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# SPARCstorage Array Series: The industry's most innovative storage solution.

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The one thing you demand from your information systems, above all else, is dependability. Benchmarks and gigabytes don't mean much if the system isn't up and running. But you don't need us to tell you that. What you need is an affordable solution that's easy to implement and even easier to maintain.

Our SPARCstorage(tm) Array subsystems provide an unmatched combination of capacity, performance, high availability, and manageability at surprisingly low prices. This line of disk arrays integrate a remarkable number of features -- RAID, hot spares, a high-speed fibre channel, and a dual-ported controller for system failover, to name just a few -- so you'll have something you can really use. Peace of mind.

### Capacity and performance that scale in concert

Because of their modular design, both the SPARCstorage Array 100 Series and 200 Series can easily and cost-effectively add storage capacity and performance.

The base configuration of the compact, stackable SPARCstorage Array 100 Series includes six high-performance, low-profile disk drives, and you can add two dozen more. For even greater capacity, you can connect two arrays to each SBus slot on the host system. So, whether you're dealing with hundreds of gigabytes or even a terabyte or more, these subsystems will do the job.

For enterprise servers that require multiple terabytes of capacity, there's the cabinet-size SPARCstorage Array 200 Series. Combined with our SPARCcenter(tm) 2000 server, it delivers the scalability needed for large mission-critical data center applications at an exceptionally low price per gigabyte. With the 200 Series, you can connect up to 36 large form factor drives for up to 300 gigabytes in a single cabinet -- with the added benefit of protecting your investment in 5.25-inch disks.

Furthermore, the SPARCstorage Array's intelligent controller, with nonvolatile cache, offloads the I/O processing burden from the server so performance increases as you add more arrays to your system.

With their leading-edge fibre channel interface, our SPARCstorage Array subsystems give you more bandwidth than other disk arrays. They also allow you to use fiber-optic cables as long as two kilometers, so the host system and the disk array can reside in different buildings. That way, even in the event of a fire or other disaster, your data will be safe.

### Putting an end to unplanned downtime

To ensure that you won't lose any data -- even if a disk drive should fail -- our SPARCstorage Array subsystems provide RAID levels 5, 1, and 0+1. They even give you the additional flexibility of RAID 0 and independent disks, all at the same time. So you can choose the ideal configuration to match your requirements for availability, performance, capacity, and price.

With the hot-spare option, you have the luxury of choosing the most convenient time to replace a faulty disk. A built-in spare goes to work automatically, rebuilding your data and restoring the system to full speed. And when you're ready, replacing a disk in the 100 Series takes less than a minute -- no tools required. With our warm-plug feature, you don't even have to shut off the power. Which means you don't have to reboot.

Should you want even more peace of mind, our SPARCstorage Array products are also backed by SunService, one of the industry's highest rated service and support organizations. But the beauty of these innovative disk arrays is just how much you can do for yourself.

Almost all administrative tasks can be handled on line. You can monitor component status, tune performance, even reconfigure the

system using simple point-and-click, drag-and-drop commands -- all while users continue to access information and run all their applications.

In other words, our SPARCstorage Array subsystems not only make system administrators' lives easier, they can make your whole business more productive.

## SPARCstorage Array Series Specifications

```
Common to Model 100 and Model 200 Series
```

```
Main Memory
-----------
Main processor         SPARC® Version 8, microSPARC
Read/write cache4 MB nonvolatile RAM on board
                       (battery module on daughter card)
Bus/cache controller   Sun Bus Interface and NVRAM Controller ASIC
Interfaces to host     Fibre channel
                       Sun Serial Optical Channel ASIC
                       Dual ported (optional)
Internal SCSI channels Six intelligent, low-overhead processors
                       Fast/wide (20 MB/sec) SCSI-2
```

```
Host System Interface
---------------------
SBus card              Single-width fibre channel SBus card
                       Sun Serial Optical Channel ASIC
                       Up to 2 arrays per card
```

```
Fibre Channel Interface
-----------------------
Standards              ANSI Fibre Channel FC-PH Rev 4.2, X3T11-755D
                       ANSI SCSI Fibre Channel Protocol Rev 8, X3T10-993D
Optical modules        25 MB/sec (266 Mb/sec) full duplex
                       780 nanometer shortwave laser
Fiber cable type50/125 micrometer multimode, ST type connectors
Maximum cable length   2 kilometers
```

```
Software
--------
SPARCstorage Volume    Included with array subsystem
  Manager              X/Motif® graphical user interface
                       Virtual storage management
                       Independent disks, volume concatenation
                       RAID levels 0 (striping), 1 (mirroring),
                         0+1 (mirrored stripes), and 5 (striping with
                         rotated parity)
                       On-line storage reorganization and load balancing
                       Visual performance displays for tuning
                       Complete status displays
                       Command line interface also provided
```

```
Specific to Model 100 Series
```

```
Packaging
---------
Subsystem includes     Intelligent array controller
                       6 to 30 disk drives in 3 trays
                       High reliability power supply
                       3 variable-speed fans with rotation and
                         temperature sensors
                       LCD panel with status displays for disk drives,
                         fans, NVRAM battery, fiber links, controller,
                         and power on self-test
Standard mounting      Table top
Mounting optionsTower stand
                       Stacking kit with power distribution base
                       Locking module
```

```
                        Rack-mount kit
```

