

Product Line Card

HITACHI VIRTUAL STORAGE PLATFORM FAMILY MATRIX

	Hitachi Virtual Storage Platform G200	Hitachi Virtual Storage Platform G400	Hitachi Virtual Storage Platform G600	Hitachi Virtual Storage Platform G800	Hitachi Virtual Storage Platform G1000
Capacity Specifications					
Maximum (Max.) Number of Hard Drives, Including Spares	264 SFF 252 LFF	480 SFF 480 LFF	720 SFF 720 LFF	1,440 SFF 1,440 LFF	2,304 SFF 1,152 LFF
Max. Number of Flash Drives, Including Spares	264 SSD 84 FMD	480 SSD 192 FMD	720 SSD 288 FMD	1,440 SSD 576 FMD	384 SSD 576 FMD
Raw Capacity	1,512TB (6TB 3.5") 475TB (1.8TB 2.5") 588TB (6.4TB FMD) 77TB (400GB 2.5" SSD)	2,880TB (6TB 3.5") 864TB (1.8TB 2.5") 1,344TB (6.4TB FMD) 154TB (400GB 2.5" SSD)	4,320TB (6TB 3.5") 1,296TB (1.8TB 2.5") 2,016TB (6.4TB FMD) 230TB (400GB 2.5" SSD)	8,640TB (6TB 3.5") 2,592TB (1.8TB 2.5") 4,032TB (6.4TB FMD) 461TB (400GB SSD)	6,912TB (6TB 3.5") 4,147TB (1.8TB 2.5") 4,032TB (6.4TB FMD) 302TB (800GB SSD)
Flash Drive Options	6.4TB FMD 3.2TB FMD 1.6TB FMD 400GB (2.5" MLC) 200GB (2.5" MLC)	6.4TB FMD 3.2TB FMD 1.6TB FMD 400GB (2.5" MLC) 200GB (2.5" MLC)	6.4TB FMD 3.2TB FMD 1.6TB FMD 400GB (2.5" MLC) 200GB (2.5" MLC)	6.4TB FMD 3.2TB FMD 1.6TB FMD 400GB (2.5" MLC) 200GB (2.5" MLC)	6.4TB FMD 3.2TB FMD 1.6TB FMD 800GB (2.5" MLC) 400GB (2.5" MLC)
SAS HDD Technology Options	6TB (3.5" 7.2K) 4TB (3.5" 7.2K) 1.8TB (2.5" 10K) 1.2TB (2.5" 10K) 600GB (2.5" 10K) 600GB (2.5" 15K) 300GB (2.5" 15K)	6TB (3.5" 7.2K) 4TB (3.5" 7.2K) 1.8TB (2.5" 10K) 1.2TB (2.5" 10K) 600GB (2.5" 10K) 600GB (2.5" 15K) 300GB (2.5" 15K)	6TB (3.5" 7.2K) 4TB (3.5" 7.2K) 1.8TB (2.5" 10K) 1.2TB (2.5" 10K) 600GB (2.5" 10K) 600GB (2.5" 15K) 300GB (2.5" 15K)	6TB (3.5" 7.2K) 4TB (3.5" 7.2K) 1.8TB (2.5" 10K) 1.2TB (2.5" 10K) 600GB (2.5" 10K) 600GB (2.5" 15K) 300GB (2.5" 15K)	6TB (3.5" 7.2K) 4TB (3.5" 7.2K) 1.8TB (2.5" 10K) 1.2TB (2.5" 10K) 900GB (2.5" 10K) 600GB (2.5" 10K) 600GB (2.5" 15K) 300GB (2.5" 15K)
Max. LFF (3.5") Disk Expansion Trays	7 (2U: 12 LFF) 4 (4U: 60 LFF/SFF)	16 (2U: 12 LFF) 8 (4U: 60 LFF/SFF)	24 (2U: 12 LFF) 12 (4U: 60 LFF/SFF)	48 (2U: 12 LFF) 24 (4U: 60 LFF/SFF)	12 (16U: 96 LFF)

