

FlashDisk® RAID 3U/3.5" VX-3400 Series

Easy to Manage, Tiered Virtualized Storage to 448 TB Plus Snapshots, D2D Backup, Replication and TrueRAID6™

VX-3400 virtualized tiered storage expands to 448 TB with 112 disks to 4 TB in seven shelves with 16 drives each. 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 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-3400 supports single or dual redundant controllers with mirrored cache for SAS, iSCSI, 10 GbE, Fibre Channel or "Multi-Protocol RAID" with either Fibre Channel or SAS plus iSCSI hosts.

The VX-3400 is a "SAN-In-A-Box" that can attach to multiple hosts without switches. FlashDisk delivers exceptional performance with nearly 2,900 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.



A FlashDisk VX-3400 RAID disk array base unit with six expansion shelves supports 448 TB at low cost.

Redundant Controller Systems

Host Interface	SAS 6 Gb	SAS + iSCSI	iSCSI 1 Gb	iSCSI 10 Gb	Fibre Channel 8 Gb	F/C + iSCSI
Models	VX-3434R	VX-3478R	VX-3452R	VX-3464R	VX-3428R	VX-3448R
Number of Host Ports	4	4 + 4	12	4	8	8 + 4
RAID 5/6: IOPS (R/W)	140K / 60K	137K / 52K	101K / 54K	85K / 36K	148K / 73K	148K / 58K
RAID 5/6: Throughput MB/s. (R/W)	2,677 / 1,187	2,484 / 1,181	944 / 585	1,516 / 734	2,847 / 1,074	2,642 / 1,083

Single Controller Systems

Host Interface	SAS 6 Gb	SAS + iSCSI	iSCSI 1 Gb	iSCSI 10 Gb	Fibre Channel 8 Gb	F/C + iSCSI
Models	VX-3432S	VX-3474S	VX-3456S	VX-3462S	VX-3424S	VX-3444S
Number of Host Ports	2	2 + 2	6	2	4	4 + 2
RAID 5/6: IOPS (R/W)	60K / 42K	70K / 48K	87K / 47K	41K / 27K	87K / 65K	80K / 57K
RAID 5/6: Throughput MB/s. (R/W)	1,366 / 883	1,217 / 724	447 / 304	833 / 413	1,558 / 1,078	1,388 / 884

Number of Total SAS/SSD Disks	112					
3.5" SAS/SATA Disks	SAS: 15K rpm: 300, 450, 600 GB - 7.2K rpm: 1, 2, 3 TB; SATA: 4 TB 7.2K rpm					
2.5" SAS Disks	10K rpm: 300, 450, 600, 900 GB					
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 back-up. 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.

VX-3400 Base Unit with Expansion Shelf



The VX-3400 Series supports up to 112 disk drives and scales to 448 TB with six expansion shelves and 4 TB disk drives.

VX-3400 Models Rear View



VX-3434R with 4 SAS 6 Gb ports.



VX-3478R with 4 SAS and 4 iSCSI ports.



VX-3452R with 12 iSCSI GbE ports.



VX-3464R with 2 iSCSI 10 GbE ports.



VX-3428R with 8 Fibre Channel 8 Gb ports.



VX-3448R with 8 F/C & 4 iSCSI ports.



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

System Options

Thin Provisioning
Remote Replication
Advanced Storage Services

LUN Masking
Cache upgrade

External Options

FlashNAS Appliance
CA ARCserve Replication

3U RAID Base Unit

RAID controller
RAID levels supported
Host interfaces
Expansion shelf interface
Number of drives - Total capacity
On-line capacity expansion
Cache memory capacity
Non-volatile cache
Maximum LUNs
Maximum number of hosts
LUN mapping/filtering
Host adapters available for
Power supplies and AC inlets

3U Expansion Shelf

Expansion architecture
Expansion shelf architecture
Maximum drives/capacity
Removable drive trays
Power supplies
Cooling system
Active components
S.E.S. monitoring controllers

Controls and Indicators

LCD front operation panel
LED indicators
Alerting
Component failure
LCD front operating console

Compatibility

Operating systems
Platforms supported
Cluster support
Remote monitoring ports
Communication protocols

Storage Management

Event notification
FlashAlert call home service
Manage out of band
FlashDisk Global Manager GUI

General

Uninterruptible power supply
Redundant AC power
Power consumption
RAID unit dimensions
RAID unit weight
Operating temperature
Cooling system
Compliance

Warranty & Service

Standard warranty
Installation and service

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

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

Single/Dual redundant 64-bit, 11th generation controller
0, 1, 3, 5, 6, 1+0, 15, 16, 30, 50, 60
6 Gb SAS, 8 Gb F/C, GbE, 10 GbE
6 Gb SAS, 4 lanes - 24 Gb per port - up to 48 Gb per array
(16) 3.5" or 2.5" disks per base unit - 448 TB maximum
Automatically adds new drives to existing array - "on-the-fly"
2 GB, expandable to 4 GB per controller
Li-ION battery powered backup to flash memory
1024 total, 64 per host ID
4 SAS, 64 iSCSI or 64 Fibre Channel
Configurable per logical partition
PCI-X, PCI Express
Dual hot-swap redundant 530 W each; dual AC inlets

Single/Dual SAS (Serial Attach SCSI) bus
Multiplexed access to each drive within the shelf
(16) 3.5" or 2.5" disks per expansion shelf - 64 TB per shelf maximum
Hot swappable; individual drive locks
Dual hot-swappable; 530 Watts each
Dual hot-swappable fan modules
No active data path components on the midplane
Dual, hot-swappable SCSI Enclosure Services modules

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

Supports 14 Operating Systems including Windows, Linux, and UNIX
Intel, SUN, HP, IBM RS-6000, Apple, SGI
Supports 9 industry-standards including Windows, Linux, and Veritas
RJ45 10/100 Ethernet
TCP/IP, SNMP, SSH

Automatic event and problem alert notification
24-hour call center available for immediate action
Ethernet
Manage storage services of multiple FlashDisks from any web browser

Required when using write-back cache
Dual 90-260 VAC Inlet, 47-63 Hz
100 VAC @ 9A; 240 VAC @ 4.5 A; 530 W with PFC
5.1" h x 17.5" w x 19.2" d
Approximately 77 lbs. fully loaded with drives
0° to 40° C
Two dual hot-swap, ball bearing blowers; <51 dB-A
FCC, UL, CE, CSA

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

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