Qsan

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PRODUCT GUIDE

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Qsan at a Glance

Qsan is a specialized manufacturer of networked storage solutions. Its iSCSI- and Fibre Channel SANs and unified storage products provide outstanding performance, reliability, and cost-effectiveness to large enterprises and smaller businesses in more than 30 countries around the world.
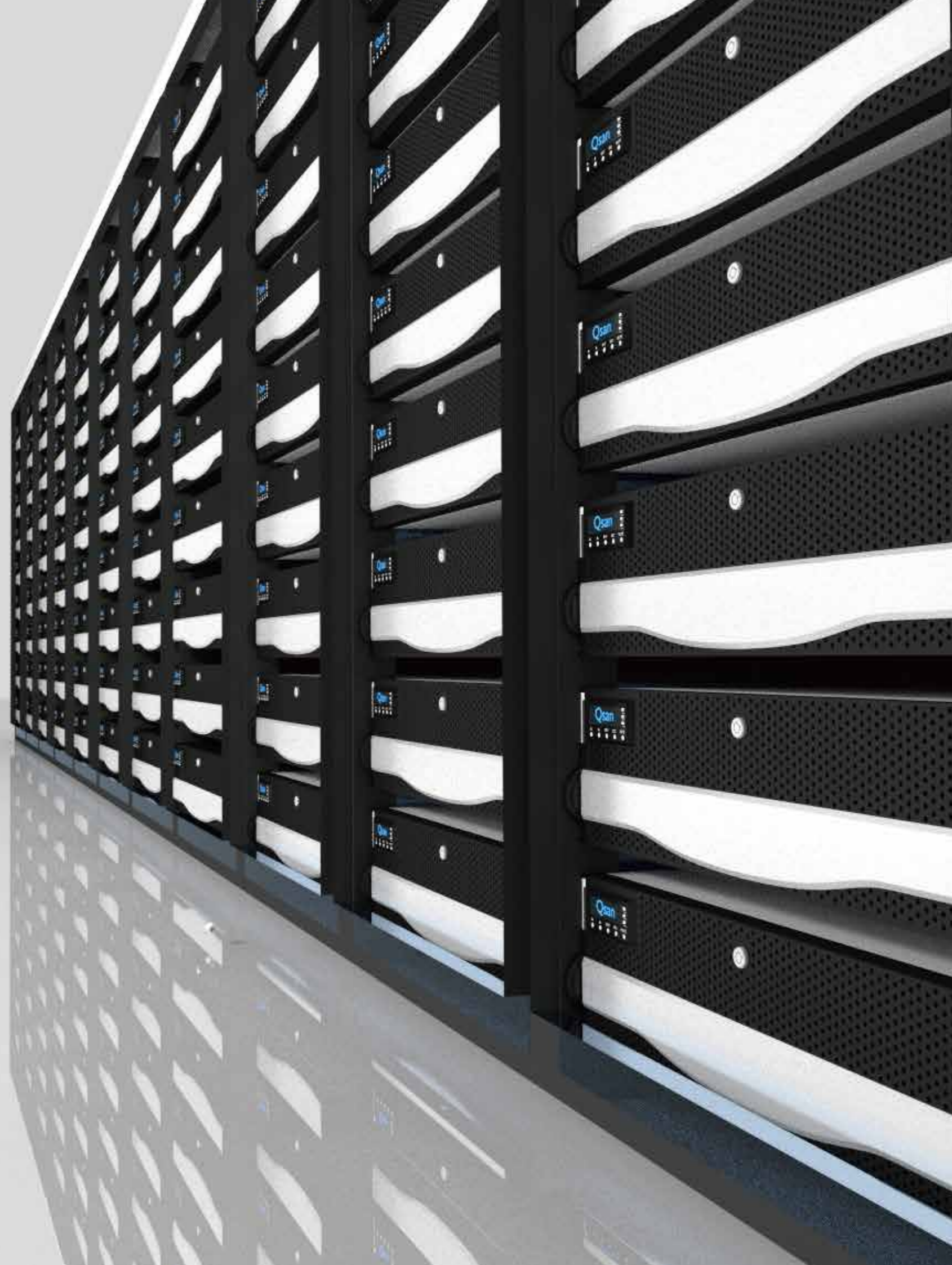
Qsan's capabilities have enabled it to achieve a number of industry firsts, such as being the first vendor to offer iSCSI controllers and the first to work closely with Intel to introduce a Fibre Channel over Ethernet product.