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Capacity Specifications (continued)					
Max. SFF (2.5") Disk Expansion Trays	7 (2U: 24 SFF)	16 (2U: 24 SFF)	24 (2U: 24 SFF)	48 (2U: 24 SFF)	12 (16U: 192 SFF)
Max. Hitachi Accelerated Flash Expansion Trays	7 (2U: 12 FMD)	16 (2U: 12 FMD)	24 (2U: 12 FMD)	48 (2U: 12 FMD)	12 (8U: 48 FMD)
Block Module Specifications¹					
Height Width Depth	2U, 3.4" (86mm) 19" (446mm) 30" (760mm)	4U, 6.9" (175mm) 19" (446mm) 34" (865mm)	4U, 6.9" (175mm) 19" (446mm) 34" (865mm)	4U, 6.9" (175mm) 19" (446mm) 34.1" (866mm)	10U, 17.5" (445mm) 19" (480mm) 48.6" (1235mm)
Weight With Disks Installed	24 SFF disks: 126 lbs. (57kg) 12 LFF disks: 134.5 lbs. (61kg)	187.4 lbs. (85kg)	187.4 lbs. (85kg)	187.4 lbs. (85kg)	312 lbs. (142kg)
Internal Drive Slots	12 LFF or 24 SFF	0	0	0	0
Host Interface Types	FC: 8Gb/sec, 16Gb/sec iSCSI: 10Gb/sec	FC: 8Gb/sec, 16Gb/sec iSCSI: 10Gb/sec	FC: 8Gb/sec, 16Gb/sec iSCSI: 10Gb/sec	FC: 8Gb/sec, 16Gb/sec iSCSI: 10Gb/sec	FC: 8Gb/sec, 16 Gb/sec IBM® FICON®: 8Gb/sec, 16 Gb/sec FCoE: 10Gb/sec iSCSI: 10Gb/sec
Host Port Counts (Maximum without drives)	16 FC 8Gb/sec 8 FC 16Gb/sec 8 iSCSI 10Gb/sec 8 iSCSI 10GBase-T	64 FC 8Gb/sec 32 FC 16Gb/sec 32 iSCSI 10Gb/sec 32 iSCSI 10GBase-T	64 FC 8Gb/sec 32 FC 16Gb/sec 32 iSCSI 10Gb/sec 32 iSCSI 10GBase-T	80 FC 8Gb/sec 40 FC 16Gb/sec 40 iSCSI 10Gb/sec 40 iSCSI 10GBase-T	192 FC 176 FICON 176 FCoE 88 iSCSI
Fibre Bandwidth to Host	12,800MB/sec	32,000MB/sec	32,000MB/sec	51,200MB/sec	256,000 MB/sec
Back-End Disk Interface	12Gb/sec SAS	12Gb/sec SAS	12Gb/sec SAS	12Gb/sec SAS	6Gb/sec SAS



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Block Module Specifications (continued)

Bandwidth to Drives	12,000MB/sec; 12Gb/sec SAS links, 8 per system	24,000MB/sec; 12Gb/sec SAS links, 16 per system	24,000MB/sec; 12Gb/sec SAS links, 16 per system	96,000MB/sec; 12Gb/sec SAS links, 64 per system	128,000MB/sec; 8 back-end directors; 6Gb/sec SAS links, 128 total
Maximum Cache	64GB	128GB	256GB	512GB	2TB

