EMC VNXe3200 UNIFIED STORAGE SYSTEM

TheVNXe3200 is the newest member of the EMC® VNXe® Series. It is the most affordable unified hybrid storage system, bringing the power of EMC's VNX® to the IT generalist.

The new VNXe3200™ retains the affordability, simplicity, and efficiency of previous generation VNXe systems and adds support for MCx™ multicore optimization, FAST™ Cache SSD caching, FAST VP auto-tiering, and Fibre Channel host connectivity. These enterprise-class features were previously reserved for higher-end storage systems.

With Unisphere™ award-winning ease of use, the VNXe3200's deep integration with VMware and Microsoft for simplified provisioning and deploying virtualized applications, and EMC's legendary support, there is no need to be a storage expert to take advantage of this new and powerful storage system.

The VNXe3200

Specifications

HYBRID, UNIFIED ARCHITECTURE

The VNXe3200 is a dense, 2U dual-controller unified storage system that provides FC and IP connectivity for concurrent SAN or NAS operations. With it you can:

- Setup for NAS or SAN in minutes with new Unisphere wizards.
- Be just one click away from a support specialist via online chat.
- Reduce capacity requirements by up to 50% via thin provisioning and file deduplication.
- Store 125 VSPEX® VM's with the new MCx optimized architecture.

The VNXe3200's performance and low $/GB sets a new bar for entry-level storage.

VNXe PHYSICAL SPECIFICATIONS

	VNXe3200
Min/Max Drives	6 to 150*
Max FAST Cache	200 GB
Drive Enclosure Options	25x2.5" Flash/SAS drives (2U) 12x3.5" SAS/ NL SAS drives (2U)
CPU/Memory per Controller	1 x 2.2 GHz Xeon (Sandy Bridge) Quad Core/ 24 GB
Base 10 GB/s IP Ports per Controller (Base-T)	4**
Max Flex IO Modules per Controller	1
Raid Options	RAID 10/5/6

* 500 TB max capacity.
** Ports can auto-negotiate to 1GbE

Supported Pool LUNs	Up to 512
Maximum LUN Size	16 TB
Maximum FS Size	16 TB
Total Raw Capacity	500 TB
Maximum File Systems	500

VNXe3200 CONNECTIVITY

The VNXe3200 provides flexible DAS, NAS, or SAN connectivity options through Ethernet and Fibre Channel ports and supports a wide range of protocols including CIFS (SMB 1, SMB 2 and SMB 3), NFSv3, iSCSI, and Fibre Channel

FLEX IO MODULE OPTIONS

IO Modules	**VNXe3200**
8 Gb/s Fibre Channel Module	4 ports per module

BACK-END (DISK) CONNECTIVITY

Each storage processor includes two 6 Gb/s x 4 Serial Attached SCSI (SAS) port providing connection to additional disk drive expansion enclosures.

MAXIMUM CABLE LENGTHS

SAS Cable Length (enclosure to enclosure): 6 meters

SUPPORTED DISK ARRAY ENCLOSURES (DAEs)

The VNXe3200 supports one or more of the following DAEs:

	VNXe3200 12 Drive Disk Expansion	**VNXe3200 25 Drive Disk Expansion**
Drive Enclosures	3.5” SAS, NL-SAS, Flash (2U)	2.5” SAS, Flash (2U)
Drive Quantity	12	25
Controller Interface	6 Gb SAS	6 Gb SAS

SUPPORTED DISK DRIVES

	100 GB*	200 GB*	300 GB	600 GB	600 GB	900 GB	2 TB NL	4TB NL
Interface	6 Gb/s SAS	6 Gb/s SAS	6 Gb/s SAS	6 Gb/s SAS	6 Gb/s SAS	6 Gb/s SAS	6 Gb/s SAS	6 Gb/s SAS
Capacity (RPM)	100 GB (Flash)	200 GB (Flash)	300 GB (15,000)	600 GB (15,000)	600 GB (10,000)	900 GB (10,000)	2 TB (7,200)	4 TB (7,200)
Formatted Capacity*	91.69 GB	183.41 GB	268.37 GB	536.77 GB	536.77 GB	833.40 GB	1823.56 GB	3668.55 GB
Form Factor	2.5", 3.5"	2.5", 3.5"	2.5" 3.5"	3.5"	2.5"	2.5" 3.5"	3.5"	3.5"
Height	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"
Data Buffer	N/A SSD	N/A SSD	16 MB (min.)	16 MB (min.)	16 MB (min.)	16 MB (min.)	128 MB	128 MB
Buffer to/from Media	260 MB/s	260 MB/s	97 MB/s	150 MB/s	93 MB/s	93 MB/s	84 MB/s	84 MB/s
SP to/from Buffer	600 MB/s (max)	600 MB/s (max)	600 MB/s (max)	600 MB/s (max)	600 MB/s (max)	600 MB/s (max)	600 MB/s (max)	600 MB/s (max)
Average Seek	N/A	N/A	3.5 ms (Read) 4.0 ms (Write)	3.4 ms (Read) 3.9 ms (Write)	3.7 ms (Read) 4.2 ms (Write)	3.7 ms (Read) 4.2 ms (Write)	8.2 ms (Read) 9.2 ms (Write)	8.5 ms (Read) 9.5 ms (Write)
Rotation Latency	N/A	N/A	2.0 ms	2.0 ms	3.0 ms	3.0 ms	4.17 ms	4.16 ms

* 100/200GB Flash drives are available in both FAST Cache and FAST VP supported versions.

