

EMC Symmetrix DMX3000

The EMC® Symmetrix® DMX3000 is a triple-bay storage system that can be configured with up to 576 2Gb/s high-performance Fibre Channel disk drives providing a maximum raw capacity of over 172 TB. The 24-slot Direct Matrix backplane accommodates configurations of up to eight global memory directors, up to eight channel I/O directors, and eight dedicated disk I/O directors.

System Throughput

The Symmetrix Direct Matrix Architecture® provides dedicated, non-blocking interconnects between I/O directors and global memory regions. With up to 128 dedicated data paths operating at 500 MB/s, the Direct Matrix delivers virtually unrestricted concurrent I/O throughput. A separate low-latency message matrix supports inter-processor communications between processors for maximum efficiency.

DMX data paths	32-128	8 per I/O Director, 16 per Global Memory Director
DMX data bandwidth	16-64GB/s	
DMX message bandwidth	4.0-6.4 GB/s	
PowerPC CPUs	40-100	1GHz
Global Memory	8-256 GB	Available in 2, 4, 8, 16 and 32 GB increments
Concurrent Memory transfers	16-32	4 per Global Memory Director

Connectivity

The Symmetrix DMX3000 supports up to eight (8) high-speed Channel I/O Directors with four SMP-driven pipeline slices each. Optimized hardware logic and data protection encoding ensures end-to-end data integrity with automated channel failover for maximum availability and load balancing.

Symmetrix DMX systems support all popular hardware and operating system platforms, storage area networks (SANs), and high-availability cluster environments.

2Gb/s Fibre Channel host/SAN ports	16-64	8 per Fibre Channel Director
2Gb/s Fibre Channel remote replication ports	2-8	1-4 per Fibre Channel Director
1Gb/s Ethernet iSCSI ports	2-32	1-4 per Multi-protocol Channel Director
1Gb/s Ethernet remote replication ports	2-8	1-4 per Multi-protocol Channel Director
2Gb/s FICON host ports	2-32	1-4 per Multi-protocol Channel Director
ESCON host ports	16-64	8 per ESCON Channel Director
ESCON remote replication ports	2-8	1-4 per ESCON Channel Director

Mixed combinations of the above port types depend upon configuration. Refer to the EMC Support Matrix on EMC.com or contact your local EMC sales representative for specific configuration support.

Disk Drives & Drive Connectivity

The Symmetrix DMX3000 disk drive infrastructure is architected with the latest 2Gb/s dual-ported Fibre Channel disk drives, each supported by two independent disk I/O directors with automatic failover and fault isolation.

	Min Capacity	Max Capacity	
Disk Directors	8	8	8 ports per Director
Disk Channels	64	64	Each drive supported by 2 channels
2GB/s FC Disk Drives	289	576	
Drives per Channel Pair	18	18	

Available Drives:

	73 GB	73 GB	146 GB	300 GB
Capacity	73 GB	73 GB	146 GB	300 GB
Rotational Speed	10,000 rpm	15,000 rpm	10,000 rpm	10,000 rpm
Interface	2Gb/s FC	2Gb/s FC	2Gb/s FC	2Gb/s FC
Internal data rate	475-841 Mb/s	609-891 Mb/s	475-841 Mb/s	475-841 Mb/s
Average access time (read/write)	4.9/5.5 ms	3.8/4.1 ms	4.9/5.5 ms	4.9/5.5 ms
Raw Capacity	73.3 GB	73.3 GB	146.8 GB	300.0 GB
Formatted capacity – open systems	73.10 GB	73.10 GB	146.00 GB	299.32 GB
Formatted capacity – mainframe	72.17 GB	72.17 GB	144.60 GB	295.71 GB
Formatted capacity – iSeries	68.71 GB	68.71 GB	137.42 GB	n/a

Data Protection Options

RAID 0: Data striped across two to eight hypervolumes

RAID 1: Mirrored pair of two hypervolumes

RAID 1/0: Data striped across four mirrored pairs of hypervolumes

RAID 5: Data striped on four or eight hypervolumes (with rotating parity)

Parity RAID: Data volumes on three or seven hypervolumes with dedicated parity hypervolume

Configurable global hot-spare pool

Symmetrix DMX systems can be integral elements of a comprehensive information lifecycle management strategy—a strategy that helps your enterprise attain the maximum value from its information, at the lowest TCO, at every point in the information lifecycle. Information lifecycle management maps the right service level to the right application at the right cost—at the right time.



