

Oceanspace S5000



Huawei Symantec



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Huawei Symantec Oceanspace S5000 series is the first end-to-end FC-based storage product with independent intellectual property rights in China. The S5000 is designed for the mid-range and high-end storage markets with best-in-class features such as high density, FC and iSCSI connectivity, modular ports, and multi-level data protection mechanism. It ensures data integrity and service continuity while meeting the requirements of large databases, high performance computing, online transaction processing (OLTP), centralized storage, data migration, data backup, and disaster recovery.

Product Features

High Performance

- **64-bit multi-core architecture:** The S5000 delivers enhanced processing capability with 64-bit multi-core processors, 64-bit dual-channel memory modules, 64-bit 10 Gb/s system buses, and 64-bit real-time operating system.
- **Solid state drives (SSDs):** Significantly increases overall performance of the S5000.
- **Application-oriented patented I/O algorithm:** Dynamically adjusts the read/write mode of hard disks according to the read/write mode of the hosts.
- **Dynamic load balancing:** The two hot-backup controllers of the S5000 execute I/O operations concurrently while mirroring the write cache of each other with two dedicated channels.

Robust Reliability

- **Built-in UPS:** Protects data against power failure with the built-in UPS.
- **Pre-copy technology:** Prevents data loss with advanced faulty disk detection.
- **Bad sector repair:** Prolongs the service life of hard disks by lowering the failure rate by 50%.
- **Global hot spare:** Acts as the hot backup for data disks within the same enclosure or across enclosures, and offers flexibility for the hot spare disk slots.
- **Advanced data protection technologies:**
Boosts data protection with the value-added features:
The controller cache mirroring mechanism improves data availability.
HyperImage generates real-time snapshots of online data so that

data can be restored from the snapshots instantly. **HyperImage** can also generate multiple point-in-time snapshots to provide continuous data protection.

HyperCopy, an across-platform volume copy technology, enhances data protection among heterogeneous storage devices.

HyperMirror implements remote disaster recovery.

Reduced TCO

- **Modular ports:** The combination of FC and iSCSI host ports enables an FC+IP SAN. Up to 16 host ports are provided to cut the investment and maintenance costs on switches.
- **High disk density:** 1U space can house six hard disks. An expansion disk enclosure can house 24 hard disks, lowering the expansion cost by 60%.
- **Tiered storage:** Delivers higher performance at a lower cost by moving data among multiple storage tiers (SATA, FC, and SSD).
- **User-friendly management and maintenance designs:** Simplifies the management through web-based GUI and programmable CLI, and reduces operational and maintenance costs with fault alarming by SMS, email, sound and light.

Low Power Consumption

- **Energy-saving hard disks:** Lowers power consumption by more than 40% with automatic spin-down or speed-down of hard disks.
- **High-speed air cooling:** Doubles the air cooling efficiency with an advanced hydromechanics design.
- **Intelligent fan control:** Enables the S5000 adaptable to environment changes and lowers system power consumption by nearly 15%.

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Technical Specifications

Model	S5300	S5500	S5600
Basic Specifications			
Architecture	Dual-controller (active-active)		
Processor	64-bit multi-core CPU		
Cache	4 or 8 GB	8 or 16 GB	16 or 32 GB
Number of host ports	Eight 4 Gb/s FC ports, or four 4 Gb/s FC ports + four GE ports, or sixteen 8 Gb/s FC ports, or eight 8 Gb/s FC ports + four 10GE ports	Sixteen 4 Gb/s FC ports, or eight 4 Gb/s FC ports + four GE ports, or sixteen 8 Gb/s FC ports, or eight 8 Gb/s FC ports + four 10GE ports	Sixteen 4 Gb/s FC ports, or eight 4 Gb/s FC ports + four GE ports, or twelve 8 Gb/s FC ports, or four 8 Gb/s FC ports + four 10GE ports
Number of hard disks	120	120 or 240	240 or 480
Disk specifications	SATA disk: 1 TB/2 TB (7,200 rpm)		
	FC disk: 300 GB/450 GB/600 GB (15,000 rpm)		
	SSD: 100 GB/200 GB		
Disk density	24 bays per enclosure		
Disk density	24 bays per enclosure		
Number of host connections	256	256	256
LUNs	1,024	1,024	2,048
RAID			
RAID level	0, 1, 3, 5, 6, 10, 50		
Reliability			
Parts redundancy	Controllers, power supplies, fans, UPSs, expansion disk enclosures		
Disk protection	Global hot spare, disk pre-copy, bad sector repair, disk health analysis (DHA)		
Power failure protection	Coffer, built-in UPS		
Host Compatibility			
Operating system	Windows, Linux, Solaris, HP-UX, AIX, FreeBSD, MAC OS X		
Others	VMware, Hyper-V, XenServer		
Software			
Host multipathing	UltraPath (Windows/Linux/AIX), STMS (Solaris), PV-Links (HP-UX)		
Value-added software	HostAgent, HyperImage, HyperCopy, HyperMirror/A, HyperMirror/S		
Regulation compliance	WORM		
Management			
Management method	ISM		
Fault alarming	ISM display, SMS, email, SNMP, sound and light		
Remote management	Remote access through Web or dial-up modem		
Physical Characteristics			
Power supply	200 V to 240 V AC (50/60 Hz), -48 V to -60 V DC		
Power consumption (controller enclosure)	AC: < 810 W	AC: < 820 W	AC: < 840 W
	DC: < 750 W	DC: < 760 W	DC: < 780 W
Power consumption (disk enclosure)	AC: < 670 W		
	DC: < 620 W		
Dimensions (H x W x D)	4U, 175 mm x 446 mm x 600 mm		
Weight	< 45 kg (without hard disks)		

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