ICEBOX®-XS

Hochverfügbare SAN Storage Plattform

Die Speicherlösung der neuesten Generation

Die ICEBOX®-XS Serie ist die neueste Generation von SAN Systemen mit Dual-Active (Active-Active) RAID Controllern. Dank des verwendeten Intel D1500 Prozessor bietet sie branchenführende Features, wie modernste 12 Gb SAS3 Technologie, fest integrierte 10 GbE LAN und mit dem aktuellen QSAN SANOS 4.0 eines der innovativsten Storage Management Systeme.

ICEBOX® -XS Produkte sind High Performance Speicher Systeme der nächsten Generation, mit außergewöhnlicher CPU Leistung, hoher Verfügbarkeit und hervorragender Skalierbarkeit. Sie entsprechen allen Erwartungen, die heute an moderne Storage Lösungen gestellt werden. Die ICEBOX®-XS erfüllt dank ihres umfangreichen Feature Sets alle Anforderungen für den Einsatz im Enterprise Segment. Aufgrund des unvergleichlich günstigen Verhältnisses in Preis und Leistung sind aber diese Enterprise Features nun auch für kleine und mittlere Unternehmen (KMU) erschwinglich. Sei es nun Einsatz im zentralen Datacenter, als Abteilungsspeicher oder in Branch Offices.

Die ICEBOX®-XS Serie ist ein hochverfügbares SAN Speichersystem. Alle kritischen Komponenten der ICEBOX®-XS sind voll redundant ausgelegt und im laufenden Betrieb tauschbar (Hot Plug). Durch dieses Design ist die ICEBOX®-XS in der Lage eine Verfügbarkeit von 99,999% zu erreichen.

Hervorzuheben ist der modulare Aufbau. Für Anwendungen, die keine hohe Verfügbarkeit erfordern, gibt es jedes ICEBOX®-XS Modell auch in der Version mit Single Controller. Das kann später bei Bedarf zu einem Dual-Active Controller Sytsem erweitert werden. Außerdem können Host Ports ganz nach Bedarf nachgerüstet oder getauscht werden. Ein Tausch des Controllers ist hierzu nicht mehr notwendig. In der Grundversion verfügt jede ICEBOX®-XS bereits über 2x 10 GbE RJ45 Ports. Zum weiteren Ausbau stehen Module mit 4x 16 Gb Fibre Channel (SFP+), 4x 10 GbE iSCSI (SFP+) und 4x 1 GbE iSCSI zur Auswahl.

Je nach Modell kann eine ICEBOX®-XS bis zu 286 Laufwerke verwalten, die einfach über externe JBOD Erweiterungen angeschlossen werden. Dabei können sowohl verschiedene Erweiterungen miteinander kombiniert werden, wie auch unterschiedliche Laufwerkstypen innerhalb eines System oder einer Erweiterungseinheit.

Die Modelle

ICEBOX-XS3212D (Dual)
ICEBOX-XS3212S (Single)
2U 12-bay, 2,5“/ 3,5“ (LFF)

ICEBOX-XS3226D (Dual)
ICEBOX-XS3226S (Single)
2U 26-bay, 2,5“ only (SFF)

ICEBOX-XS3316D (Dual)
ICEBOX-XS3316S (Single)
3U 16-bay, 2,5“/ 3,5“ (LFF)

ICEBOX-XS3212D (Dual)
ICEBOX-XS3212S (Single)
4U 24-bay, 2,5“/ 3,5“ (LFF)

N-TEC® Universal Storage Solutions

N-TEC GmbH
Oskar-Messter-Str. 14
D-85737 Ismaning
www.n-tec.eu
Phone +49 (0)89.958407.0
Fax +49 (0)89.958407.11

