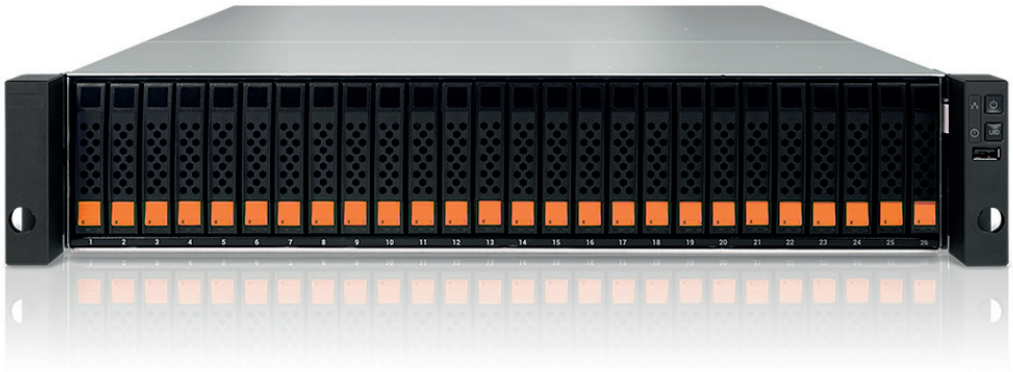
ULYS SAN Series

ULYS 2D-26_SAN, ULYS 1D-26_SAN



ULYS 2D-26_SAN and ULYS 1D-26_SAN are High-Performance SAN System for Enterprise Entry.

They are the high performance, simple, secure, scalable and affordable SAN storage systems for enterprise and SMB. It is an ideal solution to the applications of virtualization integration, media and entertainment, or large scale surveillance; and also backup and disaster recovery in SMB or ROBO (Remote Office/Branch Office) deployments.

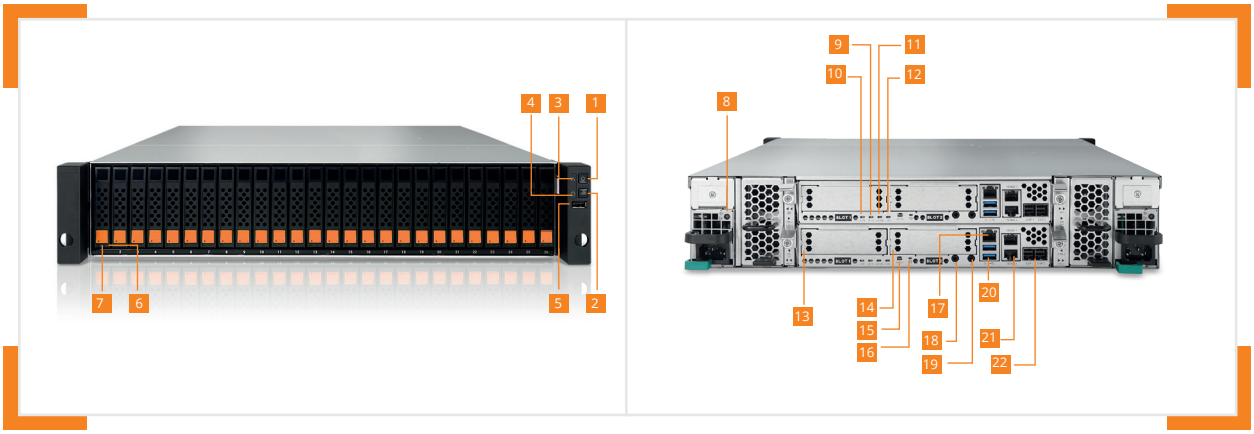
Product Highlights

- High Performance SAN storage system with Dual-Active (Active/Active) controller
- High availability design with no single point of failure
- 5th generation Intel® 4-core processor, up to 128GB RAM per controller
- Latest 12Gb SAS 3.0 technology
- Built-in 10GbE iSCSI
- Up to 12 GB/s sequential read and 8 GB/s sequential write throughput. up to 1.1 million sequential IOPS
- Scale up solution supports over 8.7PB of raw storage capacity
- 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, ULYS 2D-26_SAN and ULYS 1D-26_SAN are positioned to provide excellent values for customers and can deliver ultra-high performance for both throughput and IOPS to enable all kinds of enterprise applications, such as:

- Consolidation a virtualization : virtualized data center, VMware, Hyper-V, Citrix
- Backup and disaster recovery : Symantec, Commvault, Veeam, Acronis
- Media and entertainment: 2K/4K/8K video editing, streaming, archiving
- Large-scale surveillance : mega structure (shopping mall/skyscraper), public transportation (airport/train station/highway), secure and smart city infrastructure



1. Enclosure Power Button / LED
2. UID (Unique Identifier) Button / LED
3. Enclosure Access LED
4. Enclosure Status LED
5. USB Port
6. Disk Drive Power LED
7. Disk Drive Status LED
8. Power Supply Unit – PSU Indicator and Beep Off Button
9. Controller Status LED
10. Master / Slave LED (only for dual controllers)
11. Dirty Cache LED
12. UID (Unique Identifier) LED
13. Host Card Slot 1 (host card is an optional part)
14. Host Card Slot 2 (host card is an optional part)
15. Buzzer Mute Button
16. Reset to Factory Default Button
17. Management Port
18. Console Port
19. Service Port
20. USB Port
21. 10GbE iSCSI Port
22. 12Gb/s SAS Wide Port

CPU

Processor	Intel® 64-bit Quad-Core

Memory

System Flash	-
Memory Module Pre-Sintaller	4GB DDR4 ECC DIMM (per controller)
Total Memory Slots	4 (per controller)
Memory Expandable up to	128GB (per controller)

Storage

Drive Bays	2.5" Slot x26
Maximum Drive Bays with Expansion Unit	626
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	8,799TB
Hot Swappable Drive	Yes

External Port

USB 2.0 Port	1 (Front)
USB 3.0 Port	-
Others	UPS Port x1, Console Port x1

Connectivity Port

1GbE RJ45 LAN Port	x1 (Onboard Management Port)
10GbE RJ45 LAN Port	x2 (Onboard) / x2 iSCSI
10GbE SFP+ LAN Port	x4 iSCSI (Option)
16Gb SFP+ Fibre Channel	x2 (Option) / x4(Option)

Expansion Port

12Gb/s SAS Wide Port	x2 (Onboard)

Host Card Expansion

Gen3x8 Slot	x1
Gen2x4 Slot	x1

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%

Certifications

Certifications	CE, FCC, BSMI, VCCI, KCC

Warranty

Standard Warranty	3 years Battery backup module : 1 year ; 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 with space reclamation • SSD Cache (1) • Auto Tiering (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

iSCSI Host Connectivity	• Proven 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 (3)	• Proven optimization engine • FCP-2 & FCP-3 support • Auto detect link speed and topology • Topology supports point-to-point3 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 with space reclamation • Auto Tiering 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, 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 • 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 protection1 • 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 2016, 2012 R2 Hyper-V certification • Microsoft ODX • Latest Citrix XenServer certification
Easy Management	• USB LCM1, 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 Fibre Channel only supports Point-to-Point topology.