Excellence Research & Development Team

Qsan emphasizes strong R&D, with engineers accounting for more than half of its workforce. Drawing on its extensive R&D resources, Qsan develops core technologies in-house, enabling the company to provide customers best-of-class solutions with exclusive value-added features in hardware and software.

Awards

Qsan and its products have been the recipients of numerous awards at industry exhibitions and from professional media. Among these are a PC Pro Recommended award for the AegisSAN 1GbE IP SAN product, and, even more recently, the United Kingdom's IT Pro Value citation for the AegisSAN LX P600Q disk array.

The Qsan Advantage

Network storage expertise

The key to Qsan's success in the market is that we have cultivated the know-how and resources to develop core storage technologies in-house. This enables us to offer sophisticated features and optimized solutions at a lower cost, passing on the savings to customers.

Enterprise-class solutions for small businesses

Qsan products have been acclaimed for making extraordinary features, advanced technology, and outstanding performance accessible to price-sensitive segments such as small businesses. Encompassing hardware, software, and support, Qsan solutions offer smaller-scale organizations a level of capabilities and reliability that was previously affordable only to much larger organizations.

Integrated software

Qsan hardware is matched to a wide range of powerful software that add tremendous value. This software includes utilities for thin provisioning, writable snapshots, remote replication and much more. Best of all, these capabilities are available to users of Qsan systems without the need for additional license fees.
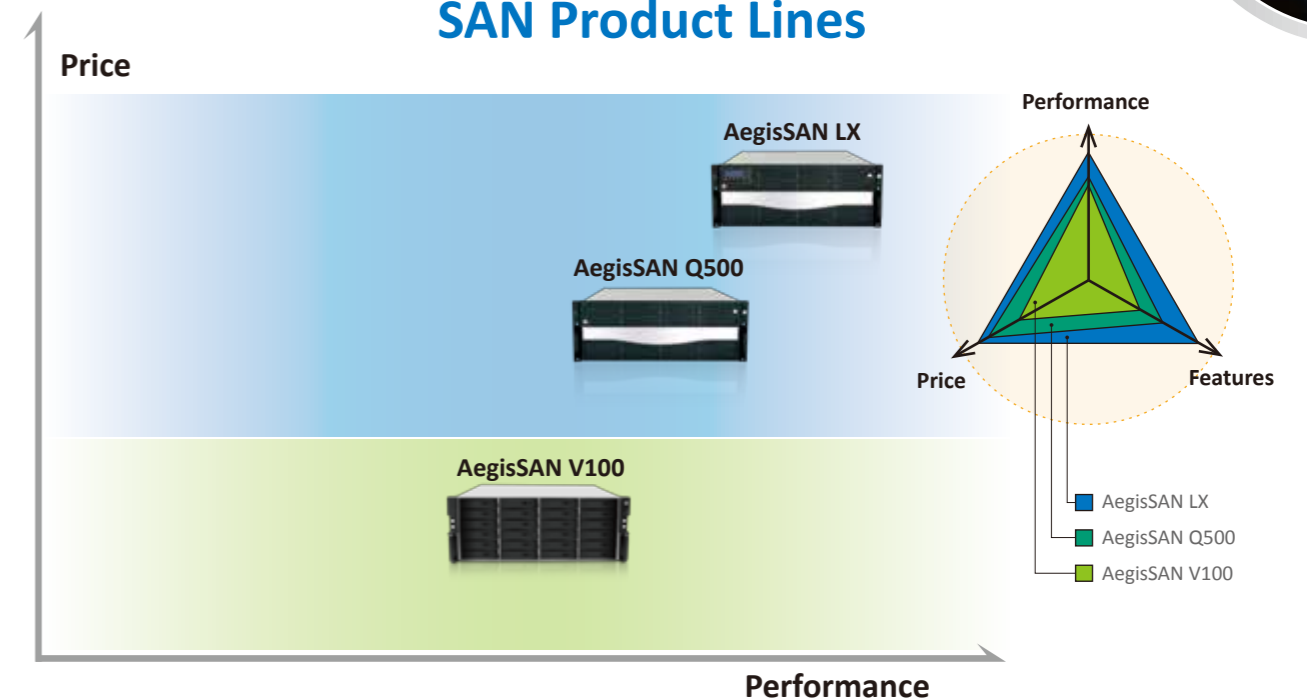
Greater flexibility

