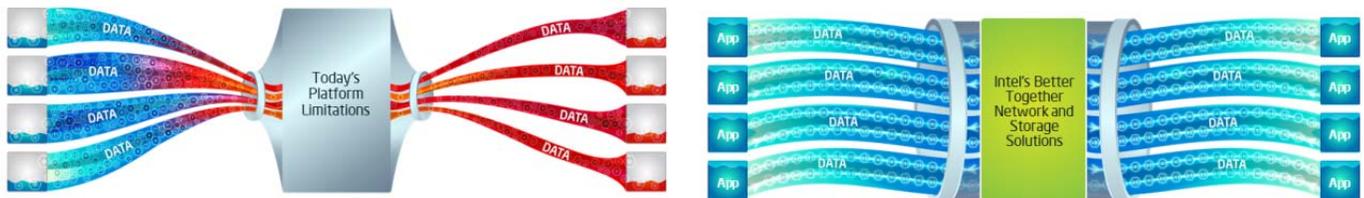
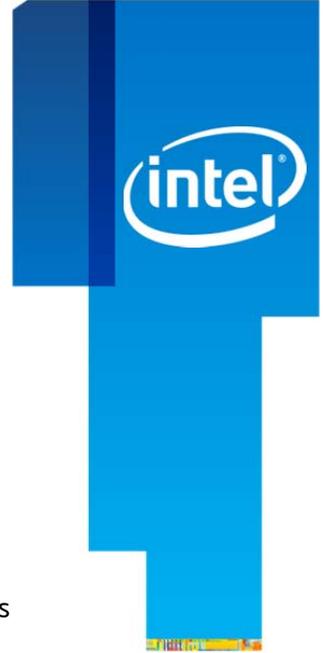


Powerful Relief for Data Center Pain Points

A better-together Storage and Networking solution from Intel opens bottlenecks and keeps your data moving.

The proliferation of virtualized applications, volume and variety of data delivery requirements along with the ever-increasing demand for content and real-time access combine to create performance challenges. The cause? The persistent bottlenecks of high latencies and slow I/O. Intel® processors, Intel® Solid-State Drives and Intel® Ethernet Adapters provide “Better Together” solutions directly addressing each of these problem areas.



Intel® Xeon® E5-2600/2400

The first scalable storage-server processor provides efficient management, smarter data protection and faster analytics.

Storage is becoming more intelligent and increasingly dependent on heavy math algorithms including compression, de-duplication, thin provisioning, and automatic tiering algorithms which all benefit from higher performance Intel® Xeon® processors. Intel created Intel Data Direct I/O Technology to allow Intel Ethernet controllers and adapters to talk directly with the processor cache for lower latency, higher I/O bandwidth, and reduced power consumption. Intel® architecture-based solutions offer Platform Storage Extensions (e.g. Non-Transparent Bridge (NTB), Asynchronous DRAM Refresh (ADR), XOR engines) integrated into Intel Xeon processors.

Intel® Solid-State Drive DC S3700 Series

Deliver data at a breakneck pace, with consistently low latencies and tight IOPS distribution.

The Intel® Solid-State Drive DC S3700 Series delivers superior performance with 4KB random read performance of up to 75,000 input/output operations per second (IOPS)¹ and 4KB random write performance of up to 36,000 IOPS¹. With a 10% IOPS² distribution and max latencies of <500µs for 99.9%² of the time, the DC S3700 Series will enable quick and consistent command response times. All this performance delivered with low active power consumption (less than or equal to 6 watts¹) means this Intel SSD will help reduce your overall energy costs—making it an excellent value for data center storage application upgrades!

Intel® Cache Acceleration Software

Increase the performance of your server applications

Intel® Cache Acceleration Software (CAS), combined with the Intel® Solid State Drive DC 3700 significantly improves the performance of hard drive-bound server applications. Intel® CAS uses an intelligent predictive algorithm when determining what data to evict from the caching, keeping more of the useful data in the cache than a simple first-in, first-out algorithm. Intel® CAS enhances protection of existing investments in hard drives by using the SSD as a cache, resulting in reduced latencies and up to 50x IOPs performance improvement^{3, 4} over hard drives alone!

