QSAN

XCubeDAS XD5300 series
Power Up Your Digital Universe

◎ Secure   ▣ Optimise   ▣ Scale

QSAN XCubeDAS XD5300 series is designed with the latest 12Gb/s SAS expander, and built for host server easy capacity expanding, application demanding high throughput, high availability, non-stop services, and flexible storage planning with limited budgets.

Windows Server 2012 R2 Certified

Feature Highlights

▌ 12Gb/s SAS 3.0 technology
▌ 10x 12Gb/s SAS wide ports (SFF-8644)
▌ 480Gb/s bandwidth and 24,000MB/s throughput
▌ Dual active controller with high availability
▌ Multiple paths
▌ Full range product form factors
▌ Support for 12Gb/s SAS, NL SAS, SSDs, and 6Gb/s SAS, NL SAS, SATA, SSDs
▌ Pay-as-you-grow scalable expansion

▌ Versatile topologies, zoning, and runtime configuration
▌ High reliability
▌ Cable-less design
▌ Powerful CubeView DAS central management software (CMS)
▌ Complete HBA and RAID cards support
▌ Green technology

The XD5300 DAS Series Applications

QSAN XCubeDAS XD5300 series is fully compatible with all major 12Gb/s SAS host bus adaptors, RAID cards, servers, and operating systems, including Windows Server 2008/2012, Storage Spaces, RHEL/-SuSE/Linux, Solaris, VMware, Citrix, and Hyper-V. The XD5300 series accomplished complete tests and met the requirements of VMware, Citrix, and Hyper-V virtualization environment storage expansion. With the native ability of 12Gb/s SAS and QSAN's performance optimization, the XD5300 series is both efficient and smooth for high-definition media editing, high performance computing applications, massive data archiving/backup, performance-demanding applications, real time clustering, expansion to VMware Virtual SAN (VSAN Software Defined Storage), and online expansion to public or private cloud storage servers.
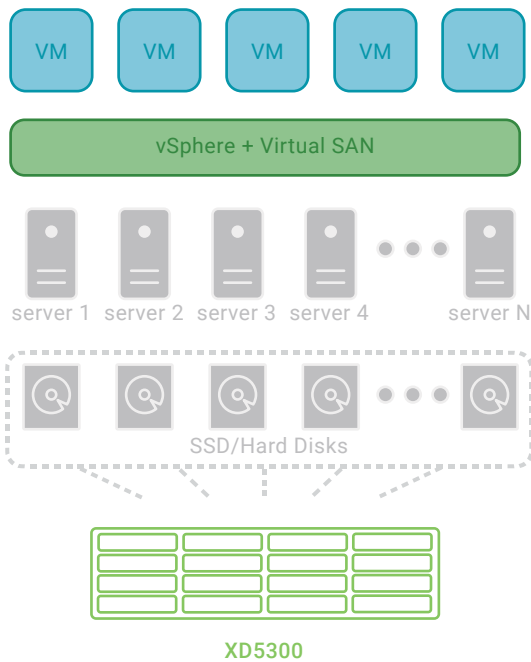
vmware CITRIX Microsoft Hyper-V

XCubeDAS XD5300 Series Compatibility

Software-Defined Storage (SDS): Microsoft Windows Storage Spaces and VMware VSAN

As the software-defined storage trends continue, both major virtualization operating systems – Microsoft and VMware pay high attention to SDS and provide integration interfaces for the storage partners. QSAN XD5300 DAS systems integrate both Microsoft and VMware interfaces for users' various environments and applications.

Microsoft Windows Storage Spaces, Windows 8 and Windows Server 2012 built-in feature, enables IT managers to virtualize storage by grouping disks into pools, and creating volumes called Storage Spaces from the available capacity in the storage pools.
VMware Virtual SAN (VSAN) is VMware's SDS solution for hyper-converged infrastructure. VSAN is embedded in the hypervisor and delivers shared storage for vSphere virtual machines. The total system leverages commodity servers, networks, disks, DAS systems, and etc.

