

# Smart Network Storage Solutions

## Xiranet Communications - iSCSI & Native InfiniBand Storage Solutions for OEM Customers

## Agenda

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- Overview iSCSI & InfiniBand Storage
- Xiranet Storage Solutions for OEM Customers
- Evaluation Platform
- Storage Management
- Web based Administration
- OEM Customisation Options
- Pricing & Availability

# iSCSI Overview

- Supports block level storage like Fibre Channel
- Uses Ethernet/IP infrastructure can be used everywhere
- Can be implemented in software a costly Host Bus Adapter (HBA) is not required
- Performance comparable with 2 Gb Fibre Channel but higher CPU utilisation
- iSCSI Host Bus Adapters can be used enables boot from SAN
- Can be run over Wide Area Networks (e.g. Internet)
- Can use IP Security (IPSEC) for data encryption
- Driver support for all major operating systems
- Very easy to use

# InfiniBand Storage Overview

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- InfiniBand (IB) advantages
  - Enables I/O convergence of IPC, networking and storage within one infrastructure
  - Only industry standard interconnect for HPC
  - Very high performance, low latency, 10/20 Gb/s available now
  - Linux Kernel integration via openib.org
  - Common Windows driver architecture in progress
  - Lower total cost of ownership (TCO)
- Increasing application performance requirements
- Gateways to Fibre Channel (FC) storage are not optimal
- Single networking infrastructure preferred, IB can replace multiple FC links
- Native InfiniBand storage: higher performance, lower management efforts and reduced costs

# Xiranet Storage Solutions for OEM Customers

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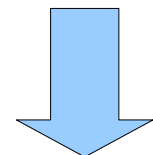
- Xiranet develops high performance iSCSI & Native InfiniBand storage solutions
- Targets standard off-the-shelf x86-64 server hardware
- Supports 1/10 Gb Ethernet and Mellanox InfiniBand HCAs
- System personality is defined by firmware
- Firmware resides on Flash based Disk-on-Module (DOM)
- Supermicro based evaluation platform available
- Modifications according to OEM hardware can be made
- Management Look & Feel (logos, colors etc.) can be changed

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**OEM Hardware**



**Storage  
Solution**

## Evaluation Platform (1)



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- Storage protocol support:
  - iSCSI over GbE
  - Native InfiniBand storage via SCSI RDMA (SRP) protocol
- Features:
  - RAID Level 0, 1, 5, 6, 10, 50, 60 (depending on controller)
  - Snapshots
  - iSNS
  - IPSEC
  - Support for volumes > 2 TB, Dynamic volume resize
  - S.M.A.R.T drive monitoring
  - E-mail notification

## Evaluation Platform (2)



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- Two hardware configurations supported
- Common components:
  - INTEL XEON 51xx CPU
  - 2 GB RAM
  - Supermicro mainboard X7DBE
  - enclosure SC-933E1-R760 (3U, 15 bays) or SC-836TQ/E1/E2 (3U, 16 bays)
  - Support for SAS / SATA disk drives
- Software RAID version:
  - LSI SAS controller SAS3080X-R (PCI-X) or SAS3081E-R (PCI-E)
- Hardware RAID version:
  - LSI MegaRAID SAS 8408E, LSI MegaRAID SAS8888ELP

# Storage Management

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- Allows Management of disks, RAID arrays, volumes, exports via IB and iSCSI
- Integrated Systems Management
- Access via Command Line Interface (CLI) or Web Browser
- Separate Management Port (Console, Ethernet)
- Secured Communication (https, SSH)
- Monitor / Administrator roles
- Extensive Statistics for Usage and Utilisation



# Web based Administration


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## OEM Logo and Design

- Administration
- System Configuration
- Disk Management**
  - Physical Disks
  - Logical Disks
  - Logical Volumes
  - Snapshots
- InfiniBand Management
- ISCSI Management
- Statistics
- Logging

[Logout](#)

### Physical Disks



Physical Disks

Slot	Model	Size	State
0	ST3250620NS	19.06 GB	ok
1	ST3250620NS	19.52 GB	ok
2	ST3250620NS	19.52 GB	ok
3	ST3250620NS	19.52 GB	ok
4	ST3250620NS	19.06 GB	ok
5	ST3250620NS	19.06 GB	ok
6	ST3250620NS	19.06 GB	ok
7	ST3250620NS	19.06 GB	ok
8	ST3250620NS	19.52 GB	ok
9	ST3250620NS	19.06 GB	ok
10	ST3250620NS	19.06 GB	ok
11	ST3250620NS	19.06 GB	ok
12	ST3250620NS	19.52 GB	ok
13	ST3250620NS	19.06 GB	ok
14	ST3250620NS	19.06 GB	ok

[rescan SCSI bus](#)

State

```

Volume vg1 disktype raid5 on has
Volume vg0 disktype raid5 on has
Creation of raidset vg2 started
Volume vg0 disktype raid5 on has
Volume on has500 sends event N:
Raidset vg2 successfully created
Created logical disk vg2 on /dev/m
successfully created logical volume
successfully created logical volume
Volume vg1 disktype raid5 on has
Volume vg0 disktype raid5 on has
successfully created logical volume
Volume vg2 disktype raid5 on has
Volume vg0 disktype raid5 on has
Volume vg2 disktype raid5 on has
Volume vg1 disktype raid5 on has
Volume vg0 disktype raid5 on has
Volume vg2 disktype raid5 on has
Volume vg1 disktype raid5 on has
DHCP: setting eth0 to ip/mask: 1:
Volume vg2 disktype raid5 on has
Volume vg1 disktype raid5 on has
Volume vg2 disktype raid5 on has
DHCP: setting eth0 to ip/mask: 1:
DHCP: setting eth0 to ip/mask: 1:
DHCP: setting eth0 to ip/mask: 1:

```

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# OEM Customisation Options

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- Can be sold as is with supported hardware platform
- Modifications in the following areas can be done:
  - Support for different hardware - e.g.:
    - CPU
    - mainboard
    - storage controller
    - network interfaces
    - enclosure
  - Web based management: Logo replacement etc.
  - User documentation

## Pricing & Availability

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- Xiranet/Supermicro evaluation platform (iSCSI & SRP support) available now:
  - Software RAID version: \$8500
  - Hardware RAID version: \$9500
- Disk drive options:
  - 15 x Seagate Barracuda ES 250 GB: \$1500
  - 15 x Seagate Cheetah 15K.5 73 GB SAS: \$4500
- Firmware image available for download free of charge for qualified partners if hardware is not required.
- Licensing:
 

	iSCSI	10 Gb iSCSI	iSCSI & SRP InfiniBand
– Single quantity	\$400	\$1500	\$1500
– Includes updates for three years, Ask for volume discounts			



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