XCubeSAN
XS1226

QSAN

The Perfect SAN Solution for SMB Market

QSAN XS1226 is the most cost-effective SAN storage system for the SMB market. It is a perfect solution to the applications of surveillance, backup and for disaster recovery in SMB which can reduce capital expenditure and achieve maximum efficiency at the same time.

Product Highlights

- High Performance SAN storage system with Dual-Active (Active/Active) controller
- High availability design with no single point of failure
- 5th generation Intel® 2-core processor, up to 32GB RAM per controller
- Latest 12Gb SAS 3.0 technology
- Built-in 10GbE iSCSI
- Up to 9,000MB/s sequential read and 4,500MB/s sequential write throughput. up to 900k sequential IOPS
- Scale up solution supports over 6.9PB of raw storage capacity
- QSAN SANOS (SAN Operating System) 4.0
- Advanced Storage Management
    - Thin Provisioning
    - SSD Cache (read and write cache)
    - Auto Tiering
    - Snapshot
- Flexible I/O host cards for iSCSI SAN or Fibre Channel SAN
- Local clone and remote replication for disaster recovery
- Virtualization support for VMware VAAI, Microsoft Hyper-V ODX, and Citrix
- Cache-to-Flash memory protection technology

Application Areas

With the next generation storage platform, the XS1200 series is positioned to provide excellent values for customers and can enable enterprise applications, such as

- Backup and disaster recovery : Symantec, Commvault, Veeam, Acronis
- Surveillance : mega structure (shopping mall/skyscraper), public transportation (airport/train station/highway), secure and smart city infrastructure

XS1226 Product Specifications

Appearance
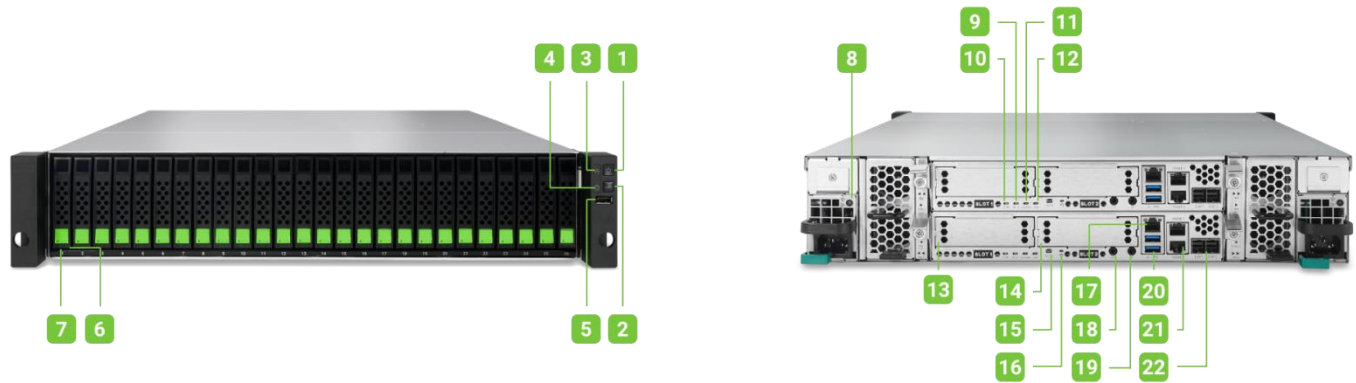
1. Enclosure Power Button / LED	7. Disk Drive Status LED
2. UID (Unique Identifier) Button / LED	8. Power Supply Unit – PSU Indicator and Beep Off Button
3. Enclosure Access LED	9. Controller Status LED
4. Enclosure Status LED	10. Master / Slave LED (only for dual controllers)
5. USB Port	11. Dirty Cache LED
6. Disk Drive Power LED	12. UID (Unique Identifier) LED

13. Host Card Slot 1 (host card is an optional part)	19. Service Port
14. Host Card Slot 2 (host card is an optional part)	20. USB Port
15. Buzzer Mute Button	21. 10GbE iSCSI Port
16. Reset to Factory Default Button	22. 12Gb/s SAS Wide Port
17. Management Port	
18. Console Port	

