

## **Syne-iSCSI-24SS4GE IPSAN SAS&/SATA 4U iSCSI / IPSAN RAID Subsystems**



**Single or Dual Redundant Controller, Volume Cloning & LAN/WAN Replication**

**19" 4U Rackmount 24-Bays w/ 4xGbE for up to 80x2TB SAS&/SATA Drives**

### ■ **Feature Highlights:**

1. Support snapshot & Volume Cloning (full/incremental), QReplica for LAN/WAN Remote Replication
2. SAS/SATA JBOD expansion up to 80x2TB drives per controller
3. Load-Balancing & Fail-Over via multiple ports
4. RAID 6, 60 ready
5. Volume Sharing for Clustering
6. Web-based management with HTTP, HTTPS
7. On-line Dynamic Volume Expansion & Migration
8. HDD S.M.A.R.T Monitoring enabled
9. Global/dedicated cache

### ■ **Performance:**

- Read + Write max 600MB/sec
- Read/Write max IOPS 110k

### ■ **Subsystem Characteristics:**

1. Intel Xscale IOP342, 1.2Ghz (Chevelon Dual Core)
2. 2GB ~ 4GB DDRII-533 ECC DIMM
3. 32MB Flash
4. UARTs: serial console and UPS
5. Fast Ethernet port for management
6. Disk & Host Interface: LSI 1064E – SAS(3.0/6.0Gb/s), SATAII(3Gb/s), SATAI(1.5Gb/s)
7. IP Ports Interface: 4 x Intel 82546GB controllers
8. LCM & Enclosure monitoring processor
9. Battery Backup module for Cache RAM Protection
10. NVRAM for IO transaction record

### ■ **Host Interface:**

1. 4 x GbE Host ports
2. 802.3ad port Trunking & LACP
3. Microsoft Multi-Path I/O (MPIO)
4. iSNS & DHCP Support, CHAP authentication
5. Data/Header digest support
6. iSCSI jumbo frame support with MTU up to 9Kbytes
7. iSCSI jumbo target mode : 32multiple nodes support
8. Up to 32 host connections
9. Up to 16 hosts for one volume

### ■ **Drive Interface:**

1. Support up to 24 SAS/SATA disk internally, plus up to additional 56 drives externally via mini-SAS Infiniband port on the back
2. Multiple IO transaction processing
3. Tagged Command Queuing
4. Hard drive S.M.A.R.T. enabled

### ■ **JBOD Interface:**

1. 2 x external SFF-8470 SAS port to JBODs subsystem

### ■ **RAID & Volume Operation:**

1. RAID level: 0,1,0+1,3,5,6,10,30,50,60,JBOD & N-Way Mirroring
2. Up to 1024 logical volumes in the system
3. Up to 32 HDDs in one RAID Group
4. Global and dedicated hot spare disks
5. Write-through or Write-back cache policy
6. Dedicated or shared cache allocation for each volume
7. Multiple RAID volumes support
8. Configurable RAID stripe size
9. Online Volume Expansion
10. Instant RAID volume availability
11. Auto Volume Rebuilding
12. On-line Volume Migration
13. Instant volume configuration restoration

### ■ **Advanced Data Protection:**

1. Built-in Snapshot with Rollback enabled
2. Windows VDS (Virtual Dedicated Servers) and VSS (Volume Shadow Copy Service) **Optional**
3. Snapshot enabled up to 16 UDV, each UDV supports up to 32 snapshot volumes, total 512 snapshot volumes per controller
4. Virtual Disk Cloning for easy RAID migration with (full/incremental) Backup and QReplica for Remote LAN/WAN Replication
5. Off-line Array Roaming
6. Advance FSR (Faulty Sector Relocation)
7. Battery Backup support for Cache RAM Protection

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■ **OS Support:**

1. Windows XP-Pro, Vista, 2003 & 2008 Server
2. Linux all versions
3. MAC OS
4. Solaris O/S 10 & later
5. Novell NetWare & later
6. VMWare & Hyper-V & Xen OS virtualizations

■ **Enclosure Monitoring:**

1. S.E.S. support for standard enclosure management
2. UPS management via the specific serial port
3. Fan speed monitoring x 2
4. Redundant power supply monitoring
5. 3.3V, 5V & 12V voltage monitoring
6. Thermal sensor x 3 on the controller BOARD (for CPU, bridge & host channel chips)
7. Thermal sensor x 3 in enclosure
8. Status monitor of expanded SAS/SATA JBODs

■ **Management Interface:**

1. Management UI via serial console
2. Browser-based GUI via 10/100 Ethernet Port
3. SSH telnet by Ethernet, Web HTTP and HTTPS
4. Event notification via Email and SNMP trap

**Cooling:**

Two redundant, hot-swappable cooling modules with self-regulating speeds and wide range airflow design Controlled by RAID controller automatically maintaining optimal ambient temperature

**Temperature:**

Operating temperature: 5 to 35 degree C  
Non-operating temperature: -40 to 60 degree C

**Relative Humidity:**

20% to 80% non-condensing

**Dimensions & Weight:**

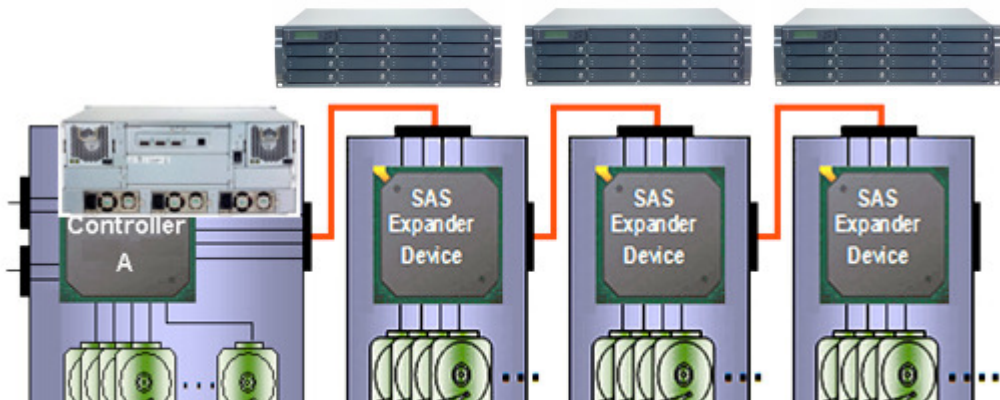
Dimensions: 446.5mm(W) x 550mm(D) x 4U  
Weight (w/o HDDs): 36.0kg

**Power Supply:**

Redundant Hot-Swap N+1 3x 460W power supplies with PFC, load-sharing type, hot-swappable and cable-less design AC Voltage 110-230 VAC /AC Frequency 50-60Hz

## ***Up to 80x2TB 160TB of Capacity Expansion with JBOD Modules***

Synetic-iSCSI-24SS4GE series are capable of data storage capacity expansion for up to 160TB per single controller via 16-Bay SAS-to-SAS/SATA JBOD units. Multiple 16-Bay JBODs can be added in a daisy chain fashion increasing the total capacity on-the-fly.



**Example of a single 16-bay iSCSI unit supporting a set of 3x16-bay JBOD units  
48 Drives Set/Array = 3 x 16-Bays 3U Rack SAS-to-SAS/SATA JBOD Extension**

## ***iSCSI/IPSAN Important Application in Server Virtualization***

