

X2-IB Layered Storage Solution



RAID Inc. announces the X2-IB, a new innovation in storage systems that revolutionizes the traditional SAN storage paradigm. This Infiniband layered storage solution, designed for the most demanding high performance computing environments, is the first product to utilize RAID's unique layered storage model.

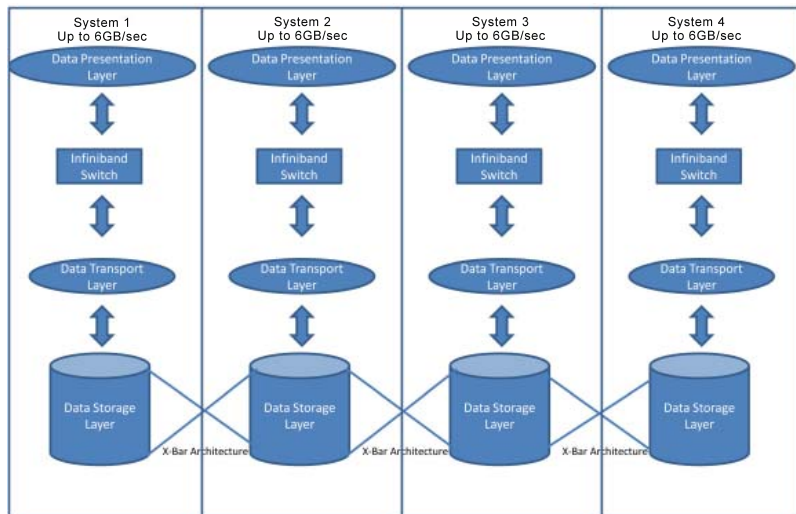
The X2-IB is capable of sustaining 6 to 24GB/sec on both reads and writes. In addition, the system uses RAID-6 for ultimate data integrity and scales to 1536 SATA/SAS hard drives. The uniqueness of the X2-IB is not limited to its performance, the solution also provides the latest technology in assuring data integrity (SATA Guard), Self Healing, Energy Conservation (MAID technology) and a complete suite of optional enterprise storage services.

RAID Inc.'s new X2-IB product uses a unique layered storage model which is based on the OSI model of networking. Each layer within the storage infrastructure describes a discrete set of components that are interconnected via Infiniband and Fibre Channel.

- **Data Presentation Layer** – The data presentation layer describes the place where users interact with the data as it is presented.
- **Data Transport Layer** – The data transport layer is what provides interaction between traditional Fibre Channel storage and the Infiniband interconnect. It is a highly customized and proprietary combination of hardware and software that allows the incredible speed and flexibility of the X2-IB layered system.
- **Data Storage Layer** – The data storage layer represents traditional Fibre Channel storage, and where data ultimately ends up residing.
- **Infiniband Switches** – These are high performance switches which provide bandwidth that scales up to 40Gb/sec.

X2-IB

Each system can be scaled to 32GB of cache, 16 Fibre Channel host ports and 384 HDDs. X-bar architecture allows a unified data storage layer across all systems for a combined system of 128GB cache, 64 FC Host ports and 1536 hard drives.



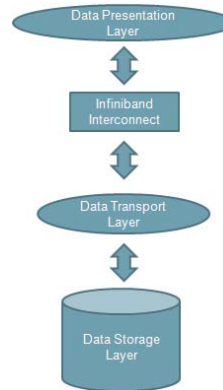
The X2-IB's modular design can be customized to your specific environment, the base system starts at 48 drives and scales in 2U twelve drive increments.

Base System Specifications

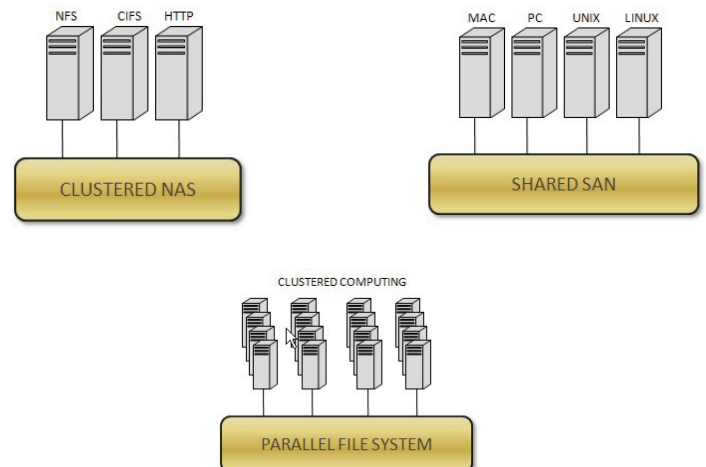
- Data presentation Layer is customizable to handle a parallel file system, Enterprise NAS, or SAN
- One data transport module expandable to 4 per system
- Entry level data storage module consists of:
 - 8GB of cache scalable to 32GB
 - 8 Fibre Channel host ports scalable to 16 Fibre Channel host ports
 - 48 drives scalable to 384 HDD in 2u 12 drive building blocks
 - RAID levels supported: RAID 6 double parity, RAID 3 double parity and Triple mirrored RAID