PROTOCOLS SUPPORTED

CIFS (SMB 1, SMB 2 and SMB 3), NFSv3, iSCSI, Fibre Channel

Network Lock Manager (NLM) v3, v4

Routing Information Protocol (RIP) v1-v2

Simple Network Management Protocol (SNMP)

Network Data Management Protocol (NDMP) v1-v4

Address Resolution Protocol (ARP)

Internet Control Message Protocol (ICMP)

Simple Network Time Protocol (SNTP)

Lightweight Directory Access Protocol (LDAP)

SERVER OPERATING SYSTEM SUPPORT

Apple MAC O/S 10.8 or greater

Citrix XenServer 6.1

HP-UX

IBM AIX

IBM VIOS 2.2, 2.3

Microsoft Windows Server 2008, Windows Server 2008 R2+

Windows Server 2012, Windows Server 2012 R2*

Microsoft Windows 7, Microsoft Windows 8 and Vista

Microsoft Hyper-V

Novell Suse Enterprise Linux

Oracle Linux

RedHat Enterprise Linux

Solaris 10 x86, Solaris 10 Sparc

Solaris 11 and 11.1 supported, SPARC & x86

VMware® ESXi5.x®

* Base interoperability only.

VNXe SOFTWARE

VNXe offers support for a variety of advanced storage features. These features are standard or may be purchased via software packages. More information regarding features and packages can be found in the VNXe Software Suites data sheet.

VNXe3200 Base Software Package – Standard integrated management and monitoring of all aspects of VNXe systems including the Operating Environment*, all protocols (as listed above), Unisphere Management with integrated support, Unisphere Central, Monitoring & Reporting software, Unified Snapshots, File Deduplication & Compression, Thin Provisioning, Event Enabler (common Anti-Virus), File Level retention

FAST Suite
FAST VP, FAST Cache

EMC Storage Analytics

Powerful monitoring and analytics tools for VMware vCenter™ Operations Manager, (EMC Adapter for VNXe)

PowerPath
Intelligent load balancing and multi-pathing software for networked storage environments

ESI (EMC Storage Integrator for Windows)
Microsoft MMC, PowerShell Commandlets, SCOM, SCO plug-ins.

*The VNXe3200 Operating Environment is a licensed and priced item.

CLIENT CONNECTIVITY FACILITIES

File access by NFS, CIFS protocols

Block access by iSCSI and FC

Link Aggregation (IEEE 802.3ad) – File access only

Failsafe networking

Virtual LAN (IEEE 802.1q)

Network Status Monitor (NSM) v1

Portmapper v2

Network Information Service (NIS) client

Supports Microsoft DFS as Leaf node or Root Server

Native Windows 2000/2003/2008 R2 support

LDAP signing for Windows

VMWARE INTEGRATION

VMware vStorage APIs for Array Integration (VAAI) for File and Block: improves performance by leveraging more efficient, array-based operations VASA

vStorage APIs for Storage Awareness (VASA); provides storage awareness for VMware administrators

VNXe ELECTRICAL SPECIFICATIONS

Requirement	VNXe3200 Processor Enclosure (3.5” Drives)	VNXe3200 Processor Enclosure (2.5” Drives)	VNXe3200 Expansion Enclosure (12 x 3.5” Drives)	VNXe3200 Expansion Enclosure (25 x 2.5” Drives)
AC Line Voltage	100 to 240 V ac± 10%, single-phase, 47 to 63 Hz	100 to 240 V ac± 10%, single-phase, 47 to 63 Hz	100 to 240 V ac± 10%, single-phase, 47 to 63 Hz	100 to 240 V ac± 10%, single-phase, 47 to 63 Hz
AC Line Current	5.2A max at 100 V ac, 2.6 A max at 200 V ac	4.93A max at 100 V ac, 2.47A max at 200 V ac	2.5 A max at 100 V ac, 1.3 A max at 200 V ac	2.5 A max at 100 V ac, 1.3A max at 200 V ac