ICEBOX®-XS

Hardware Specifications

Model Name	XS3224D (Dual) XS3224S (Single)	XS3216D (Dual) XS3216S (Single)	XS3212D (Dual) XS3212S (Single)	XS3226D (Dual) XS3226S (Single)
Form Factor	4U 24-bay, LFF	LFF 3U 16-bay, LFF	LFF 2U 12-bay, LFF	2U 26-bay, SFF
RAID Controller	Dual-active or Single-upgradable controller			
Processor	Intel® D1500 family 4-core processor			
Memory (per Controller)	DDR4 ECC 4GB, up to 64GB (four DIMM slots, insert two DIMMs or more will boost performance)			
Host Connectivity (per Controller)	Host Card Slot 1 (optional): 4 x 16Gb FC (SFP+) ports 4 x 10GbE iSCSI (SFP+) ports 4 x 1GbE iSCSI (RJ45) ports Host Card Slot 2 (optional): 4 x 10GbE iSCSI (SFP+) ports[8] 4 x 1GbE iSCSI (RJ45) ports			
	Built-in 2 x 10GBASE-T iSCSI (RJ45) ports Built-in 1 x 1GbE management port			
Expansion Connectivity (per Controller)	Built-in 2 x 12Gb/s SAS wide ports (SFF-8644)			
Drive Type	Mix & match 3.5" & 2.5" SAS, NL-SAS, SED[9] HDD 2.5" SAS, SATA[10] SSD			2.5" SAS, NL-SAS, SED[9] HDD 2.5" SAS, SATA[10] SSD
Expansion Capabilities	Up to 10 expansion units using XD5300 series 12Gb SAS expansion enclosure XD5324 (LFF 24-bay), XD5316 (LFF 16-bay), XD5312 (LFF 12-bay), XD5326 (SFF 26-bay)			
Max. Drives Supported	284	276	272	286
Dimension (H x W x D)	19" Rackmount 170.3 x 438 x 515 mm	19" Rackmount 130.4 x 438 x 515 mm	19" Rackmount 88 x 438 x 515 mm	19" Rackmount 88 x 438 x 491 mm
Memory Protection	Cache-to-Flash module (optional) Battery backup module + Flash module (To protect all memory capacity) Super capacitor module + Flash module (To protect up to 16GB memory per controller)			
LCM	USB LCM (optional)			
Power Supply	80 PLUS Platinum, two redundant 770W (1+1) AC Input 100~127V 10A, 50-60Hz 200~240V 5A, 50-60Hz DC Output +12V 63.4A +5VSB 2.0A			
Fan Module	2 x hot pluggable/redundant fan modules			
Regulatory	CE, FCC, BSMI, VCCI, KCC			
Temperature	Operating temperature : 0 to 40°C Shipping temperature : -10°C to 50°C			
Relative Humidity	Operating relative humidity : 20% to 80% non-condensing Non-operating relative humidity : 10% to 90%			

[8] Slot 2 provides 20Gb bandwidth.
[9] SED drive support will be available in Q2 2017.

N-TEC GmbH
Oskar-Messter-Str. 14
D-85737 Ismaning
www.n-tec.eu
Phone +49 (0)89.958407.0
Fax +49 (0)89.958407.11

ICEBOX®-XS

Software

Operating System
- 64bit embedded Linux

Storage Management
- RAID level 0 ,1 ,0+1 ,3 ,5 ,6 ,10 ,30 ,50, 60, and N-way mirror
- Flexible storage pool ownership
- Thin Provisioning (QThin) with space reclamation
- SSD Cache (QCache[11])
- Auto Tiering (QTiering[11])
- 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
- Auto volume rebuilding
- Instant volume restoration
- Online RAID level migration
- SED drive[12] 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

iSCSI Host Connectivity
- Proven QSOE 2.0 optimization engine
- 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[13] 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 authentication
- SED drive[12] support

Storage Efficiency
- Thin Provisioning (QThin) with space reclamation
- Auto Tiering (QTiering[11]) 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[11]
  - M.2 flash module
  - Power module: BBM or SCM (Super Capacitor Module)
- USB and network UPS support with SNMP management

Virtualization Support
- Server Virtualization & Clustering
- Latest VMware vSphere version
- VMware VAAI for iSCSI &, FC
- Windows Server 2016, 2012 R2 Hyper-V
- Microsoft ODX
- Latest Citrix XenServer version

Easy Management
- USB LCM[11], 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

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
- Free BSD 9, 10
- Mac OS X 10.11 or later

[11] The function is optional and is not included in the default package.
[12] SED drive support will be available in Q1 2017.
[13] 16Gb Fibre Channel only supports Point-to-Point topology.

N-TEC® Universal Storage Solutions

N-TEC GmbH
Oskar-Messter-Str. 14
D-85737 Ismaning
www.n-tec.eu
Phone +49 (0)89.958407.0
Fax +49 (0)89.958407.11