Disk Drives
-----------
```
Form factor             3.5-in. low-profile Single Connector
Supported drives2.1-GB 7200 RPM fast-wide SCSI-2
                        1.05-GB fast/wide SCSI-2
                        535-MB fast SCSI-2
```

Environment
-----------
```
AC Power         100-240 VAC, 47-63 Hz, 6.5 amps at 100 VAC
Operating               10° C to 40° C (50° F to 104° F)
                        20% to 80% relative humidity, noncondensing
Nonoperating            -20° C to 60° C (-4° F to 140° F)
                        5% to 95% relative humidity, noncondensing
Operating acoustic noise 6.0 bels (at 25° C)
```

Regulations
-----------
```
Meets or exceeds the following requirements:
Safety                  UL 1950, CSA 950, TUV EN 60950
                        Class 1 laser requirements per CFR 21, Part 1040
                        and IEC 825
RFI/EMI                 FCC Class B, DOC Class B, VCCI Class 2,
                        EMC Directive (89/336/EEC), EN55022 Class B
Immunity         EMC Directive (89/336/EEC), EN55082-1
Harmonics               EMC Directive (89/336/EEC), EN60555-2
```

Dimensions and Weight
---------------------
```
Height                      22.7 cm (8.94 in.)
Width                       49.4 cm (19.46 in.)
Depth                       53.5 cm (21.06 in.)
Weight (without disk drives)   30 kg (66 lb.) approx.
Weight (with 30 disk drives)   48 kg (106 lb.) approx.
Power cord                  1.83 meters (6 feet)
```

Specific to Model 200 Series

Packaging
---------
```
Subsystem includes      Intelligent array controller
                        Two SCSI interface boards, each with 3 fast/wide
                          differential SCSI-2 interfaces
                        Display board with status displays for fans,
                          NVRAM battery, fiber links, controller, and
                          power on self-test
                        High reliability power supply
                        Cooling system including two fans with rotation and
                          temperature sensors
Ordered separately      Disk drive trays
                        Data center cabinet
Mounting         Rack-mount
Disk drive traysUp to 6 trays per Model 200 subsystem
                        2 to 6 drives per tray
                        Separate power supply and cooling in each tray
                        Status LEDs for each drive
```

Disk Drives
-----------
```
Form factor             5.25-in. full height
Supported drives9-GB fast/wide SCSI-2
                        2.9-GB fast/wide SCSI-2
                        2.1-GB fast SCSI-2
```

Environment
-----------
```
AC Power         200-240 VAC, 47-63 Hz, 24 amps
```

```
Operating                 10° C to 40° C (50° F to 104° F)
                          20% to 80% relative humidity, noncondensing
Nonoperating              -20° C to 60° C (-4° F to 140° F)
                          5% to 95% relative humidity, noncondensing
Operating acoustic noise 6.0 bels (at 25° C)
Declared noise emissions in accordance with ISO 9296
```

```
Regulations
-----------
Meets or exceeds the following requirements:
Safety                    UL 1950, CSA 950, TUV EN 60950
                          Class 1 laser requirements per CFR 21, Part 1040
                          and IEC 825
Complies with the following when installed in a Sun data center cabinet:
RFI/EMI                   FCC Class A, DOC Class A, VCCI Class 2,
                          EMC Directive (89/336/EEC), EN55022 Class B
Immunity          EMC Directive (89/336/EEC), EN55082-1
Harmonics                 EMC Directive (89/336/EEC), EN60555-2
```

```
Dimensions and Weight
---------------------
Height                    143 cm (56 in.)
Width                     77 cm (30 in.)
Depth                     99 cm (39 in.)
Weight (with 36 disk drives)   394 kg (867 lb.) approx.
Power cord                4.6 meters (15 feet)
```

**Questions or comments regarding this service?** *webmaster@sun.com*