

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

Rugged RAID at COTS Prices with 2.5" Disks for Field Deployments Virtual Storage - RAID 6 - Fibre Channel, SAS and iSCSI Hosts

FlashDisk COTS Rugged disk arrays are designed to protect data from certain environmental perils - at COTS prices. Far less expensive than fully rugged systems, the FlashDisk RV-2500 Series supports SAS, Fibre Channel, iSCSI hosts and a "Hybrid" system with both Fibre Channel and iSCSI hosts. It supports either (24) 2.5" SAS or SSD disks or (12) 3.5" disks per shelf and provides up to 24 TB of storage in the base unit, expandable to 168 TB. As COTS rugged, it is protected against dust, moisture, shock and vibration not offered on standard commercial units. The US Army approved these units for field use and has deployed them worldwide in HUMVEE communication trailers in harsh environments. The front door is crafted of sturdy milled aluminum that provides rigidity and structural integrity. It also houses a heavy-duty dust filter to constrict particle flow and provide a moisture shield to protect internal components. The LCD front panel is easily viewed by field personnel, is EMI protected and uses long life pushbuttons. The door features a dust and raindrop seal. Optionally, the US Army, Navy and Air Force mount the unit to a chassis using five bolts, secured in a triangulated pattern for strength, to a rugged heavy-duty base plate for ground, sea and air operations.



FlashDisk RV-2500 disk arrays feature (24) 2.5" SAS and SSD disks per shelf and are ideal for mobile applications - providing field reliability and data protection at COTS prices.

FlashDisk Global Manager™ provides all storage services and a centralized management pane for multiple systems. FlashDisk RV-2500 supports a base unit with single or dual redundant controllers with mirrored cache and up to 6 expansion shelves. RAID 6 provides dual parity for large arrays to protect against two drive failures and to ensure successful disk rebuilds.

Redundant Controller Systems					
Host Interface	SAS 6 Gb	SAS + iSCSI	iSCSI 1 Gb	Fibre Channel 8 Gb	F/C + iSCSI
Models	RV-2534R	RV-2574R	RV-2552R	RV-2528R	RV-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	RV-2532S	RV-2574S	RV-2556S	RV-2524S	RV-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 back-up. Enables off-line copy to tape.

Global Management

Manage multiple FlashDisk RV 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.

RV-2500 Base Unit with Expansion Shelf

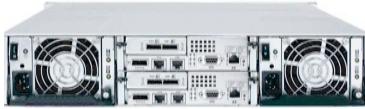


The RV-2500 Series supports up to 144 disk drives with six 2U or 3U expansion shelves and expands to 312 TB with 3 TB disk drives.

RV-2500 Models Rear View



RV-2534R with 4 SAS 6 Gb ports.



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



RV-2552R with 12 iSCSI GbE ports.



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



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



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



RV-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

2U 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

2U/3U Expansion Shelves

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; NSPP
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
6 Gb SAS, 4 lanes - 24 Gb per port - up to 48 Gb per array
(24) 2.5" disks per base unit - 312 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 460 W each; dual AC inlets

Single/Dual SAS (Serial Attach SCSI) bus
Multiplexed access to each drive within the shelf
12, 16 or 24 disks per expansion shelf - 48 TB per shelf maximum
Hot swappable; individual drive locks
Dual hot-swappable; 460/530 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, indicator, 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 @ 8/10A; 240 VAC @ 4/5A; 460/530 W with PFC
3.5"/5.1" h x 17.5" w x 19.2" d
Approximately 63/77 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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