

# WICKED FAST STORAGE

## Data Storage Solutions for High Performance Computing and Data Analytics

The HPC and Data Analytic environments are very demanding on the Data Storage subsystem. Considering that traditional Disk Drives are the slowest component in any computer architecture, it is critically important to design and size the Data Storage System properly for HPC applications.

Following are important considerations to evaluate when selecting storage for your HPC workload:

### Raw Throughput

The AssuredSAN 4004 offers over 5000 MB/s peak throughput in both read and write operations.

### Scale-out File Serving

As more and more clients are added to the network, a distributed, secure and fast file serving architecture is needed. The AssuredSAN storage array provides the block foundation and RAID technology for such a system.

### Independent Streams

As more users, threads, or streams access the storage, the workload becomes more random, slowing things down. AssuredSAN products include adaptive caching technologies to ensure peak performance even as dozens of independent streams access the system.

### Value

High density 3.5" 7200 RPM SAS Disk Drives provide the right balance between speed and cost for HPC workloads. Also, 12Gbit SAS interfaces offer tremendous bandwidth and inexpensive infrastructure for non-switched environments.

### High Availability

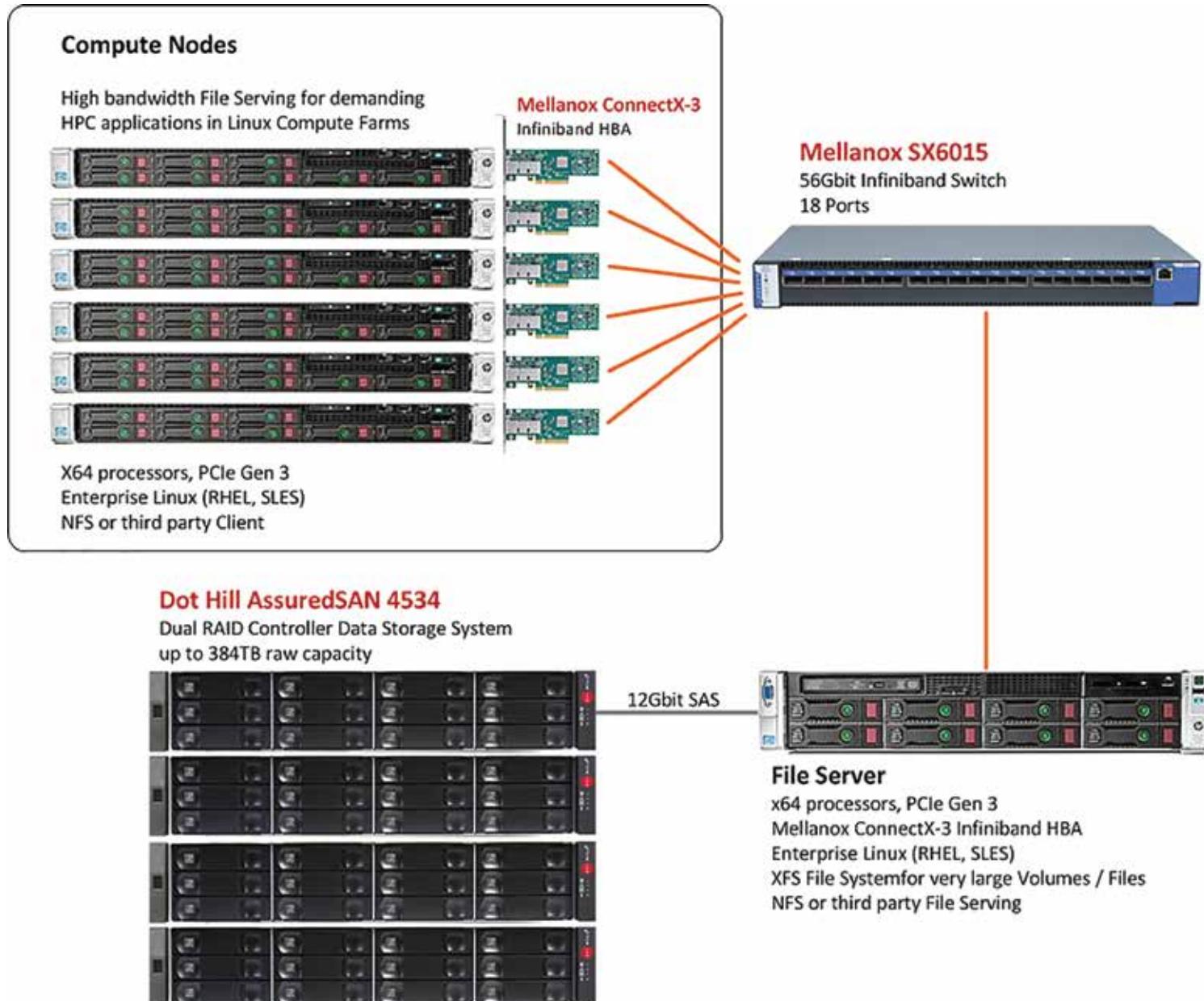
AssuredSAN offers redundant components and 99.999% availability in all of our products. Coupled with clustered file servers and redundant switches, and there will be no single point of failure in the system.

### Flexibility

Don't succumb to vendor lock-in. There are many File Serving and Networking options available for creating the ideal storage solution. AssuredSAN storage systems are the perfect foundation for any storage subsystem in HPC environments.

The following pages provide some example configurations for storage systems in HPC environments. They demonstrate how AssuredSAN products and file servers come together to create high powered storage solutions for demanding Computational Systems.

# HPC/Data Analytics with High Performance Linux File Serving



# HPC/Data Analytics with High Performance SMB3 File Serving

## Compute Nodes

High bandwidth File Serving for demanding HPC applications in Windows Compute Farms



X64 processors, PCIe Gen 3  
Microsoft Windows Server 2012 R2  
SMB 3 Client

Mellanox ConnectX-3  
10Gbit Ethernet HBA

**Mellanox SX1024**  
Ethernet Switch  
12 40Gbit ports, 48 10Gbit ports



## File Server

x64 processors, PCIe Gen 3  
Mellanox ConnectX-3 40Gbit Ethernet HBA  
Microsoft Windows Server 2012 R2  
NTFS File System  
SMB 3 File Serving



## Dot Hill AssuredSAN 4534

Dual RAID Controller Data Storage System  
up to 384TB raw capacity



12Gbit SAS

## Windows for HPC?

While most HPC applications are run in Linux or Unix environments, Microsoft has made significant strides in creating advanced services and high speed protocols for files and storage.

Computational systems that have the option of using the Windows Server platform will be able to take advantage of these new Microsoft technologies.