Hardware Specifications

Architecture	Dual (Active-Active)
CPU	
Processor	Intel® 64-bit Dual-Core
Memory	
System Flash	-
Memory Module Pre-installed	4GB DDR4 ECC DIMM (per controller)
Total Memory Slots	2 (per controller)
Memory Expandable up to	32GB (per controller)
Storage	
Drive Bays	2.5" Slot x 26
Maximum Drive Bays with Expansion Unit	434
Compatible Drive Type	2.5" SAS SSD / SAS SED SSD, 2.5" SATA SSD / SATA SED SSD (*) 2.5" SAS HDD / SAS SED HDD, 2.5" NL-SAS HDD / NL-SAS SED HDD (*) 6Gb MUX board needed for 2.5" SATA drives in dual controller system
Drive Interface	SAS 12Gb/s
Maximum Internal Raw Capacity	399TB
Maximum Raw Capacity with Expansion Units	6,927TB
Hot Swappable Drive	Yes
External Port	
USB 2.0 Port	1 (Front)
USB 3.0 Port	-
Others	UPS Port x 1, Console Port x 1
Connectivity Port	
1GbE RJ45 LAN Port	1 (Onboard Management Port)
10GbE RJ45 LAN Port	2 (Onboard) / 2 iSCSI (Option: HQ-10G2T)
10GbE SFP+ LAN Port	4 iSCSI (Option: HQ-10G4S2)
25GbE SFP28 LAN Port	2 iSCSI (Option: RHCE25P2)
16Gb SFP+ Fibre Channel	4 (Option: HQ-16F4S2) / 2 (Option: HQ-16F2S2)
32Gb SFP28 Fibre Channel	2 (Option: RHCF32P2) (will be available in Q3, 2020)

Expansion Port	
12Gb/s SAS Wide Port	2 (Onboard)

Host Card Expansion	
Gen3x8 Slot	1
Gen2x4 Slot	1

Appearance	
Dimension (H x W x D) (mm)	88 x 438 x 491
Chassis Form Factor	19" Rackmount 2U 26 Bay
Net Weight (kg)	16.3
Gross Weight (kg)	18.6

Memory Protection	
Cache-to-Flash Module	Yes
Battery Backup Module + Flash Module	Yes

Others	
System Fan	4 pcs
Replaceable System Fan	Yes
Power Recovery	Yes
Scheduled Power On/Off	-
Wake on LAN/WAN	Yes
Power Supply Unit / Adapter	770W/850W x 2 (80 PLUS Platinum)
Redundant Power Supply	Yes
AC Input Power Voltage	100V-240V
Power Frequency	50-60 Hz, Single Phase
Power Consumption	429W
British Thermal Unit	1,464BTU
LCM Support	Yes

Environment Temperature	
Operating Temperature	0°C to 40°C
Storage Temperature	-10°C to 50°C
Operating Relative Humidity	20% to 80% non-condensing
Non-operating Relative Humidity	10% to 90%

Certification	
Certifications	CE, FCC, BSMI, VCCI, KCC

Warranty	
Standard Warranty	3 years Battery backup module / Super capacitor module : 1 year

Software Specifications

Operating System	• 64bit embedded Linux
Storage Management	• RAID level 0 ,1 ,0+1 ,3 ,5 ,6 ,10 ,30 ,50, 60, and N-way mirror • RAID EE level 5EE, 6EE, 50EE, and 60EE • Flexible storage pool ownership • Thin Provisioning (QThin) with space reclamation • SSD Cache (QCache[1]) • Auto Tiering (QTiering[1]) • Global, local, and dedicated hot spares • Write-through and write-back cache policy • Online disk roaming • Spreading RAID disk drives across enclosures • Background I/O priority setting • Instant RAID volume availability • Fast RAID rebuild • Online storage pool expansion • Online volume extension • Online volume migration[2] • Auto volume rebuilding • Instant volume restoration • Online RAID level migration • SED & ISE drive support • Video editing mode for enhanced performance • Disk drive health check and S.M.A.R.T. attributes • Storage pool parity check and media scan for disk scrubbing • SSD wear lifetime indicator • Disk drive firmware batch update • Volume QoS (Quality of Service) • Advanced disk awareness