Unlike many prominent vendors, who require that customers buy hard disks from them as part of a preconfigured package, with Qsan customers are free to select the storage media that best fits their needs in terms of price, specifications, or other requirements. Moreover, this flexibility extends to business arrangements, as Qsan can support OEMs, channel vendors, system integrators, or simply those seeking controllers, backplanes, or software.
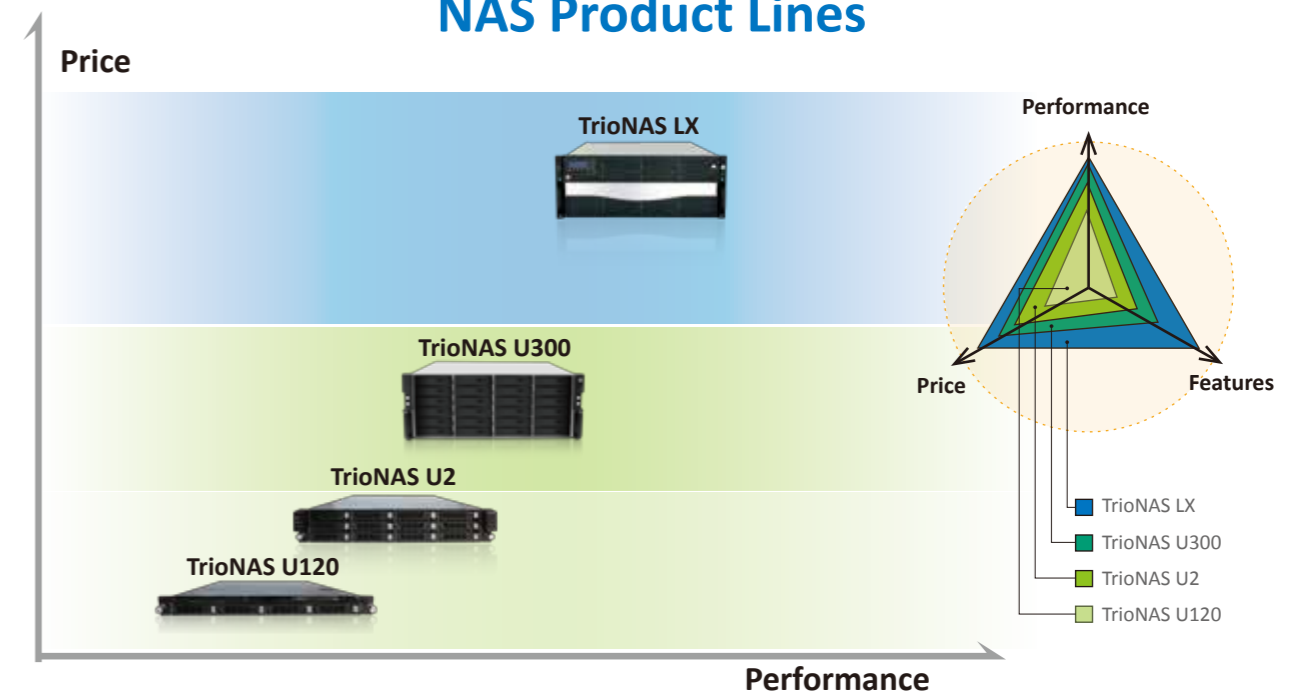
Comprehensive product lineup