VM   VM   VM   VM   VM

vSphere + Virtual SAN

server 1   server 2   server 3   server 4   • • •   server N

SSD/Hard Disks

XD5300

High Performance and High Throughput

XD5300 series adopts native 12Gb SAS 3.0 technology. SAS 3.0 delivers twice data transfer rate than SAS 2.0. With 10x 12Gb/s SAS wide ports and three topologies support, it allows IT managers fully utilizing 480Gb/s bandwidth per system for various applica-

tions. XD5300 series can support up to 450 hard drives per system. The raw capacity can support up to 3.6PB with 8TB drives installed. XD5300 series is fully tested with various configurations and can deliver up to 24,000MB/s non cache-hit throughput and end-to-end 4,000,000 IOPS. It is ideal for video editing, high performance computing (HPC), cloud storage, streaming, broadcasting, virtualization, and datacenters.
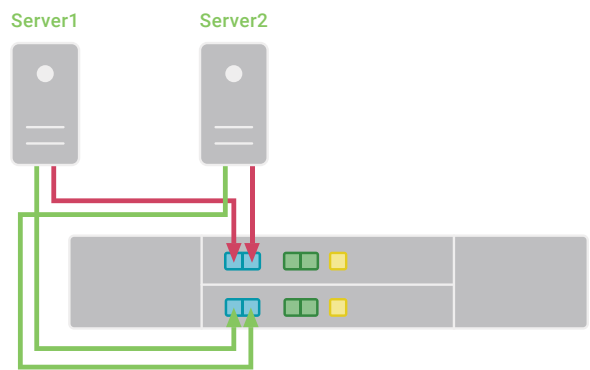
480Gb/s Bandwidth   **24,000MB/s Throughput**

Dual Active Controller and High Availability Design

The XCubeDAS XD5300 DAS systems offer fully redundant components for all major functions, including dual controllers, power supplies, fan modules, host ports, and expansion ports. Besides hot swappable components, The XD5300 is able to upgrade firmware without any system down time and balancing IO loading through multiple paths and dual controllers.

Server1   Server2

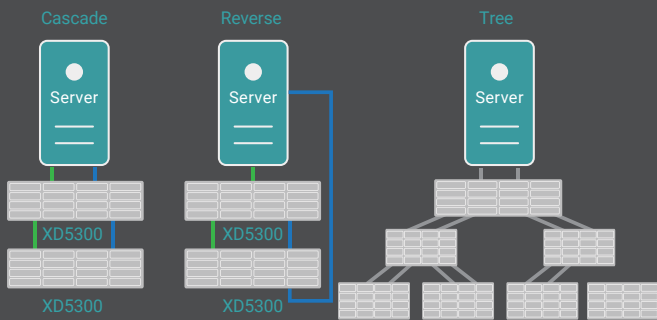Hardware redundant modules include:

- Controllers
- Power supplies
- Fan modules
- Hard drive trays

Firmware high availability includes:

- Non-disruptive firmware upgrade
- Multiple paths
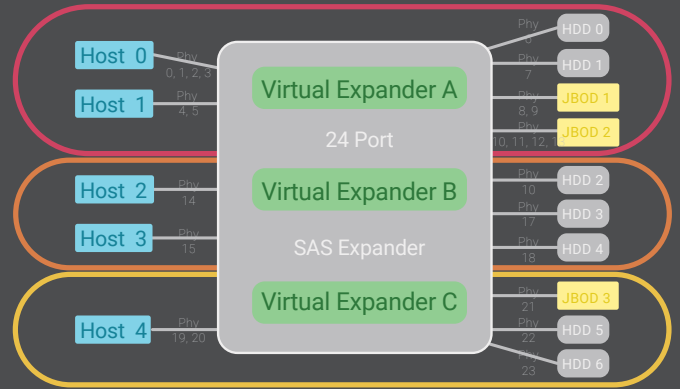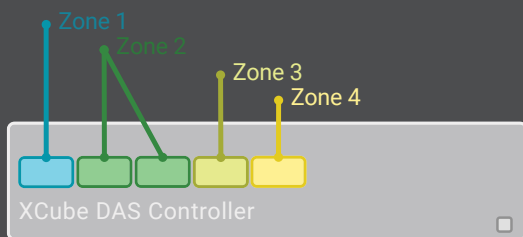- Automatic failover

Versatile Topologies: Cascade, Reverse, and Tree

The XD5300 features all 12Gb/s SAS topologies and permutations of all host and expansion port configurations. The XD5300 series supports all 12Gb/s SAS topologies, including Cascade, Reverse, and Tree. The XD5300 series can be deployed freely to fit various connections to the host servers. With up to 10 x 12Gb/s SAS ports support per system, this feature is crucial for users to plan a well-defined resource arrangement to achieve highly utilized performance and capacity of the XD5300 system.

Cascade   Reverse   Tree

Zoning

User can select specific group of disk slots and define a zone for it. There can be up to 5 zones per system. Each zone can be assigned to at least 1x 12Gb/s SAS port. The zoning feature provides better security control even in the direct attached system scenario. Different host servers can connect to the same XD5300 system through different zones and have different access contol schemes for different zones.

