

Symmetrix 3000 ICDA Systems

Open storage for open systems.

**Industry-leading performance and continuous data availability
for open systems.**

Data Sheet

Symmetrix 3000

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- 2 *Industry's highest performance*
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- 4 *Up to 32 concurrent FWD SCSI channels*
- 5 *High capacity with data protection*
- 6 *Data management made easy*



Symmetrix 3000 — A new level of data storage technology.

Open systems storage technology with mainframe-class capabilities.



Symmetrix 3000 Systems offer scalable data storage capacity ranging from 35GB to 559GB, fully protected.

Highlights

- **Open storage solution.**
Operating system independent, so you can easily share, manage, and reallocate storage capacity among leading UNIX® and other servers.
- **Industry's highest performance.**
Up to 4GB cache, 100% fast writes, intelligent caching algorithms, and I/O-level multiprocessing deliver the industry's highest performance.
- **Continuous availability.**
Disk mirroring, fully redundant hardware, and non-disruptive component replacement ensure constant data availability.

EMC's Symmetrix™ 3000 ICDA® Systems bring unprecedented levels of performance, capacity, manageability, and availability to open systems data storage. Through its operating system-independent technology, the Symmetrix 3000 Series enables you to consolidate storage for multiple UNIX and other servers. The result is a powerful data storage solution that is truly open — storage that is simple to manage, delivered in an architecture that is reusable, scalable, and protected.

Symmetrix 3000 Systems provide concurrent multihost support for a wide range of open system platforms and operating systems, including the IBM® RS/6000® running AIX®, the HP 9000® Series running HP-UX®, the Sun® SPARC® family running Solaris®, and others. Symmetrix 3000 also supports the IBM AS/400®. The Symmetrix 3000 does not require specialized host device drivers, so you can add new versions of server operating systems and server platforms, without operational impact. You can reallocate capacity or add new server platforms when application needs change, extending the life of your storage investment.

Symmetrix 3000 consolidates storage for multiple open systems servers, which reduces the growing cost and complexity of storage management. Your staff has just one storage system to learn and operate. 35GB to 559GB of fully protected capacity can be

allocated across different servers and managed centrally.

The scalability of Symmetrix 3000 offers you a powerful new way to manage change and growth in open systems environments. Scalable amounts of high-capacity storage, device channels, and high-performance cache ensure that you can accommodate growing databases, add more servers, and optimize performance.

Symmetrix 3000 Systems protect the largest relational databases and most demanding client/server applications with the highest degree of data protection — continuous availability. RAID 1 mirroring, full hardware redundancy, and non-disruptive component replacement ensure availability of your critical data.

Performance for your most demanding applications.

The Symmetrix 3000 Series extends EMC's industry-leading Symmetrix storage technology to open systems for the first time. Now the high-performance architecture that supports mainframe-based applications worldwide is available for open systems environments that support online transaction processing and other response-intensive applications.

Up to 4GB of non-volatile cache helps ensure that client/server applications run at top speed. In addition, EMC has developed

highly intelligent caching algorithms to produce high read hit ratios and 100% fast writes. These algorithms will actually self-adjust based on user access patterns to continuously improve performance.

In addition to its large, intelligent cache, Symmetrix 3000 Systems feature up to 144 individual microprocessors that can each process tasks independently. With this parallel processing in the I/O subsystem, Symmetrix 3000 can achieve levels of performance that result in dramatic reductions in both online response times and batch processing windows.

Performance excels right down to the device level in this storage solution. Symmetrix 3000 uses the fastest 5.25 inch drives available — each with its own controller and cache buffer to take full advantage of the system's multiprocessing capabilities.

Continuous availability.

EMC has designed Symmetrix 3000 Systems to ensure the highest levels of availability for your data, so that your business is not disrupted by downtime. The system's availability features are designed to provide continuous operation and include RAID 1 disk mirroring combined with active hardware redundancy, non-disruptive microcode updates, and non-disruptive component replacement.

- **Connectivity.**

Up to 32 fast-wide-differential (FWD) SCSI channels support the industry's highest multihost connectivity through fast, industry-standard interfaces.

- **High capacity.**

From 35GB up to 559GB of fully protected (RAID 1) storage provides room for the largest relational databases and client/server applications.

- **Manageability and maintenance.**

Consolidating data storage for multiple servers simplifies storage management; intelligent maintenance features help ensure problems are resolved quickly.

RAID 1 mirroring provides two copies of data on separate disk arrays to deliver maximum data availability without performance degradation. In addition, Symmetrix 3000 features redundancy in all active hardware, including disk directors, channel directors, system busses, batteries, and power supplies. Non-disruptive microcode updates and non-disruptive component replacement allow key components to be serviced without system downtime — keeping data online and available to users.

Full system non-volatility is further ensured by a battery backup system. In the event of a power failure, the battery backup keeps Symmetrix 3000 operating while data is degraded from cache to disk, enabling an orderly system shutdown without the loss of data.