Qsan maintains a comprehensive lineup of outstanding products to meet virtually any storage need. Both SAN and NAS systems are available, providing solutions for block-level and file-level storage applications, in form factors ranging from small-scale 1U 4-bay to high-density 4U 60-bay systems. On the technology front, Qsan offers products for iSCSI, Fibre Channel, Serial Attached SCSI (SAS), and Fibre Channel over Ethernet (FCoE) storage networking protocols, as well as systems based on a JBOD drive architecture in addition to RAID. A recent breakthrough came with our ZFS-based unified storage solutions—which combine the functionality of a SAN, NAS, and cloud storage—and which are now our fastest-growing product line.

Qsan Product Lines

SAN Product Lines

Price

AegisSAN LX

AegisSAN Q500

AegisSAN V100

Performance

Performance

Price   Features

- AegisSAN LX
- AegisSAN Q500
- AegisSAN V100

NAS Product Lines

Price

TrioNAS LX

TrioNAS U300

TrioNAS U2

TrioNAS U120

Performance

Performance

Price   Features

- TrioNAS LX
- TrioNAS U300
- TrioNAS U2
- TrioNAS U120

State-of-the-Art Technology

High availability

Qsan storage systems are designed to ensure high availability, with redundant hot-swappable components including RAID controllers, power supplies, and fan modules, as well as battery backup modules and Serial SCSI expansion ports for JBOD storage. Features in firmware, such as RAID 6/60 support, writable snapshots, and remote replication provide an additional layer of protection for your data.

Hardware offload engine

Qsan's storage systems incorporate the company's hardware offload engine—QiSOE for iSCSI products and fcQiSOE for Fibre Channel products—which uses a dedicated CPU core to process data packets. The result is dramatically enhanced performance for sequential reads and writes, as well as random access of data.

SSD caching

SSD caching has been expanded from Qsan's NAS products to its SAN solutions, bringing the technology's benefits of dramatically faster I/O and low latency to a wider range of customers. Qsan's implementation enables the system to cache both reads and writes to provide enhanced performance across the greatest possible range of applications and usage cases.

Fast disk rebuilding

Disk failures are never welcome, but given a long enough time scale they are inevitable, so it is critical to be prepared for the eventuality. The fast disk rebuild capability built into Qsan's RAID solution does just that, ameliorating the impact of potentially catastrophic disk failures, quickly rebuilding RAID data and preventing interruptions to business operations that rely on that data.

Robust data replication

Qsan provides a comprehensive data replication and disaster recovery solution with QSnap and QReplica. QReplica offers remote replication across storage systems over LAN or WAN, with powerful features like the ability to replicate multiple logical volumes on one system simultaneously and network traffic shaping. QReplica 2.0, the next generation of Qsan's technology, adds advances such as support for more replication ports, enhanced connectivity, and more replication tasks per controller.

Data deduplication and compression

+95%

Qsan's DeDup reclaims storage capacity by identifying and eliminating redundant copies of data. DeDup works in real time at the block level, providing more efficient data deduplication than do competing technologies that are only able to eliminate duplicated data at the file level. Depending on the particular type of storage application, DeDup plus compression can reduce data size by up to 95%, lowering storage capacity needs and making possible significant cost savings.

Thin provisioning

Qsan offers robust thin provisioning capabilities through its QThin software, which optimizes utilization of available storage by facilitating on-demand allocation of blocks of data, avoiding the situation where large pools of storage capacity are allocated to individual servers but remain unused. With QThin, storage capacity utilization efficiency can be dramatically improved with very little administrative overhead, allowing organizations to purchase less storage capacity initially, defer storage capacity upgrades until actual usage levels require them, and save on the costs associated with maintaining unused disk capacity.