Zone 1
Zone 2
Zone 3
Zone 4

XCube DAS Controller

QSAN CubeView Central Management Software

The CubeView CMS can monitor and manage system log, hard drive status, enclosure, zoning function, firmware upgrade, disk firmware batch upgrade*, and history record of system temperature, voltage, and fan speed. The systems also support command line and S.E.S. that allows IT managers completely control of the storage systems and agile configuration of powerful management.
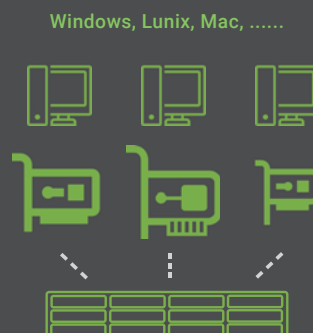
CLI | CubeView

HBA and RAID Card Compatibilities

The XD5300 series provides complete compatibility support of HBA and RAID cards.

- Avago (LSI) RAID Cards MegaRAID SAS 9380
- Microsemi Adaptec RAID 8885
- Avago (LSI) HBA SAS 9300 and SAS 9207
- Microsemi Adaptec HBA 1000-16e
- ATTO HBA ExpressSAS H12F0 and H1280

Windows, Lunix, Mac, ...

XCubeDAS	XD5312-D XD5312-S	XD5316-D XD5316-S	XD5324-D XD5324-S	XD5326-D XD5326-S
Configurations	Dual Controllers Single Controller	Dual Controllers Single Controller	Dual Controllers Single Controller	Dual Controllers Single Controller
Host Wide Ports Per System	10x 12Gb/s SAS 5x 12Gb/s SAS	10x 12Gb/s SAS 5x 12Gb/s SAS	10x 12Gb/s SAS 5x 12Gb/s SAS	10x 12Gb/s SAS 5x 12Gb/s SAS
Enclosures	LFF 2U12	LFF 3U16	LFF 4U24	SFF 2U26
No. of Hard Drives	12	16	24	26
Hard Drive Interfaces 12Gb/s 6Gb/s	SAS, NL SAS, SSD SAS, NL SAS, SATA*, SSD	SAS, NL SAS, SSD SAS, NL SAS, SATA*, SSD	SAS, NL SAS, SSD SAS, NL SAS, SATA*, SSD	SAS, NL SAS, SSD SAS, NL SAS, SATA*, SSD
Scalability Max Drives Max Capacity	450 3.6PB	450 3.6PB	450 3.6PB	450 3.6PB
Dimension (H x W x D)	88 x 438 x 515 mm	130 x 438 x 515 mm	170 x 438 x 515 mm	88 x 438 x 491 mm
Topologies	Cascade, Reverse, Tree			
Compatibility OS RAID Card / HBA Expansion	Windows Server 2008/2012, Storage Spaces, RHEL/SuSE/Linux, Solaris, VMware, Citrix Avago (LSI) RAID Cards (MegaRAID SAS 9380), Avago (LSI) Host Bus Adapters (SAS 9300 and SAS 9207), Microsemi Adaptec RAID Cards (RAID 8885), Microsemi Adaptec Host Bus Adapters (HBA 1000-16e), ATTO Host Bus Adapters ExpressSAS (H12F0 and H1280) Servers			
Central Management Management	CubeView Central Management Software S.E.S., CLI, Console, Zoning			
Host & Expansion Port Configuration	Automatic Configuration Recommended Configuration: 5 IN, 4 IN 1 OUT, 3 IN 2 OUT			
Power Supplies	2x 450W 80 PLUS Platinum	2x 770W 80 PLUS Platinum	2x 770W 80 PLUS Platinum	2x 770W 80 PLUS Platinum
Fan Modules	2	2	2	2
Temperature	Operating: 0°C to 40°C, 32°F to 104°F Shipping: -40°C to 70°C, -40°F to 158°F			
Relative Humidity	Operating: 10% to 90% RH @ 40°C (104°F) Non-condensing Non-Operating: Up to 93% RH @ 40°C (104°F) Non-condensing			
Regulatory	CE, FCC, BSMI , VCCI , KCC			
Warranty	3 Years			

* 3.5 inch 6Gb/s SATA hard drive is only supported in single controller configuration. 2.5 inch 6Gb/s SATA drive can be installed in both single controller configuration and dual controller configuration with MUX board.

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