File Module Specifications²

Recommended File Modules³	4040	4060	4060	4080	4100
Nodes per Cluster	1 - 2	1 - 4	1 - 4	1 - 4	1 - 8
Random I/O (Mixed loads)⁴	130,000	147,957	147,957	209,519	293,128
Height Width Depth	3U, 5.1" (130mm) 17.2" (437mm) 27" (685mm)	3U, 5.1" (130mm) 17.2" (437mm) 27" (685mm)	3U, 5.1" (130mm) 17.2" (437mm) 27" (685mm)	3U, 5.1" (130mm) 17.2" (437mm) 27" (685mm)	3U, 5.1" (130mm) 17.2" (437mm) 27" (685mm)
Weight	55 lbs. (25kg)	55 lbs. (25kg)	55 lbs. (25kg)	55 lbs. (25kg)	55 lbs. (25kg)
Main Board Memory	46GB (4GB NVRAM)	46GB (4GB NVRAM)	108GB (8GB NVRAM)	108GB (8GB NVRAM)	108GB (8GB NVRAM)
Number of VLANs	256	256	256	256	256
Protocols	NFS, SMB, FTP, HTTP, SSL, SNMP	NFS, SMB, FTP, HTTP, SSL, SNMP	NFS, SMB, FTP, HTTP, SSL, SNMP	NFS, SMB, FTP, HTTP, SSL, SNMP	NFS, SMB, FTP, HTTP, SSL, SNMP
10Gb/sec Client Ports	4	4	4	4	4

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Software Specifications					
RAID Supported	RAID-1+0, RAID-5, RAID-6	RAID-1+0, RAID-5, RAID-6	RAID-1+0, RAID-5, RAID-6	RAID-1+0, RAID-5, RAID-6	RAID-1+0, RAID-5, RAID-6
Max. Number of RAID Groups	84	240	240	480	575
Data-at-Rest Encryption	No	Yes	Yes	Yes	Yes
Max. LUN Size	256TB	256TB	256TB	256TB	256TB
Max. Number of LUNs	2,048	4,096	4,096	16,384	65,280
Max. Number of File Systems (single/cluster)	128/125	128/125	128/125	128/125	128/125
Max. Number of Enterprise Virtual Servers (EVS)	64	64	64	64	64
Max. File System Size	256TB	256TB	256TB	256TB	256TB
Max. Number of Entries per Directory	16M	16M	16M	16M	16M
Max. Number of Snapshots	1,024 per file system; 1,024 per LUN; 100,000 per system	1,024 per file system; 1,024 per LUN; 100,000 per system	1,024 per file system; 1,024 per LUN; 100,000 per system	1,024 per file system; 1,024 per LUN; 100,000 per system	1,024 per file system; 1,024 per LUN; 100,000 per system
Max. Number of Virtual Volumes	10,000	10,000	10,000	10,000	10,000
Max. Number of User or Group Quotas	100,000	100,000	100,000	100,000	100,000
Max. Number of Hosts per Fibre Channel Port	255	255	255	255	255

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Software Specifications (continued)					
Max. Number of IP Addresses per Cluster	256	256	256	256	256
Max. Number of IP Addresses per EVS	32	32	32	32	32
Number of Global Symlinks	10,000	10,000	10,000	10,000	10,000
Max. Number of CNS Links	500	500	500	500	500
Max. Number of SMB Shares	10,000	10,000	10,000	10,000	10,000
Max. Number NFS Exports	10,000	10,000	10,000	10,000	10,000
Max. Number of Concurrent NFS and/or SMB Clients	42,000	42,000	60,000	60,000	60,000
Max. Number of Concurrent FTP Clients	100	100	100	100	100
Max. Number of Concurrent Open Files: SMB	126,000	126,000	253,000	253,000	253,000
Max. Usable Capacity per Cluster	8PB	16PB	32PB	32PB	32PB

Notes:

- (1) Dimensions provided are for the block controller chassis. VSP G200, G400, G600 and G800 each require a 1U service processor in addition to the controller chassis.
 - (2) File module specs are per node unless otherwise indicated.
 - (3) All file modules are supported with every VSP model.
 - (4) Dual node values estimated based upon internal data.
- 1MB = 1,048,576 bytes

SFF = small form factor, LFF = large form factor, SAS = serial attached SCSI, HDD = hard disk drive, SSD = solid state disk, SATA = serial advanced technology attachment, MLC = multilevel cell, FMD = flash module drive, FC = Fibre Channel, FCoE = Fibre Channel over Ethernet, CNS = cluster namespace, NVRAM = nonvolatile random access memory, VLAN = virtual local area network, EVS = Enterprise Virtual Servers, SMB = Server Message Block, NFS = Network File System



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