

## Syne-iSCSI-8/12/16SS4GE SAS&/SATA



### **19" Rackmount 8/12/16-Bays 2U/3U iSCSI / IPSAN RAID Subsystems with 4x GbE and SAS&/SATA drives for up to 120TB Capacity Expansion**

#### ■ **Feature Highlights:**

1. Support Snapshot
2. SAS/SATA JBOD expansion up to 120TB/controller
3. Load-balancing & fail-over via multiple ports
4. RAID 6, 60 ready
5. Volume sharing for clustering
6. Web-based management
7. On-line 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 120k

#### ■ **Subsystem Characteristics:**

1. Intel Xscale IOP342, 1.2Ghz (Chevelon Dual Core)
2. 1GB ~ 2GB 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(3.0Gb/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 Multipath 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 16 SAS/SATA disk internally, plus up to additional 64 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:**

2. RAID level: 0,1,0+1,3,5,6,10,30,50,60,JBOD & N-Way Mirroring
3. Up to 1024 logical volumes in the system
4. Up to 16 HDDs included in one volume group
5. Global and dedicated hot spare disks
6. Write-through or write-back cache policy
7. Dedicated or shared cache allocation for each volume
8. Multiple RAID volumes support
9. Configurable RAID stripe size
10. Online volume expansion
11. Instant RAID volume availability
12. Auto volume rebuilding
13. On-line volume migration

#### ■ **Advanced Data Protection:**

1. Built-in Snapshot with Rollback enabled
2. Windows VDS (Virtual Dedicated Servers) and VSS (Volume Shadow Copy Service)
3. Snapshot enabled up to 16 UDV, each UDV supports up to 32 snapshot volumes, total 512 snapshot volumes per controller
4. Off-line array roaming
5. Advance FSR (Faulty Sector Relocation)
6. 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

■ **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
4. Event notification via Email and SNMP trap

■ **Models-P/N for: Syne-iSCSI-8/12/16SS4GE**

**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 & Power Supply:**

**1)- Syne-iSCSI-16SS4GE w/o Front Cover:**

446.5mm(W)x510mm(D)x3U, Weight (w/o HDs) 20.0kg

**Power Supply:**

Redundant by dual 460W power supplies with PFC, load-sharing type, hot-swappable and cable-less design AC Voltage 110-230 VAC /AC Frequency 50-60Hz

**2)- Syne-iSCSI-12SS4GE w/o Front Cover:**

446.5mm(W)x527mm(D)x2U, Weight (w/o HDs) 17.0kg

**Power Supply:**

Redundant by dual 375W power supplies with PFC, load-sharing type, hot-swappable and cable-less design AC Voltage 110-230 VAC /AC Frequency 50-60Hz

**3)- Syne-iSCSI-16SS4GE-C w/ Front Cover:**

446mm(W)x618mm(D)x3U, Weight (w/o HDs) 22kg

**Power Supply:**

Redundant by dual 535W power supplies with PFC, load-sharing type, hot-swappable and cable-less design AC Voltage 110-230 VAC /AC Frequency 50-60Hz

**4)- Syne-iSCSI-12SS4GE-C w/ Front Cover:**

446mm(W)x618mm(D)x2U, Weight (w/o HDs) 21.5kg

**Power Supply:**

Redundant by dual 535W power supplies with PFC, load-sharing type, hot-swappable and cable-less design AC Voltage 110-230 VAC /AC Frequency 50-60Hz

**5)- Syne-iSCSI-8SS4GE w/ Front Cover:**

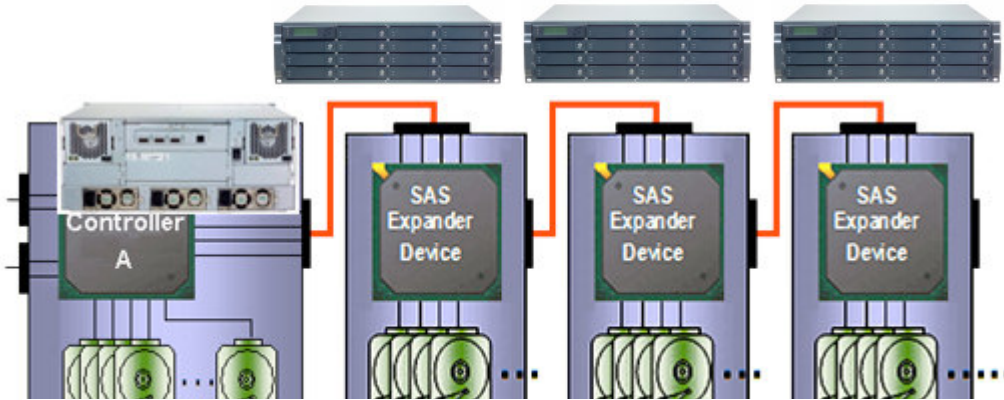
446.5mm(W)x509mm(D)x2U, Weight (w/o HDs) 15.0kg