System Capacities

	73 GB Drives		146 GB Drives		300 GB Drives	
	Min. Capacity (GB)	Max. Capacity (GB)	Min. Capacity (GB)	Max. Capacity (GB)	Min. Capacity (GB)	Max. Capacity (GB)
Number of Disks	289	576	289	576	289	576
Raw Capacity						
Open	21,125	42,105	42,194	84,096	86,503	172,407
Mainframe	20,875	41,569	41,790	83,289	85,459	170,327
Mirrored Capacity						
Open	10,599	21,052	21,170	42,048	43,251	86,203
Mainframe	10,465	20,784	20,968	41,644	42,729	85,163
Parity 3+1 Capacity						
Open	15,862	31,579	31,682	63,072	64,877	129,305
Mainframe	15,661	31,177	31,379	62,467	64,094	127,745
Parity 7+1 Capacity						
Open	18,494	36,842	36,938	73,584	75,690	150,856
Mainframe	18,259	36,373	36,585	72,878	74,776	149,036

Configurations with mixed drive capacities and speeds are allowed depending upon configuration.

12 GB of total capacity will be reserved for internal Symmetrix file system use.

All capacities are based on 1 GB = 1,000,000,000 bytes.

Actual usable capacity may vary depending upon operating system.

Disk Emulation

DMX3000	Open Systems	3380K	3390-1	3390-2	3390-3	3390-9	3390-27
MB/Volume	30,720	1,891	946	1,892	2,838	8,514	27,845
Bytes/Track	32,768	47,476	56,66 4	56,66 4	56,66 4	56,66 4	56,664
Bytes/Cylinder	491,520	712,140	849,960	849,960	849,960	849,960	849,960
Cylinders/Volume	65,536	2,655	1,113	2,226	3,339	10,017	32,760

Available Software*

The Enginuity™ operating environment delivers the highest levels of performance and systems and data integrity, while providing a foundation for storage applications such as the TimeFinder™ and SRDF® families of local and remote replication.

Platform Software

AutoSwap
Catalog Solution
Double Checksum
InfoMover
Enterprise Storage Platform (ESP)
Performance Essential
ResourcePak for TPF
ResourcePak for Windows
SRDF/Synchronous
SRDF/Asynchronous
SRDF/Star
SRDF/Data Mobility
SRDF/Automated Replication
SRDF/Consistency Groups
SRDF/Cluster Enabler for MSCS
SRDF/Cluster Enabler for VCS
SRDF/Automated Availability Manager
SRDF/Host Component
SRDF/Mode Change
SRDF/Adaptive Copy
COMPAV/MA
Open Replicator for Symmetrix
ResourcePak Base for OS/390 and z/OS
ResourcePak Extended for OS/390 and z/OS
Data Relocation Utility

TimeFinder/Clones
TimeFinder/Mirror
TimeFinder/Snap
TimeFinder/Consistency Groups
TimeFinder/Exchange Integration Module
TimeFinder/SQL Integration Module
VSAM Assist
TPF Controls for SRDF
TPF Controls for TimeFinder
CopyPoint for OS/400
CopyCross
EMC Compatible Peer (providing IBM PPRC function)
EMC Compatible Extended (providing IBM XRC function)

Information Management Software

Replication Manager/Remote (SDMM)
Replication Manager/Local (ERM)
EMC Data Manger (EDM)
EMC Legato Automated Availability Manager

ControlCenter Storage Management Software

Storage Device Management
Symmetrix Manager
Symmetrix Optimizer
SRDF/TimeFinder Manager for OS/400

SRM Monitoring and Reporting

StorageScope
StorageScope File Level Reporter
Workload Analyzer

SRM Planning and Provisioning

SAN Manager
SAN Advisor
Automated Resource Manager

Infrastructure Software

PowerPath

* Contact your EMC sales representative for software license model numbers, prerequisites, and additional information.

Physical & Cooling Specifications

Height** (in/cm)	Width (in/cm)	Depth (in/cm)	Front Service Area (in/cm)	Rear Service Area (in/cm)	Weight (lb/kg)	Power (kVA)	Cooling (Btu/hr)
75.4/191.5	70.3/178.6	37.5/95.3	36.0/91.4	36.0/91.4	4,606/2,094	15.2	52,455

All dimensions are cabinet/enclosure size without shipping brackets, stabilizers, or sound mufflers. Weight, power, and cooling are maximum for a full configuration.

**An additional 18 in. (45.7 cm) is required for ceiling/top clearance.

Power Specifications

Redundant main and auxiliary power connections

2 (N+1) power supply redundancy

Two redundant power zones with two to six power modules

	North America and International 3-phase (Delta - 4 Wire)	International* 3-phase (Wye - 5 Wire)
Input Voltage (VAC)	200-240	200-240
Frequency (Hz)	47-63	47-63
Circuit Breaker (Amps), recommended	50	32
Power Drops	4	4
Power Connector	(4) 9P54U2T	Country Specific
User Connector	(4) 9C54U2T	Country Specific

* For higher voltage installations (380-415 VAC line to line) a 32 amp rated breaker is recommended.

Environmental Specifications (operating)

Temperature (°F/°C)	50–90°F/10–32°C
Altitude (ft/m), max.	8,000/2,500
Humidity (%), non-condensing	20-80
Raised Floor	Recommended



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