Power Consumption	520 V ac (470 W) max	493 V ac (443 W) max	250 V ac (240 W) max	250 V ac 230 W) max
Power Factor	0.98 min at full load, low voltage	0.98 min at full load, low voltage	0.98 min at full load, low voltage	0.98 min at full load, low voltage
Heat Dissipation	1.69 x 10^6 J/hr, (1604 Btu/hr) max	1.59 x 10^6 J/hr, (1512 Btu/hr) max	8.64 x 10^5 J/hr, (820 Btu/hr) max	8.28 x 10^5 J/hr, (785 Btu/hr) max
AC Protection	15 A fuse on each power supply, both phases	15 A fuse on each power supply, both phases	15 A fuse on each power supply, both phases	10 A fuse on each power supply, both phases
AC Inlet Type	IEC320-C14 appliance coupler, per power supply	IEC320-C14 appliance coupler, per power supply	IEC320-C14 appliance coupler, per power supply	IEC320-C14 appliance coupler, per power supply
Ride-through Time	12 ms min	12 ms min	30 ms min	30 ms min
Current Sharing	± 5 percent of full load, between power supplies	± 5-percent of full load, between power supplies	± 15 percent of full load, between power supplies	± 10 percent of full load, between power supplies

VNXe PHYSICAL DIMENSIONS (APPROXIMATE)

	VNXe3200 Processor Enclosure (3.5" Drives)	**VNXe3200 Processor Enclosure (2.5" Drives)**	**VNXe3200 Expansion Enclosure (12 x 3.5" Drives)**	**VNXe3200 Expansion Enclosure (25 x 2.5" Drives)**
Dimension (H/W/L)	3.40 in x 17.5 in x 20.0 in/ 8.64 cm x 44.45 cm x 50.8 cm	3.40 in x 17.5 in x 17.0 in/ 8.64 cm x 44.45 cm x 43.18 cm	3.40 in x 17.5 in x 20.0 in/ 8.64 cm x 44.45 cm x 50.8 cm	3.45 in x 17.5 in x 13 in/ 8.76 cm x 44.45 cm x 33.02 cm
Weight (max)	61.8lb/28.1kg	51.7 lb/23.5 kg	52.0 lb/23.6 kg	48.1 lb/21.8 kg

OPERATING ENVIRONMENT (MEETS ASHRAE EQUIPMENT CLASS A4)

Recommended Range Operation	The limits under which equipment will operate the most reliably while still achieving reasonably energy-efficient data center operation.	18C to 27C (64.4Fto 80.6F) at 5.5C (41.9F) dew point to 60% relative humidity and 15C (59F) dew point.
Continuous Allowable Range of Operation	Data center economization techniques (e.g. free cooling) may be employed to improve overall data center efficiency. These techniques may cause equipment inlet conditions to fall outside the recommended range but still within the continuously allowable range. Equipment may be operated without an hourly limitation in this range.	10°C to 35°C (50°F to 95°F) to 20% to 80% relative humidity with 21C (69.8°F) maximum dew point (maximum wet bulb temperature). De-rate maximum allowable dry bulb temperature at 1°C per 300m above 950m(1F per 547 ft above 3117ft).
Expanded Allowable Range of Operation	During certain times of the year, equipment inlet conditions may fall outside of the continuously allowable range but still within the two expanded ranges. Equipment operation is limited to ≤ 10% or ≤ 1% of the annual operating hours in these ranges.	5°C to 10°C and 35°C to 40°C (with no direct sunlight on equipment) at -12°C dew point and 8% to 85% relative humidity with 24°C dew point (maximum wet bulb temperature). Outside the continuously allowable range (10°C to 35°C), the system can operate down to 5°C or up to 40°C for a maximum of 10% of its annual operating hours. Additionally, the system can operate as high as 45°C for a maximum of 1% of its annual operating hours. For

		temperatures between 40°C and 45°C (104°FF to 113°F), derate maximum allowable dry bulb temperature by 1C per 175m above 950m (1°F per 319 ft above 3117 ft).
Exceptions to Expanded Allowable Range Operation	When operating in the expanded allowable temperature range, system performance is guaranteed while the system is awaiting or being serviced.	Due to certain rare operational modes, it is recommended that service be deferred on the 2.5" and 3.5" Disk Array enclosures when temperatures exceed 40°C.
Temperature Gradient	20°C/hr (36°F/hr)	
Altitude	3050m (10,000ft)	

Statement of Compliance

This Information Technology Equipment is compliant with the electromagnetic compatibility (EMC) and product safety regulations/standards required by the countries in which the product is sold. EMC compliance is based on FCC part 15, CISPR22/CISPR24 and EN55022/EN55024 standards, including applicable international variations. EMC compliant Class A products are marketed for use in business, industrial, and commercial environments. Product Safety compliance is based on IEC 60950-1 and EN60951-1 standards, including applicable national deviations.

This Information Technology Equipment is in compliance with EU RoHS Directive 2011/65/EU.

The individual devices used in this product are approved under a unique regulatory model identifier that is affixed to each individual device rating label, which may differ from any marketing or product family name in this data sheet.

For additional information see https://support.emc.com, under the Safety & EMI Compliance Information tab.

CONTACT US

To learn more about how EMC products, services, and solutions can help solve your business and IT challenges, contact your local representative or authorized reseller—or visit the EMC Store

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