Intel® Ethernet Converged Network Adapters

Enabling IT managers to reduce complexity and overhead while enabling a flexible and scalable data center network

Intel Ethernet Converged Network Adapters are built on over three decades of Ethernet expertise and are designed for simplicity, cost-effectiveness, compatibility, flexibility and performance for demanding applications. Today's data centers are looking to reduce TCO while getting the best possible performance, and Intel delivers Ethernet products and innovations to meet those needs.

SOLUTIONS BRIEF

- The Intel Ethernet Controller X540 is the industry's first single chip (MAC/PHY) 10GBASE-T controller and reduces power and cost, making the transition to 10 Gigabit easier.
- 10GbE Intel Ethernet Converged Network Adapters take advantage of the I/O advancements of Intel® Xeon processor-based servers with Intel® Data Direct I/O to deliver lower latency, higher I/O bandwidth, and reduced power consumption.
- Combining multiple Ethernet ports onto a single high speed 10GbE Intel Ethernet connection delivers up to 80% reduction in cables and switch ports⁵, reducing costs and simplifying the network.

Whether your storage is hard disks or solid state drives, unifying LAN, SAN (FCoE, iSCSI), and cluster traffic over a common, high-performance Ethernet fabric using 10 Gigabit Intel Ethernet Converged Network Adapters can lower infrastructure TCO and simplify your data center.

Showcasing a Better-Together Solution

Nexenta and Intel combine to provide enterprise-class storage at a fraction of the cost of proprietary storage technologies*

The Santa Clara-based company Nexenta has a software offering called NexentaStor* that can turn off-the-shelf components into an Enterprise class storage powerhouse. When built with Intel® Xeon E5 processors, Intel® SSD DC S3700 and DC S3500 solid-state drives, and Intel® X540 10Gb Ethernet Network Adapters, this system provides performance that rivals or even exceeds expensive, vertically integrated, proprietary storage technologies. This combination can save the data center customer as much as 80% over proprietary solutions⁶.

This system can provide shared storage to all applications with IP connectivity, including VMware* vSphere*, Microsoft* Exchange*, Oracle* RAC, and many others. This system also supports Intel® Cache Acceleration Software (iCAS) installation on clients/servers, allowing access to NexentaStor to leverage local/SAN storage for a cache without the need to move the applications' storage.

NexentaStor helps organizations implement high-performance, yet cost-effective data storage solutions with features such as inline deduplication, unlimited snapshots and cloning, unlimited file size, and high-availability support. In addition, NexentaStor functionality includes full integration with virtualization approaches, even in mixed vendor environments. This solution can create shared pools of storage from any combination of storage hardware, including SSDs, and delivers end-to-end data integrity, integrated search, and inline virus scanning. NexentaStor also enables efficient one-click virtual machine and other storage provisioning.

For more information, contact your Intel representative today, or visit www.intel.com

¹ Based on the Intel® SSD DC S3700 Series Product Specification.

² Device measured using Iometer with 4K Random Writes QD=32 across 100% span of the drive. Latency measured using write transfer size of 4KB (4,096 bytes) and queue depth set to 1

³ Configuration Intel® Server model 2600CO (Copper Pass); Intel® E5-2680 processor (2.7GHz), 32GB DDR2/1333 memory; Microsoft* Windows 2008R2 SP1, Intel® CAS 2.0 release candidate 1; Iometer 10.22.2009 ; 4K Random Read test; 32-queue depth; 800Gig Intel SSD 910 series, Intel RAID RS25AB080 with MR54p1 firmware; 8 x 10K SAS HDD in a RAID0 array with MR54p1 firmware; 8 x 10K SAS HDD in a RAID0 array

⁴ Results have been estimated based on internal Intel analysis and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance

⁵ Intel 10GbE ROI Calculator. <http://www.event-management-online.de/LAD/calculator.aspx>

⁶ Source: <http://www.nexenta.com/corp/nexentastor>

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