**Power Supply:**

Redundant by dual 300W power supplies with PFC, load-sharing type, hot-swappable and cable-less design AC Voltage 110-240 VAC /AC Frequency 50-60Hz

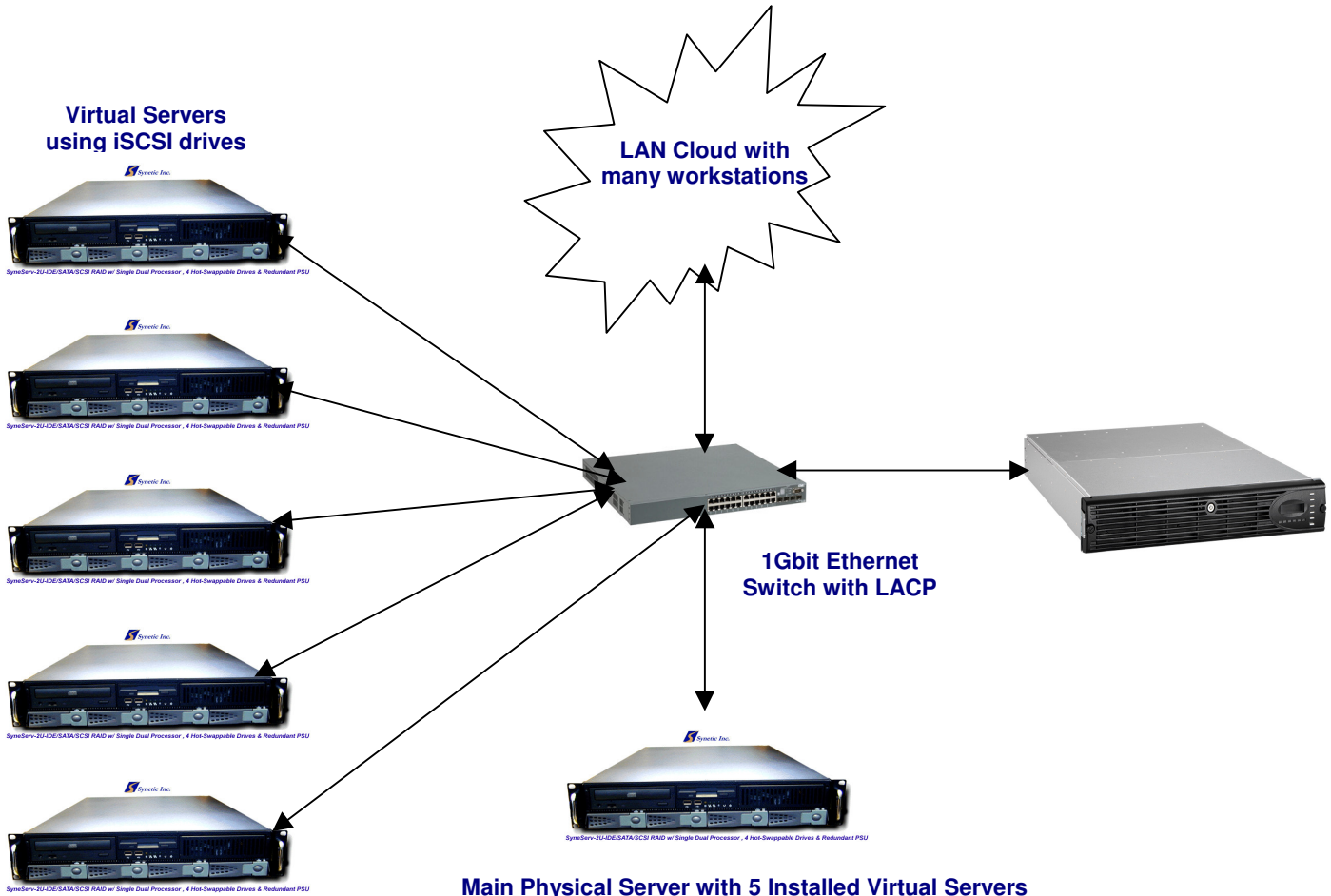
## Over 120TB of Capacity Expansion with JBOD Modules

Synetic-iSCSI-8/12/16SS4GE series are capable of data storage capacity expansion for up to 120TB per single controller via 16-Bay SAS-to-SAS/SATA JBOD units. Multiple 12/16-Bay JBOD 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



Main Physical Server with 5 Installed Virtual Servers