Scalability Options

Single System Configuration	Four System Configuration
Totally Customizable	Totally Customizable
Dependent on Customer's configuration	Dependent on Customer's configuration
1 to 4 Modules	4 to 16 Modules
Cache – 8 to 32 GB Host Ports – 8 to 16 HDDs – 48 to 384 SATA/SAS	Cache – 32 to 128GB Host Ports – 32 to 64 HDDs – 48 to 1536 SATA/SAS



The Data Presentation Layer is totally customizable to fit the user's unique environment in three distinct areas:



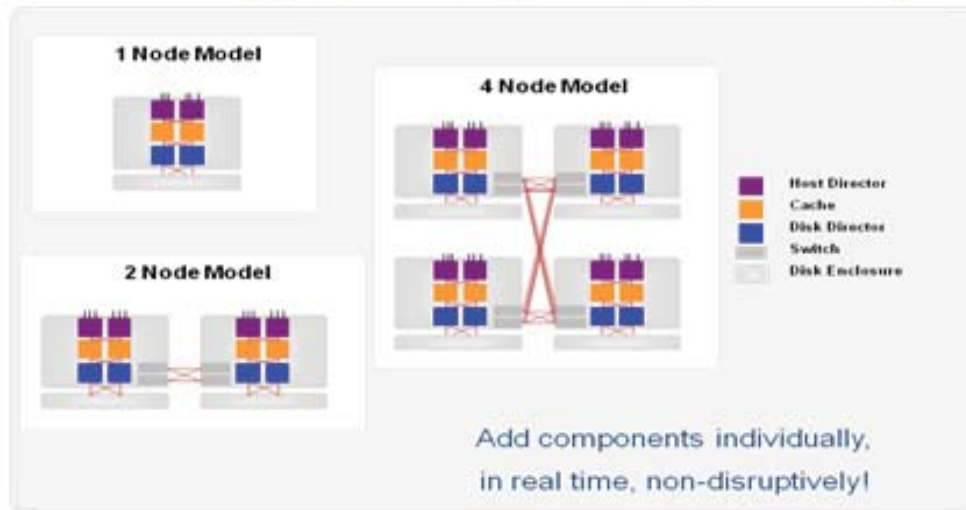
Data Storage Layer

X-Bar Architecture for System Interconnect

Each system can be interconnected with up to 3 other systems by utilizing patented X-Bar technology resulting in a maximum scaled configuration of 128GB of cache 64 Fibre Channel ports and 1536 HDDs.

- The high-speed X-bar switch architecture enables true multi-node operation, with performance scaling linearly with capacity.
- Every aspect of the system can be managed through a common software package for ease of maintenance in a busy data center.

Flexibility, Scalability and Availability



Optional Enterprise Storage Services

SATA Guard

Recent large academic studies have identified the surprising frequency of silent read failures that are not identified or resolved in enterprise SATA disk arrays despite the typical integrity functions. Such errors result in corrupt data being provided by the disk array to the application without any notification or warning, potentially leading to erroneous operations and results. This "silent data corruption" includes misdirected writes, partial writes, and data path. The X2-IB Extended Data Integrity Feature detects and addresses silent data corruption, while also preventing parity pollution.

Self Healing Technology

The X2-IB has the ability to proactively scan disks for bad sectors or other potential problems that could cause a drive to fail. These drives are taken out of service and fixed before failure occurs automatically without users ever knowing it happened. Doing so reduces the number of drive rebuilds that need to be done, improves data integrity and minimizes performance degradation caused by the rebuild process. Enhanced disk recovery eliminates up to 50% of all drive rebuilds. This technology is especially helpful with the deployment of large capacity SATA drives.

Dynamic Provisioning

Traditionally, logical disks could only be managed in units of the physical sets of disks that made up the RAID. Users had to install a fixed number of disks even if they were not needed. The new dynamic provisioning function permits logical

disk capacities to be changed dynamically to either expand or shrink. Physical disks can be added one at a time. The logical disks required can be managed efficiently, and the system is free from physical restrictions.

Green Technology

MAID systems power down disk drives that are not being actively accessed. Spinning down disks that are only used as backup targets could yield a 30-60% savings in power and cooling compared to leaving the disks spinning all the time. The X2-IB MAID implementation is available today in its level one implementation.

Optional Software Features

Performance Monitoring, Synchronous Replication, Asynchronous Replication, Dynamic Snapshot

High Availability

Each system has the option of being fully redundant in all respects.

Ideal Fits

HPC, Government, Energy, Finance, Research, Simulation, Digital Media and Internet Services

Please contact 800-330-7335 or email sales@raidinc.com for more information.