Active Directory integration

Qsan's TrioNAS provides superior Windows Active Directory integration, with support for multiple Active Directory domains and common network topologies. In addition, a single account provides access to resources across the organization, and Qsan's Active Directory integration makes our systems suitable for remote workers and branch offices.

Unified Active Directory-based authentication

Qsan's patent-pending UnifiedAUTH technology allows administrators to manage user accounts via Active Directory without extra overhead. In addition, users can use their Active Directory account names and passwords to log in from a wide variety of client devices, including Windows, Linux, and the Mac, as well as over FTP and WebDAV, and using CHAP authentication within iSCSI.

Integrated virtualization support

Qsan's storage virtualization pools physical storage from multiple network storage devices so that they appear as a single device, helping administrators perform backup, archiving, and recovery more easily and in less time. Qsan storage systems support the virtualization technologies of VMware, Citrix, and Hyper-V.

Backup verification

Qsan technology has achieved compatibility certification for both Veeam and Acronis data protection software, ensuring users of our entire range of iSCSI and FC AegisSAN storage arrays that they can take advantage of Veeam and Acronis data center technology to ensure the integrity of data backups and that recovered virtual machines will function as expected.

Customers Endorsement

The Italian Institute for Space Astrophysics and Planetology supports hundreds of scientists with an enormous and expanding database of scientific data, choosing Qsan's AegisSAN LX F600Q 8G Fibre Channel dual-controller RAID systems to meet these users' demanding performance and availability requirements.

Glasshouse College in the UK sought to upgrade its storage infrastructure, as new IT initiatives such as the expanded use of digital imaging equipment dramatically increased data storage needs. The College chose Qsan's AegisSAN P300Q 1GbE iSCSI SAN, and technical services manager Andrew Faulkes remarked, "The Qsan system has exceeded our expectations. It is great value for money, offers impressive data protection and scalability and is so easy to use I almost forget about it. The technical support from Qsan is second to none, with responsive and smart engineers who prioritize your call the first time you make it."

Spain's Video Stream Networks' (VSN) turnkey solution for multimedia production and content streaming seamlessly integrates remote and distributed work environments, cloud computing, multi-platform content distribution. VSN is using Qsan's AegisSAN LX F600Q Fibre Channel RAID system to deliver the superior performance and high availability so critical for its customers in the broadcast industry.

Italy's L'eco della Stampa is one of Europe's most prominent media and web analytics firms, with a large-scale database one of its crucial competitive assets. A top priority for L'eco della Stampa was to increase database access speeds, and to that end, the company chose Qsan's AegisSAN LX F600Q, about which its IT administrator exclaimed, "The biggest benefit of AegisSAN LX F600Q is the increased IOPS!"

Operator of one of Nigeria's busiest port facilities, Ports & Terminal Multiservices Ltd. (PTML) recently installed Qsan's AegisSAN LX F600Q 2U 12Bay systems to meet its data storage needs. Giordano Bianchi, systems engineer at Ounet Sistemi Srl., the system integrator for the project commented, "AegisSAN LX F600Q is recommended for faster performance, failover and data redundancy design. And we are very satisfied with the benefits that the Hyper-V virtualization brings since it greatly strengthens resource efficiency and manageability."

Bulgaria's Heli Air, a leading provider of aviation services, sought to deploy a reliable storage environment for primary data, file sharing, and daily backups, and found it with Qsan 4U 24-bay AegisSAN LX P600Q 10GbE iSCSI system. "The AegisSAN LX P600Q is a wonderful product that delivers a perfect balance between performance and price, and its rich feature set best suits our current and future storage needs," said Pavlin Byalkov, the IT manager at Heli Air. "P600Q is a highly available platform with no downtime and all our company sensitive data can be secured in one central location now."

