FlashDisk® RAID 2U/2.5" VX-2500 Series

Easy to Manage, Tiered Virtualized Storage to 144 TB with 2.5" Disks Plus Snapshots, D2D Backup, Replication and TrueRAID6™

VX-2500 virtualized tiered storage expands to 144 TB with (144) 2.5" disks, up to 1 TB, in seven 2U shelves with 24 drives each. It also allows 2U or 3U expansion shelves containing 12, 16 or 24 disks for exceptionally flexible tiering of storage to application needs to 310 TB. It provides performance, reliability, advanced storage services and features FlashD2D - a unique scheduled, zero-downtime disk-to-disk backup. Its FlashDisk Global Manager provides a centralized management pane for all FlashDisk VX Series systems installed and centralized event notifications. This makes it very easy to manage a

VX-2500 RAID systems feature (24) 2.5" disks in a 2U base unit. Expansion shelves offer both (12) or (24) 2.5" disks in a 2U shelf or (16) 2.5" or 3.5" disks in a 3U shelf for maximum flexibility.

large, flexible virtual and tiered storage pool including primary storage, snapshot images and mirror volumes. It offers storage based or server based replication (CA ARC-serve Replication) for business continuity and disaster recovery.

VX-2500 supports single or dual redundant controllers with mirrored cache for SAS, iSCSI, Fibre Channel or "Multi-Protocol RAID" with either Fibre Channel or SAS plus iSCSI hosts.

The VX-2500 is a "SAN-In-A-Box" that can attach to multiple hosts without switches. FlashDisk delivers exceptional performance with over 2,800 MB per second data throughput using SAS 6 Gb disk drives and 48 Gb SAS backend expansion buses. High performance *TrueRAID6*, with dedicated hardware ASIC for high speed dual *distributed* parity, protects against two simultaneous drive failures and ensures fast and successful disk rebuilds.

Redundant Controller Systems						
Host Interface	**SAS 6 Gb**	**SAS + iSCSI**	**iSCSI 1 Gb**		**Fibre Channel 8 Gb**	**F/C + iSCSI**
Models	*VX-2534R*	*VX-2574R*	*VX-2552R*		*VX-2528R*	*VX-2548R*
Number of Host Ports	4	4 + 4	12		8	8 + 4
RAID 5/6: IOPS (R/W)	137K / 59K	135K / 48K	102K / 39K		150K / 71K	148K / 58K
RAID 5/6: Throughput MB/s. (R/W)	2,395 / 951	2,343 / 922	752 / 571		2,767 / 1,094	2,707 / 1,061
Single Controller Systems						
Host Interface	**SAS 6 Gb**	**SAS + iSCSI**	**iSCSI 1 Gb**		**Fibre Channel 8 Gb**	**F/C + iSCSI**
Models	*VX-2532S*	*VX-2574S*	*VX-2556S*		*VX-2524S*	*VX-2544S*
Number of Host Ports	2	2 + 2	6		4	4 + 2
RAID 5/6: IOPS (R/W)	66K / 47K	66K / 46K	83K / 43K		77K / 57K	74K / 56K
RAID 5/6: Throughput MB/s. (R/W)	1,382 / 862	1,181 / 655	925 / 401		1,312 / 873	1,291 / 877

Number of Total SAS/SSD Disks	144
3.5" SAS Disks	15K rpm: 300, 450, 600 GB - 7.2K rpm: 1, 2, 3 TB
2.5" SAS Disks	15K rpm: 73, 146, 300 GB; 10K rpm: 300, 450, 600, 900 GB; 7.2K rpm: 1 TB
2.5" SSD Disks	SLC: 100, 200, 400 GB - MLC: 200, 400, 800 GB
Compatibility	Supports any open O/S; Supports VMware, Citrix, Hyper-V
Reliability	RAID 0, 1, 3, 5, 6, 10, 15, 16, 30, 50, 60; Hot swap components; Hot spare drive; Automatic rebuild; Path failover
Manageability	FlashDisk Global Manager manages multiple FlashDisk units over network; Automated alerts
Warranty and Service	One year warranty; On-site service; 24x7 automated "call home" to US call center; Live technical phone support

Storage Services

Virtual Storage Pools
Create, expand, and delete storage volumes as requirements change to maximize storage utilization.

Snapshots
Up to 256 snapshots per volume with 4,096 total snapshots and 256 volume copies. Mount and read snapshots, restore files and databases. Rollback to selected time. Server flush agent supports Windows and Linux applications.

Thin Provisioning Option
Provides dynamic storage allocation and maximizes storage utilization.

Remote Replication Option
Storage based replication for business continuity and disaster recovery.

Mirroring
Create mirror volumes, split mirrors, fast resync for data redundancy, backup, data mining and analysis.

Volume Copy
Reconstitute full volumes from snapshots, create multiple full versions to avoid overloading production.

FlashD2D Backup
Scheduled zero-downtime tiered primary to secondary disk-to-disk backup. Enables off-line copy to tape.

