

EMC Symmetrix DMX800

The EMC® Symmetrix® DMX800 is a modular rack-mountable storage system that can be configured with up to 120 2Gb/s high-performance Fibre Channel disk drives providing a maximum raw capacity of over 58 TB. The 8-slot Direct Matrix backplane accommodates configurations of two global memory directors, two or four channel I/O directors, and two 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 32 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	16–32	8 per I/O Director, 16 per Global Memory Director
DMX data bandwidth	8–16 GB/s	
DMX message bandwidth	0.6–1.2 GB/s	
PowerPC CPUs	16–24	1GHz
Global Memory	4–64 GB	Available in 2, 4, 8, 16 and 32 GB increments
Concurrent Memory transfers	8	4 per Global Memory Director

Connectivity

The Symmetrix DMX800 supports up to four (4) 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	8–16	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	2–4	1–4 per Multi-protocol Channel Director
1Gb/s Ethernet remote replication ports	2–4	1–4 per Multi-protocol Channel Director
2Gb/s FICON host ports	2–4	1–4 per Multi-protocol 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 DMX800 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	2	2	8 ports per Director
Disk Channels	8	16	Each drive supported by 2 channels
2GB/s FC Disk Drives	8	120	
Drives per Channel Pair	15	15	

Available Drives:

Capacity	73 GB	73 GB	146 GB	146 GB	300 GB	500 GB
Rotational Speed	10,000 rpm	15,000 rpm	10,000 rpm	15,000 rpm	10,000 rpm	7,200 rpm
Interface	2Gb/s FC	2Gb/s FC	2Gb/s FC	2Gb/s FC	2Gb/s FC	2Gb/s FC
Internal data rate	470-944 Mb/s	685-1,142 Mb/s	470-944 Mb/s	685-1,142 Mb/s	470-944 Mb/s	470-944 Mb/s
Average access time (read/write)	4.9/5.5 ms	3.8/4.1 ms	4.9/5.5 ms	3.8/4.1 ms	4.9/5.5 ms	8.5/9.5 ms
Raw Capacity	73.3 GB	73.3 GB	146.8 GB	146.8 GB	300.0 GB	500.00 GB
Formatted capacity – open systems	73.10 GB	73.10 GB	146.00 GB	146.00 GB	299.32 GB	499.00 GB
Formatted capacity – mainframe	72.17 GB	72.17 GB	144.60 GB	144.60 GB	295.71 GB	492.98 GB
Formatted capacity – iSeries	68.71 GB	68.71 GB	137.42 GB	137.42 GB	n/a	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)
- Configurable global hot-spare pool

* Not recommended as a drive failure in a RAID 0 group will result in data unavailability and data loss.

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		500 GB Drives*	
	Min. Capacity	Max. Capacity	Min. Capacity	Max. Capacity	Min. Capacity	Max. Capacity	Min. Capacity	Max. Capacity
Number of Disks	8	120	8	120	8	120	8	120
Raw Capacity								
Open	0.58	8.77	1.17	17.52	2.39	35.92	2.39	58.35
Mainframe	0.58	8.67	1.16	17.35	2.37	35.49	2.37	57.60
Mirrored Capacity								
Open	0.29	4.39	0.58	8.76	1.20	17.96	1.20	29.18
Mainframe	0.29	4.34	0.58	8.68	1.18	17.74	1.18	28.80
Parity 3+1 Capacity								
Open	0.44	6.58	0.88	13.14	1.80	26.94	1.80	43.76
Mainframe	0.43	6.50	0.87	13.01	1.77	26.61	1.77	43.20
Parity 7+1 Capacity								
Open	0.51	7.68	1.02	15.33	2.10	31.43	2.10	51.06
Mainframe	0.51	7.59	1.01	15.18	2.07	31.05	2.07	50.40

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.

* Actual capacity, using 300 GB drives for minimum drive count.

Disk Emulation

DMX800	Open Systems	3380K	3390-1	3390-2	3390-3	3390-9	3390-27	3390-54
MB/Volume	30,720	1,891	946	1,892	2,838	8,514	27,845	55,688
Bytes/Track	32,768	47,476	56,664	56,664	56,664	56,664	56,664	56,664
Bytes/Cylinder	491,520	712,140	849,960	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	65,520

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 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**	Width***	Depth****	Front Service Area	Rear Service Area	Weight	Power	Cooling
(in/cm)	(in/cm)	(in/cm)	(in/cm)	(in/cm)	(lb/kg)	(kVA)	(Btu/hr)
75.0/190.5	24.0/61.0	41.9/106.4	48.0/122.0	48.0/122.0	1,596/723.9	4.46	15,203

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.

*** An additional 18 in. (45.7 cm) is required for left-side clearance and 28 in. (71.1 cm) for right-side clearance.

**** Maximum depth in EMC cabinet. Also mountable in qualified racks 36.0 in. (91.4 cm) deep.

Power Specifications

Dual main and auxiliary power connections
 2N power supply redundancy for each component
 Modular power zones with two to six power modules

North America
 Input Voltage (VAC) 200–240, single phase
 Frequency (Hz) 47–63
 Circuit Breaker (Amps), recommended 30
 Power Drops 2
 Power Connector (2) L630P
 User Connector (2) L630R

International
 200–240, single phase
 47–63
 30
 2
 Country Specific
 Country Specific

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 Not required



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