

# Storage System Software Solutions for OEM Customers

High-performance storage area network (SAN) system software for iSCSI and native InfiniBand storage appliances

**Xiranet provides system software that enables OEMs to build turn key storage solutions with support for 1/10 Gb iSCSI and native InfiniBand utilizing their existing server platforms.**

## Overview

The Xiranet SAN storage solutions for OEM customers target standard off-the-shelf x86-64 server hardware. Both software and hardware RAID via standard controllers can be utilised. For host I/O 1/10 Gb Ethernet and Mellanox InfiniBand HCAs are supported.

The storage system personality is defined by firmware which resides on a flash based Disk-on-Module (DOM). Thus, all disk drives are available for user data. Depending on the configuration iSCSI, SRP or mixed storage protocol solutions can be build.

## Storage over Ethernet with iSCSI

iSCSI allows to carry storage data over ubiquitous Ethernet infrastructure. Thus, SANs can be build that are more cost effective and easier to manage than Fibre Channel based installations. Today, iSCSI is typically implemented to meet lower end storage requirements. But combined with 10 Gb Ethernet it can provide very high performance as well.

## Storage over InfiniBand with SRP

InfiniBand is a new universal, high performance network. With up to 20 Gb/s it provides higher bandwidth, reduced latency and lower CPU utilisation due to RDMA based data transmission. Xiranet supports the SCSI RDMA (SRP) protocol for storage over InfiniBand. It allows to build very capable SANs directly over InfiniBand to support very demanding applications.

## Product Highlights

- iSCSI and SCSI RDMA (SRP) protocol
- 1/10 Gb Ethernet NIC and SDR/DDR InfiniBand HCA
- SAS and SATA drive support
- Hardware and software RAID support
- S.M.A.R.T drive monitoring
- Support for volumes > 2 TB
- Virtualization capability
- Snapshot support
- E-mail notification

## Supported Hardware

The Xiranet storage solution for OEM customers supports commercial off-the-shelf server hardware. Please contact Xiranet regarding a list of qualified components.

## Storage Management

The Xiranet storage solution can be managed via a command line interface (CLI) and a Web based GUI. Notifications in case of events, out-of-band management and multiple concurrent users with different roles are supported. Advanced system monitoring simplifies the administration process.

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

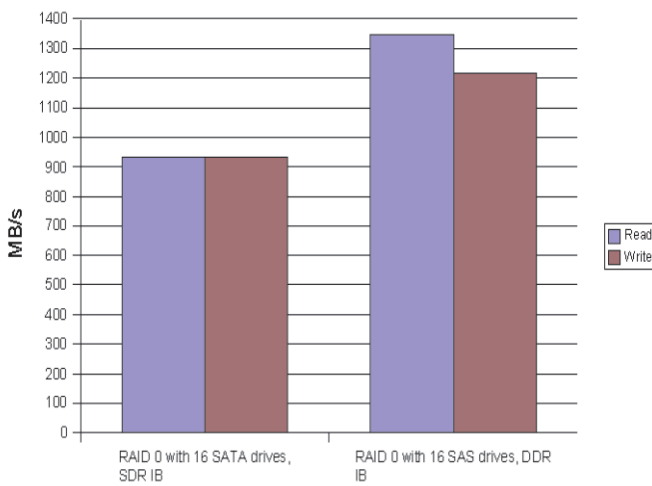
## Customisation

The Xiranet storage firmware can be used as is for certified hardware configurations. Alternatively, modifications according to OEM hardware can be made. Additionally, several components like administration interface and end user documentation can be customized.

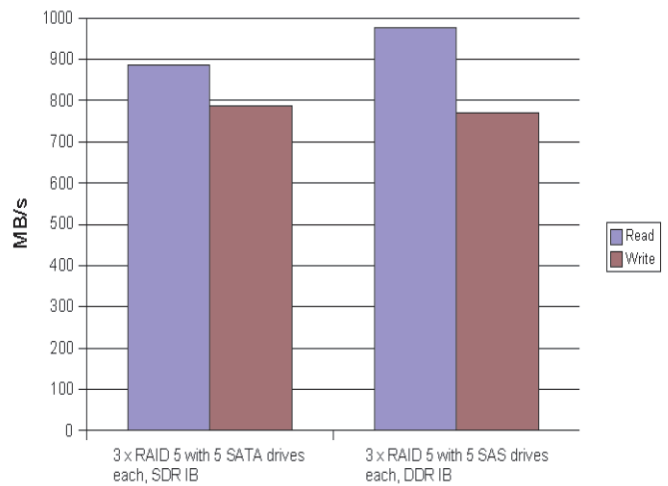
### Performance with SRP Protocol

Xiranet provides an evaluation platform to support potential OEMs. With this system sequential performance with 1 MB block size and random I/O with 8 KB block size was measured with the Oracle Orion benchmark tool. The initiator system was connected directly with a single SDR or DDR InfiniBand link respectively. Seagate Barracuda ES SATA and Seagate Cheetah 15K SAS drives were used for the tests.

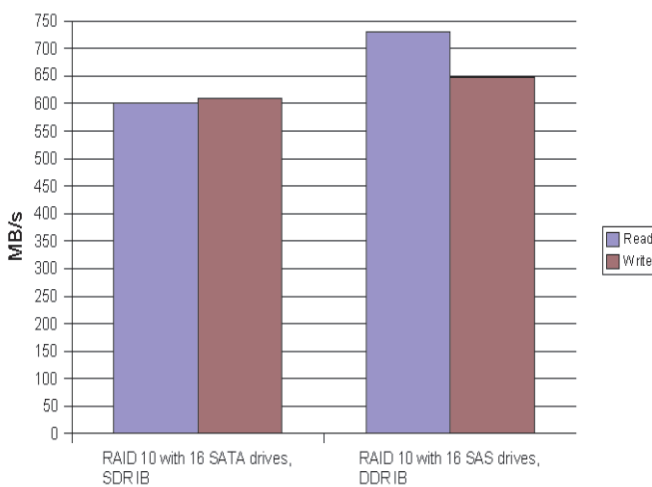
RAID 0 Sequential I/O



RAID 5 Sequential I/O



RAID 10 Sequential I/O



RAID 10 Random I/O