Global Management
Manage multiple FlashDisk VX Series systems from a single, easy to use GUI from any browser on the web.

Storage Wizard
Wizard simplifies initial setup and enables advanced settings.

Visual Calendar Scheduler
Schedules all storage services including snapshots, volume copies, split mirrors, fast resync and replication easily and intuitively.

The VX-2500 Series supports up to 144 disk drives with six 2U or 3U expansion shelves and expands to 312 TB with 3 TB disk drives.

VX-2534R with 4 SAS 6 Gb ports.

VX-2574R with 4 SAS and 4 iSCSI ports.

VX-2552R with 12 iSCSI GbE ports.

VX-2528R with 8 Fibre Channel 8 Gb ports.

VX-2548R with 8 F/C and 4 iSCSI ports.

VX-2310R & VX-2510R expansion with 4 SAS 6 Gb ports.

VX-3410R expansion with 4 SAS 6 Gb ports.

System Options

Thin Provisioning	Enables high storage utilization with virtual storage on demand.
Remote Replication	Available on "multi-protocol" models with added iSCSI replication ports.
Advanced Storage Services	Increases snapshots from 64 to 256 per volume; from 1,024 to 4,096 total and increases volume copies from 64 to 256 total.
LUN Masking	Enables volume protection needed in SAN environment.
Cache upgrade	Expands 2 GB controller cache memory to 4 GB cache.

External Options

FlashNAS Appliance	High performance NAS filer with snapshots; CIFS/NFS/AFP; NSPF
CA ARCserve Replication	Protects availability of systems, applications and data

2U RAID Base Unit

RAID controller	Single/Dual redundant 64-bit, 11th generation controller
RAID levels supported	0, 1, 3, 5, 6, 1+0, 15, 16, 30, 50, 60
Host interfaces	6 Gb SAS, 8 Gb F/C, GbE
Expansion shelf interface	6 Gb SAS, 4 lanes - 24 Gb per port - up to 48 Gb per array
Number of drives - Total capacity	(24) 2.5" disks per base unit - 312 TB maximum
On-line capacity expansion	Automatically adds new drives to existing array - "on-the-fly"
Cache memory capacity	2 GB, expandable to 4 GB per controller
Non-volatile cache	Li-ION battery powered backup to flash memory
Maximum LUNs	1024 total, 64 per host ID
Maximum number of hosts	4 SAS, 64 iSCSI or 64 Fibre Channel
LUN mapping/filtering	Configurable per logical partition
Host adapters available for	PCI-X, PCI Express
Power supplies and AC inlets	Dual hot-swap redundant 460 W each; dual AC inlets

2U/3U Expansion Shelves

Expansion architecture	Single/Dual SAS (Serial Attach SCSI) bus
Expansion shelf architecture	Multiplexed access to each drive within the shelf
Maximum drives/capacity	12, 16 or 24 disks per expansion shelf - 48 TB per shelf maximum
Removable drive trays	Hot swappable; individual drive locks
Power supplies	Dual hot-swappable; 460/530 Watts each
Cooling system	Dual hot-swappable fan modules
Active components	No active data path components on the midplane
S.E.S. monitoring controllers	Dual, hot-swappable SCSI Enclosure Services modules

Controls and Indicators

LCD front operation panel	2 x 16 character display, push button controls.
LED indicators	LED power, battery, controller, and system status
Alerting	Audible and visual alerts
Component failure	Failure indication through LCD and GUI
LCD front operating console	View/edit logical RAID/physical drives, setup hot-spare drives, map hosts, check parity, enable write-back cache, rebuild failed drive, view logs...

Compatibility

Operating systems	Supports 14 Operating Systems including Windows, Linux, and UNIX
Platforms supported	Intel, SUN, HP, IBM RS-6000, Apple, SGI
Cluster support	Supports 9 industry-standards including Windows, Linux, and Veritas
Remote monitoring ports	RJ45 10/100 Ethernet
Communication protocols	TCP/IP, SNMP, SSH

Storage Management

Event notification	Automatic event and problem alert notification
FlashAlert call home service	24-hour call center available for immediate action
Manage out of band	Ethernet
FlashDisk Global Manager GUI	Manage storage services of multiple FlashDisks from any web browser

General

Uninterruptible power supply	Required when using write-back cache
Redundant AC power	Dual 90-260 VAC Inlet, 47-63 Hz
Power consumption	100 VAC @ 8/10A; 240 VAC @ 4/5A; 460/530 W with PFC
RAID unit dimensions	3.5"/5.1"h x 17.5"w x 19.2"d
RAID unit weight	Approximately 63/77 lbs. fully loaded with drives
Operating temperature	0° to 40° C
Cooling system	Two dual hot-swap, ball bearing blowers; <51 dB-A
Compliance	FCC, UL, CE, CSA

Warranty & Service

Standard warranty	One year, next day on-site and toll-free hotline; Options up to 24x7 on-site
Installation and service	On-site installation; 24x7 service available

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