Russia's Geophysical Data Systems, a leading provider of information services to the oil, gas, and logging industries, is taking advantage of Qsan's TrioNAS LX U600Q unified storage system to support multiple protocols, deliver high-bandwidth data access, high availability, and advanced data protection. Chief engineer Andrey Soloviev reports, "We are completely satisfied with TrioNAS LX U600Q, which is an excellent solution for us! The TrioNAS LX U600Q gives us a very simple and comfortable interface to control everything, and we get great bandwidth for our customers no matter whether it's running CIFS, NFS, AFP or FTP. Recently our team has also made plans to expand our use the TrioNAS LX U600Q systems."

Bulgaria's Intelsoft is a fast-growing software developer which sought a solution for data storage consolidation and high availability as its data needs expanded along with its business. Intelsoft selected Qsan's AegisSAN S300Q-D224 dual-controller SAS system, and general manager Yanko Kanev reported, "I am very surprised how easy the product was installed and implemented in our IT infrastructure. Also, the performance of the storage array exceeded my expectations."

Qsan Product Table

	AegisSAN LX				AegisSAN Q500						AegisSAN V100			TrioNAS LX		TrioNAS U300			TrioNAS		JBOD	
	P600Q	P400Q	F630Q	F600Q	P20	P21	P10	F30	F21	F20	P20	P10	F20	U600Q	U400Q	P20	P10	F20	U221 / U220 / U210	U120	J300Q	J100
Hardware Components																						
Processor	Intel Xeon				Intel S1200 Series						Intel S1200 Series			Intel Xeon		Intel Haswell			Intel Xeon or Intel i3	Intel Atom	LSI	
Form Factor	4U60, 4U24, 3U16, 2U12				4U24, 3U16, 2U12						4U24, 3U16			4U24, 3U16, 2U12		4U24, 3U16			2U12	1U4	4U24, 3U16, 2U12	4U24, 3U16
Controller	Dual-active or Single-upgradable controller				Dual-active or Single-upgradable controller						Single controller			Single-upgradable controller		Single controller			Single controller		Dual-active or Single controller	Single controller
Host Channels (Per controller)	10GbE ports x2 (SFP+, RJ45) 1GbE ports x2	– 1GbE ports x6	16Gb Fibre Channel ports x2 1GbE ports x2	8Gb Fibre Channel ports x4 1GbE ports x2	10GbE ports x2 (SFP+) 1GbE ports x2	10GbE ports x2 (10GBase-T) 1GbE ports x6	– 1GbE ports x6	16Gb Fibre Channel ports x2 1GbE ports x2	8Gb Fibre Channel ports x4 1GbE ports x2	8Gb Fibre Channel ports x2 1GbE ports x2	10GbE ports x2 (SFP+) 1GbE ports x6	– 1GbE ports x6	8Gb Fibre Channel ports x2 1GbE ports x6	10GbE ports x2 (SFP+, RJ45) 1GbE ports x3	– 1GbE ports x7	10GbE ports x2 (SFP+) 1GbE ports x7	– 1GbE ports x7	8Gb Fibre Channel ports x2 1GbE ports x7	10GbE ports x2* 1GbE ports x2 or 6	– 1GbE ports x2	6Gb SAS port x1 (In) 6Gb SAS port x1 (Out)	
Expansion Enclosure	J300Q 6Gb/s SAS series				J300Q 6Gb/s SAS series						J100 6Gb/s SAS series			J300Q 6Gb/s SAS series		J100 6Gb/s SAS series			–		J300Q 6Gb/s SAS series	J100 6Gb/s SAS series