Connectivity and capacity give you room to grow.

A broad range of Symmetrix 3000 models put scalable, high-capacity connectivity and capacity at your command, helping you manage growth in rapidly changing open systems environments.

Central to the open systems connectivity provided by Symmetrix 3000 is the Open Storage Director; a 4-channel, fast-wide-differential SCSI channel director feature. An Open Storage Director supports four simultaneous data transfer operations. Each channel can transfer at a rate up to 20MB per second. Symmetrix 3000 supports from two to eight Open Storage Directors (depending on model) and provides up to 32 FWD SCSI channels in maximum configurations.

Through the Open Storage Director, Symmetrix 3000 provides concurrent multi-host support for a wide range of open system platforms, including the IBM RS/6000, the HP 9000 Series, the Sun SPARC family running Solaris, and others. The IBM AS/400 is also supported.

The system architecture allows large amounts of storage capacity to be allocated across heterogeneous servers. It uses densely packaged disk arrays to deliver over a terabyte of storage in a single system. In addition, Symmetrix 3000 supports physical device sharing between heterogeneous operating environments, allowing a single drive or set of drives to be logically partitioned to different servers for greater configuration flexibility.

Smart data management and maintenance.

By consolidating data storage capacity for multiple servers, Symmetrix 3000 makes it easier to manage large amounts of open systems data. This efficient, consolidated approach to data management and system configuration minimizes the learning curve for you and your staff.

The Symmetrix 3000 architecture also goes a step further — by protecting the availability of your data with extensive intelligent maintenance features. An integrated Remote Maintenance Processor (RMP) monitors system operation at all times, including disk and cache media quality, data integrity, subsystem functionality, and a wide range of other parameters. When the RMP detects a potential problem, such as a disk or cache error, the system's automatic correction procedures can often fix the problem without the need for servicing.

In the event of a physical, electrical, or environmental fault, an error message is logged and the Auto-Call feature of EMC's Remote Maintenance Processor automatically notifies the EMC Customer Support Center. The RMP uses automatic error detection and threshold monitoring to detect threatening faults, and as a result, permits remedial action or preventive maintenance to be taken before system operations are affected.

The RMP also enables EMC Customer Support Center staff to dial into the system and run remote diagnostics to pinpoint a problem.

EMC service and support.

Symmetrix 3000 ICDA Systems are backed by EMC's highly skilled and dedicated service organization. EMC's base two-year warranty plan includes 7-day a week, 24-hour coverage. Post-warranty service offerings include 7 x 24 coverage, technical support, and service and maintenance contracts.

Underlying the Symmetrix 3000 design, and all members of EMC's Open Storage Family, is the MOSAIC:2000™ architecture. This unique architectural approach to storage system development is your assurance that an investment today is protected into the future. All EMC storage solutions are based on this architectural plan which allows easy upgrades in hardware, microcode, and functionality as technology advances.

Symmetrix 3000 Systems Technical Specifications

| Configuration Data | | | | | | |
|--------------------|---------------|------------------------|-----------------|--------------------|----------------------|----|
| Model Number | Capacity (GB) | Mirrored Capacity (GB) | Base Cache (MB) | Maximum Cache (MB) | SCSI Ports Min. Max. | |
| 3100-9008 | 70 | 35 | 512MB | 2,048MB | 8 | 16 |
| 3100-9012 | 105 | 52.5 | 512MB | 2,048MB | 8 | 16 |
| 3100-9016 | 140 | 70 | 512MB | 2,048MB | 8 | 16 |
| 3200-9016 | 140 | 70 | 512MB | 4,096MB | 8 | 16 |
| 3200-9024 | 210 | 105 | 768MB | 4,096MB | 8 | 16 |
| 3200-9032 | 279 | 139.5 | 1,024MB | 4,096MB | 8 | 16 |
| 3500-9032 | 279 | 139.5 | 1,024MB | 4,096MB | 8 | 32 |
| 3500-9048 | 419 | 209.5 | 1,024MB | 4,096MB | 8 | 32 |
| 3500-9064 | 559 | 279.5 | 1,024MB | 4,096MB | 8 | 32 |
| 3500-9080 | 699 | 349.5 | 1,792MB | 4,096MB | 8 | 32 |
| 3500-9096 | 838 | 419 | 1,792MB | 4,096MB | 8 | 32 |
| 3500-9112 | 978 | 489 | 2,560MB | 4,096MB | 8 | 32 |
| 3500-9128 | 1,118 | 559 | 2,560MB | 4,096MB | 8 | 32 |

