data reduction, automation and metroclustering, that are available with VSP E990 are extended to virtualized storage systems to give them more value and an extended life cycle.

Enterprise Agility

Building upon our successful portfolio of all-flash data solutions, the NVMe architecture of the VSP E990 is powered by the same Hitachi Storage Virtualization Operating System RF (SVOS RF) operating system that protects our largest customers. This means you can manage and replicate your data between SVOS RF systems and avoid creating silos of data.

VSP E990 scales up to 1.4PB of NVMe flash capacity and 5.79M IOPS of performance, allowing for massive consolidation of workloads, which leads to cost savings for you. Response times as low as 64 microseconds mean applications will run at speeds that will drive efficiencies throughout your business. (See Table 1.)

Hitachi Vantara has designed intelligence into our adaptive data reduction technology, which means that you can run data reduction with confidence with all your applications, even the ones that are the most performance hungry. With our proven data reduction capabilities, VSP E990 allows organizations to adopt all NVMe today and make effective use of our 4:1 sight-unseen effective capacity guarantee plus our 7:1 total efficiency guarantee.

Legendary Hitachi Resilience

VSP E990 builds on 57 years of Hitachi engineering experience, offering you a superior range of continuity options and the best reliability in the industry. We back this up with the industry's first and most comprehensive 100% data availability guarantee. You can trust your data with Hitachi. Excellence is in our DNA.

Proven. Powerful. Predictable.

Organizations trust Hitachi Vantara with their most important business asset: data. They know our storage solutions are fail-safe. Hitachi storage platforms are time tested, with proven performance, reliability and scalability.

Our active-active controller architecture protects your business against local faults and performance issues. Full metroclustering with our global-active device between data centers up to 500km apart gives you peace of mind. Make the most of your investments by replicating to a third data center using Hitachi Universal Replicator software, which offers bidirectional replication. Migrate data from older systems nondisruptively, so operations can continue, nonstop. All the while, you can monitor your system in the cloud via Hitachi Remote Ops, to proactively predict and prevent downtime.

What about your application's business continuity and recovery? VSP E990 is integrated with Hitachi Ops Center Protector, which provides application-aware snapshots, copy data management and instant recovery. Ops Center Protector even delivers continuity in the public cloud, so you can recover from a data disaster in seconds, not hours!

Artificial Intelligence, Real IT Impact

Simplifying the management, provisioning and performance of data platforms can become a demanding, never-ending cycle. Hitachi Ops Center delivers an AI-operations-based management suite for all Hitachi VSP systems and virtualized storage environments, using the latest AI and machine learning (ML) capabilities to improve IT operations. With integrated configuration, analytics, automation and data protection capabilities, Ops Center simplifies day-to-day administrative, optimization and management orchestration for VSP E990. Your staff can be freed to focus on innovation and tactical business efforts.

Hitachi Ops Center Analyzer uses ML to continuously monitor the entire data path, from virtual machine (VM) to storage, to ensure resources are meeting their required service level agreements (SLAs) for mission-critical applications. If bottleneck issues do arise, Ops Center Analyzer identifies, diagnoses and prescribes recommended changes to rapidly resolve the issue. The software also offers predictive analytics to streamline complex decision-making for better planning of future storage requirements or to optimize quality of service (QoS).

Management automation is a critical aspect of improving IT operational efficiency. Hitachi Ops Center Automator orchestrates the agile delivery of VSP E990 storage resources to enable a cloudlike, IT-resource delivery model. This approach provides rapid deployment of new infrastructure resources, based on best practices, and ensures consistent data resiliency policies. Hitachi Ops Center consolidates the number of management tools required to automate resource delivery, lower operating expenditure (opex) costs and deliver greater IT operational efficiencies for VSP E990 storage environments.

TABLE 1. HITACHI VIRTUAL STORAGE PLATFORM E990 – SPECIFICATIONS

Capacity Specifications	
Max. Raw Internal Capacity	1.444PB (15TB NVMe SSD)
Total Efficiency Guarantee Ratio *	Up to 7:1
Data Reduction Guarantee Ratio	Up to 4:1 (sight unseen)
Max. Raw External Capacity	287PB
Max. Number of Flash Drives, Including Spares	96
Flash Drive Options	1.9TB 3.8TB 7.6TB 15TB
Max. Expansion Trays	4 (2U: 24 NVMe SSD)
Controller Tray Specifications	
Performance (IOPS)	5.8 million
Performance (Bandwidth)	30GB/s
Fibre Bandwidth to Host	204,800MB/s
Back-End Disk Interface and LInks	64 x NVMe
Max. Cache	1,024GiB
Max. Host Port Counts	80 x Fibre Channel, 40 x iSCSI
Host Interface Types	Fibre Channel: 32Gb/s Fibre Channel: 16Gb/s iSCSI: 10Gb/s
Height **Width** **Depth**	4U, 6.9" (175 mm) 19.0" (483 mm) 31.8" (809 mm)
Max. Weight	165 lbs (75 kg)
Internal Drive Slots	N/A
Controller Host I/O Expansion Tray Specifications	
Max. Quantity	1
Height **Width** **Depth**	2U, 3.5" (88 mm) 19" (483mm) 35.2" (892 mm)
Max. Weight	89 lbs (40 kg)

(continued on next page)

TABLE 1. HITACHI VIRTUAL STORAGE PLATFORM E990 – SPECIFICATIONS

Software Specifications	
Value-Added Bundled Features	100% Data Availability Guarantee, Adaptive Data Reduction, Storage Virtualization, In-System Replication, Copy Data Management, Infrastructure Analytics, Nondisruptive Migration, Total Efficiency Guarantee
RAID Supported**	RAID-6 (6D+2P, 12D+2P, 14D+2P) RAID-5 (3D+1P, 4D+1P, 6D+1P, 7D+1P) RAID-1 (2D+2D, 4D+4D)
Data-at-Rest Encryption	Available Q2CY20
Max. LUN Size	256TB
Max. Number of LUNs	65,280
Max. Number of Snapshots	1024 per LUN; (1,048,575 per system)
Max. Number of Hosts per Fibre Channel Port	255

Notes:
* The Total Efficiency Guarantee of up to 7:1 for the VSP E990 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.
1MB = 1,000,000 bytes, 1MiB = 1,048,576 bytes
NVMe = nonvolatile memory express, SSD = solid state disk, iSCSI = Internet Small Computer Systems Interface

Learn more about NVMe technology and how it delivers super charged response times for your business critical applications.

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.

Hitachi Vantara

Corporate Headquarters
2535 Augustine Drive
Santa Clara, CA 95054 USA
hitachivantara.com | community.hitachivantara.com

Contact Information
USA: 1-800-446-0744
Global: 1-858-547-4526
hitachivantara.com/contact

HITACHI is a trademark or registered trademark of Hitachi, Ltd. VSP is a trademark or registered trademark of Hitachi Vantara Corporation. All other trademarks, service marks, and company names are properties of their respective owners.

DS-593-A BTD April 2020