Memory (Per controller)	P600Q/P400Q/F600Q 2U12/3U16/4U24: 4GB DDR3 ECC, up to 16GB P600Q/P400Q/F600Q 4U60 & F630Q: 8GB DDR3 ECC, up to 16GB				4GB DDR3 ECC, up to 8GB						4GB DDR3 ECC			8GB, up to 16GB		16GB, up to 32GB			16GB, up to 32GB	4GB	–	
Hard Drive Interface	6Gb/s SAS/SATA				6Gb/s SAS/SATA						6Gb/s SAS/SATA			6Gb/s SAS/SATA		6Gb/s SAS/SATA			6Gb/s SATA		6Gb/s SAS/SATA	
Max. No. of Hard Drive	2U12/3U16/4U24: 256 4U60: 240				256						192			256		192			12	4	–	
SAN Features																						
RAID & Volume	RAID level 0,1,0+1,3,5,6,10,30,50,60, JBOD, N-way mirror, Online volume expansion				RAID level 0,1,0+1,3,5,6,10,30,50,60, JBOD, N-way mirror, Online volume expansion						RAID level 0,1,0+1,3,5,6,10,30,50,60, JBOD, N-way mirror, Online volume expansion			RAID level 0,1,5,6,10,50,60, JBOD, Online pool expansion		RAID level 0,1,5,6,10,50,60, JBOD, Online pool expansion			RAID level 0,1,5,6,10,50,60,	RAID level 0,1,5,10	–	
Advanced Data Protection	QReplica, QSnap, Volume cloning, Microsoft Windows VSS, Online disk roaming, Instant volume restoration, Battery Backup Module				QReplica, QSnap, Volume cloning, Microsoft Windows VSS, Online disk roaming, Instant volume restoration, Battery Backup Module						QSnap, Volume cloning, Microsoft Windows VSS, Online disk roaming, Instant volume restoration			Remote replication, Snapshot, Volume cloning, Offline disk roaming, AntiVirus (ICAP), Amazon S3 cloud replication, ZFS file-system		Remote replication, Snapshot, Volume cloning, Offline disk roaming, AntiVirus (McAfee), Amazon S3 cloud replication, ZFS file-system			Remote replication, Snapshot, Volume cloning, Offline disk roaming, AntiVirus (McAfee), Amazon S3 cloud replication, ZFS file-system		–	
Data Efficiency	QThin				QThin						–			DeDup, Compression, SSD caching, Thin provisioning		DeDup, Compression, SSD caching, Thin provisioning			DeDup*, Compression, SSD caching, Thin provisioning	Compression, Thin provisioning	–	
Management	QCentral, LCM, Serial console, HTTP Web UI, Secured Web (HTTPS), iSNS, S.E.S., Online firmware upgrade, SSH telnet, LED indicators, S.M.A.R.T., Wizard				QCentral, USB LCM, Serial console, HTTP Web UI, Secured Web (HTTPS), iSNS, S.E.S., Online firmware upgrade, SSH telnet, LED indicators, S.M.A.R.T., Wake-on-LAN, Wizard						QCentral, Serial console, HTTP Web UI, Secured Web (HTTPS), iSNS, S.E.S., SSH telnet, LED indicators, S.M.A.R.T., Wake-on-LAN, Wizard			QCentral, LCM, Console, iSNS, S.E.S., SSH, Web GUI, S.M.A.R.T., Wizard, Performance states		QCentral, Console, iSNS, S.E.S., SSH, Web GUI, S.M.A.R.T., Wizard, Performance states, Wake-on-LAN			QCentral, Web GUI, S.M.A.R.T., Wizard, Performance states, Wake-on-LAN		QCentral, LCM, S.E.S.	QCentral, S.E.S.
Networking	DHCP, Static IP, NTP, Trunking, LACP, VLAN, Jumbo frame				DHCP, Static IP, NTP, Trunking, LACP, VLAN, Jumbo frame						DHCP, Static IP, NTP, Trunking, LACP, VLAN, Jumbo frame			IPv6, DHCP, Static IP, NTP, Trunking, LACP, VLAN, Jumbo frame, WINS		IPv6, DHCP, Static IP, NTP, Trunking, LACP, VLAN, Jumbo frame, WINS			IPv6, DHCP, Static IP, NTP, Trunking, LACP, VLAN, Jumbo frame, WINS		–	