| Features and Upgrades | |
|-----------------------|--|
| Model Number | Description |
| OSD4 | Open storage channel director, 4 port |
| 3000-92 | Symmetrix 3000 ICDA 175GB upgrade |
| 3000-94 | Symmetrix 3000 ICDA 35GB upgrade |
| 3000-98 | Symmetrix 3000 ICDA 70GB upgrade |
| CACHE256 | 256MB cache memory upgrade |
| CACHE768 | 768MB cache memory upgrade |
| CACHE1024 | 1,024MB cache memory upgrade |
| SRDF-3100 | Remote data facility license, Symmetrix 3100 |
| SRDF-3200 | Remote data facility license, Symmetrix 3200 |
| SRDF-3500 | Remote data facility license, Symmetrix 3500 |
| RLD2 | Remote link director, 2 port |

| Multi-Host Support | | | | | |
|--------------------|----------------------------|------------------|---|-------------------------|------------------------------|
| Vendor | Server | Operating System | Vendor | Server | Operating System |
| HP | HP 9000 Series 800 Servers | HP-UX | IBM | AS/400 Advanced Series™ | OS/400® |
| IBM | RS/6000 | AIX | IBM | PS/2® | NetWare®, Windows NT®, OS/2® |
| IBM | SP2 Series | AIX | Compaq® | ProLiant® | NetWare, Windows NT, OS/2 |
| Sun | SPARC Series | Solaris | For others see local representative * Stand-alone support only | | |
| AT&T® | System 3000 | SVR4 | | | |
| Sequent® | Symmetry® | DYNIX/ptx® | | | |

| Physical Specifications | | | | | | |
|-------------------------|----------------|---------------|---------------|----------------------------|---------------------------|--------------|
| Model Series | Height (in/cm) | Width (in/cm) | Depth (in/cm) | Front Service Area (in/cm) | Rear Service Area (in/cm) | Raised Floor |
| 3100 | 42.0/106.7 | 21.0/53.3 | 36.0/91.4 | 36.0/91.4 | 36.0/91.4 | required |
| 3200 | 73.3/187.0 | 24.3/61.6 | 36.4/92.5 | 48.0/122.0 | 36.0/91.4 | required |
| 3500 | 74.9/190.3 | 68.7/174.6 | 36.4/92.5 | 48.0/122.0 | 36.0/91.4 | required |

| Weight | | | |
|--------------|-----------|--------------|-------------|
| Model Number | lb/kg | Model Number | lb/kg |
| 3100-9008 | 644/293 | 3500-9032 | 3,138/1,424 |
| 3100-9012 | 677/308 | 3500-9048 | 3,245/1,475 |
| 3100-9016 | 710/323 | 3500-9064 | 3,366/1,527 |
| 3200-9016 | 1,221/555 | 3500-9080 | 3,479/1,578 |
| 3200-9024 | 1,301/591 | 3500-9096 | 3,593/1,630 |
| 3200-9032 | 1,381/628 | 3500-9112 | 3,706/1,681 |
| | | 3500-9128 | 3,820/1,733 |

| Power and Cooling Data | | | | | | | | | | | | | |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Model Number | 3100-9008 | 3100-9012 | 3100-9016 | 3200-9016 | 3200-9024 | 3200-9032 | 3500-9032 | 3500-9048 | 3500-9064 | 3500-9080 | 3500-9096 | 3500-9112 | 3500-9128 |
| Power Consumption (kVA) | 1.39 | 1.51 | 1.63 | 1.96 | 2.30 | 2.65 | 4.61 | 5.36 | 6.05 | 6.74 | 7.43 | 8.12 | 8.81 |
| Heat Dissipation (Btu/hr) | 4,731 | 5,151 | 5,571 | 6,690 | 7,850 | 9,000 | 15,935 | 18,290 | 20,645 | 22,999 | 25,354 | 27,709 | 30,063 |

| Power Specifications | | |
|------------------------------|---|------------------|
| Input Power | North America | International |
| Input Voltage (VAC) | 200 - 240 | Country Specific |
| Frequency (Hz) | 3100 - 50/60, single phase 3200 - 50/60, single phase 3500 - 50/60, single phase | Country Specific |
| Circuit Breaker (Amps), max. | 3100 - 20 3200 - 30 3500 - 30 | Country Specific |
| User Connector | 3100 - Russelstoll® 3913 flex 3100 - Russelstoll 3913 rigid 3200 - Russelstoll 3933 3500 - Russelstoll 3934 | Country Specific |
| Power Connector | 3100 - Russelstoll 3720 3200 - Russelstoll 3750 3500 - Russelstoll 3760DPG | Country Specific |
| Auto-Call Modem Requirements | The Auto-Call modem requires connection to a 110VAC power source at 60Hz through a NEMA 5-15R receptacle. International installations are country specific. | |

| Environmental Specifications (operating) | |
|--|---------------------------------|
| Temperature (°F/°C) | 59 - 90/15 - 32 |
| Altitude (ft/m) | 8,000/2,500 |
| Humidity (%), non-condensing | 10 - 80 (5 - 99, non-operating) |



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For more information.

Find out how Symmetrix 3000 Systems can help you enhance the value of your open systems data. Contact your EMC sales representative or authorized distributor today. Or call EMC directly at 1-800-424-EMC2.

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