![QSAN logo]

iSCSI Host Connectivity	• Proven QSOE 2.0 optimization engine • CHAP & mutual CHAP authentication • SCSI-3 PR (Persistent Reservation for I/O fencing) support • iSNS support • VLAN (Virtual LAN) support • Jumbo frame (9,000 bytes) support • Up to 256 iSCSI targets • Up to 512 hosts per controller • Up to 1,024 sessions per controller
Fibre Channel Host Connectivity	• Proven QSOE 2.0 optimization engine • FCP-2 & FCP-3 support • Auto detect link speed and topology • Topology supports point-to-point[3] and loop • Up to 256 hosts per controller
High Availability	• Dual-Active (Active/Active) SAN controllers • Cache mirroring through NTB bus • ALUA support • Management port seamless failover • Fault-tolerant and redundant modular components for SAN controller, PSU, FAN module, and dual port disk drive interface • Dual-ported HDD tray connector • Multipath I/O and load balancing support (MPIO, MC/S, Trunking, and LACP) • Firmware update with zero system downtime
Security	• Secured Web (HTTPS), SSH (Secure Shell) • iSCSI Force Field to protect from mutant network attack • iSCSI CHAP & mutual CHAP authentication • SED & ISE drive support
Storage Efficiency	• Thin Provisioning (QThin) with space reclamation • Auto Tiering (QTiering[1]) with 3 levels of storage tiers
Networking	• DHCP, Static IP, NTP, Trunking, LACP, VLAN, Jumbo frame (up to 9,000 bytes)

Advanced Data Protection	• Snapshot (QSnap), block-level, differential backup
	  • Writeable snapshot support
	  • Manual or schedule tasks
	  • Up to 64 snapshots per volume
	  • Up to 64 volumes for snapshot
	  • Up to 4,096 snapshots per system
	• Remote Replication (QReplica)
	• Asynchronous, block-level, differential backup based on snapshot technology
	  • Traffic shaping for dynamic bandwidth controller
	  • Manual or schedule tasks
	  • Auto rollback to previous version if current replication fails
	  • Up to 32 schedule tasks per controller
	• Volume clone for local replication
	• Configurable N-way mirroring
	• Integration with Windows VSS (Volume Shadow Copy Service)
	• Instant volume restoration
	• Cache-to-Flash memory protection[1]
	  • M.2 flash module
	  • Power module: BBM (Battery Backup Module) or SCM (Super Capacitor Module)
	• Support USB UPS and network UPS with SNMP management

Virtualization Certification	• Server Virtualization & Clustering • Latest VMware vSphere certification • VMware VAAI for iSCSI & FC • Windows Server 2012 R2, 2016 Hyper-V certification • Microsoft ODX • Latest Citrix XenServer certification
Easy Management	• USB LCM[1], serial console support, online firmware update • Intuitive Web management UI, secured web (HTTPS), SSH (Secured Shell), LED indicators • S.E.S. support, S.M.A.R.T. support, Wake-on-LAN, and Wake-on-SAS • RESTful API support
Green & Energy Efficiency	• 80 PLUS Platinum power supply • Wake-on-LAN to turn on or wake up the system only when necessary • Auto disk spin-down
Host Operating Systems Support	• Windows Server 2008, 2008 R2, 2012, 2012 R2, 2016 • SLES 10, 11, 12 • RHEL 5, 6, 7 • CentOS 6, 7 • Solaris 10, 11 • FreeBSD 9, 10 • Mac OS X 10.11 or later
Note	[1] The function is optional and is not included in the default package. [2] The feature is based on RAID level migration of disk groups on the fly in thick provisioning pools. [3] 16Gb/32Gb Fibre Channel only supports Point-to-Point topology.