Notification	Email, SNMP trap, Browser pop-up, Syslog, Windows messenger				Email, SNMP trap, Browser pop-up, Syslog, Windows messenger						Email, SNMP trap, Browser pop-up, Syslog, Windows messenger			Email, SNMP trap, Browser pop-up, Syslog, Windows messenger		Email, SNMP trap, Browser pop-up, Syslog, Windows messenger			Email, SNMP trap, Browser pop-up, Syslog, Windows messenger		–	
OS Support	Windows, Linux, Solaris, Mac				Windows, Linux, Solaris, Mac						Windows, Linux, Solaris, Mac			Windows, Linux, Solaris, Mac		Windows, Linux, Solaris, Mac			Windows, Linux, Solaris, Mac		–	
Virtualization	VMware VAAI, Hyper-V, Citrix				VMware VAAI, Hyper-V, Citrix						VMware VAAI, Hyper-V, Citrix			VMware, Hyper-V, Citrix		VMware, Hyper-V, Citrix			VMware, Hyper-V, Citrix		–	
NAS Features																						
Data Service	–				–						–			SMB, NFS, AFP, FTP, SFTP, iSCSI target, WebDAV		SMB, NFS, AFP, FTP, SFTP, iSCSI target, WebDAV			SMB, NFS, AFP, FTP, SFTP, iSCSI target, WebDAV		–	
Directory Service	–				–						–			UnifiedAUTH, Microsoft Active Directory, LDAP		UnifiedAUTH, Microsoft Active Directory, LDAP			UnifiedAUTH, Microsoft Active Directory, LDAP		–	
Compliance & Warranty																						
Green	Auto disk spin down, 80 Plus Gold PSU				Auto disk spin down, Wake-on-LAN, MAID, 80 Plus Gold PSU						Auto disk spin down, Wake-on-LAN, MAID, 80 Plus Gold PSU			Auto disk spin down, 80 Plus Gold PSU		Auto disk spin down, 80 Plus Gold PSU			Auto disk spin down, 80 Plus Platinum PSU	Auto disk spin down, 80 Plus PSU	Auto disk spin down, 80 Plus Gold PSU	
Warranty	System: 3 years, Battery backup module: 1 year				System: 3 years, Battery backup module: 1 year						System: 3 years			System: 3 years		System: 3 years			System: 3 years		System: 3 years	
Safety & EMI	RoHS, CE, FCC, BSMI*, UL*, cUL*				RoHS, CE, FCC, BSMI, UL, cUL						RoHS, CE, FCC, BSMI, UL, cUL			RoHS, CE, FCC, BSMI, UL, cUL		RoHS, CE, FCC, BSMI, UL, cUL			RoHS, CE, FCC, BSMI, UL, cUL		RoHS, CE, FCC, BSMI, UL, cUL	
Requirements																						
AC Input	4U24/3U16/2U12: 90-264V ~ 10A-5A 550W with PFC (Auto Switching), 50/60Hz 4U60: 90-264V ~ 12A-6A 700W with PFC (Auto Switching)				90-264V ~ 10A-5A 550W with PFC (Auto Switching), 50/60Hz						90-264V ~ 10A-5A 550W with PFC (Auto Switching), 50/60Hz			90-264V ~ 10A-5A 550W with PFC (Auto Switching), 50/60Hz		90-264V ~ 10A-5A 550W with PFC (Auto Switching), 50/60Hz			100~240V, 50~60Hz,3.3~6.5A	100~240V, 50~60Hz, 3.5~1.5A	90-264V ~ 10A-5A 550W with PFC (Auto Switching), 50/60Hz	
Operating Temperature	4U24/3U16/2U12: 0 to 40°C 4U60: 10 to 40°C				0 to 40°C						0 to 40°C			0 to 40°C		0 to 40°C			0 to 40°C		0 to 40°C	
Relative Humidity	4U24/3U16/2U12: 5% to 95% non-condensing 4U60: 10% to 85% non-condensing				5% to 95% non-condensing						5% to 95% non-condensing			5% to 95% non-condensing		5% to 95% non-condensing			5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	