Inspiring IT Innovation with SSD Solutions

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Technology and SSDs Advancements

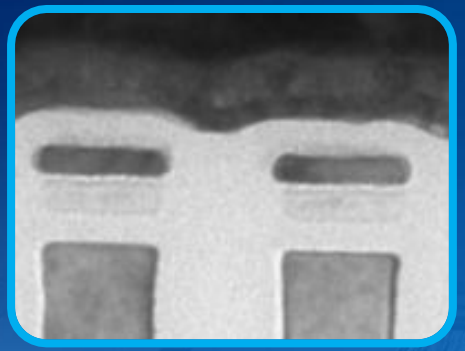
How Solid-State Drives Deliver Business Value

Solid-State Drives - The Possibilities Ahead

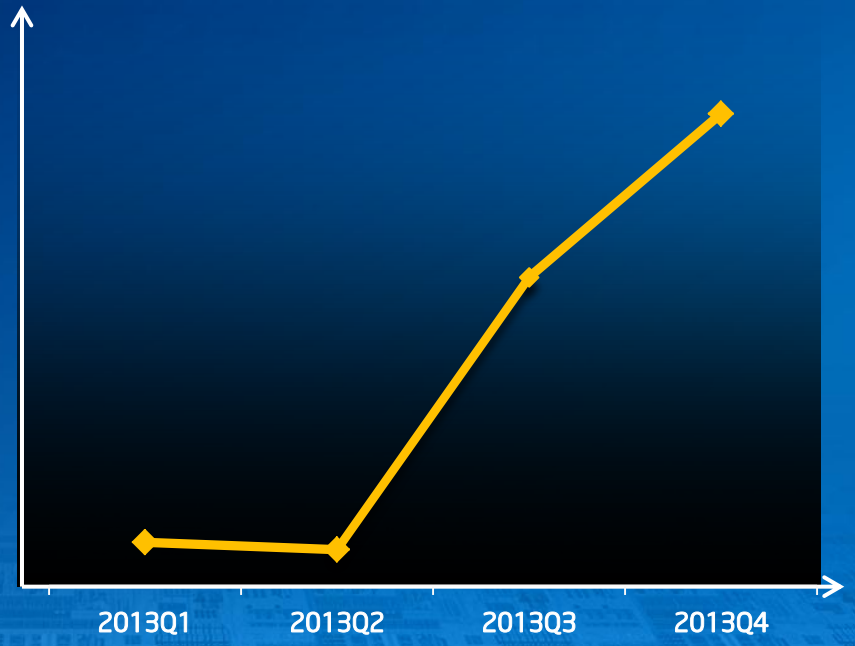
Solid-State Drives Technology Advancements

Rapid Technology Advancements

2012



20nM
Hi-K Dielectric Metal Gate
Planar Cell



Planar Cell
Products ramping quickly

intel

Client Platform Trends

2008 2013

HDD SATA m.2

Client Platform Trends

2008

2013

Enterprise Platform Trends

2008 2013

Enterprise Platform Trends

2008

HDD SATA

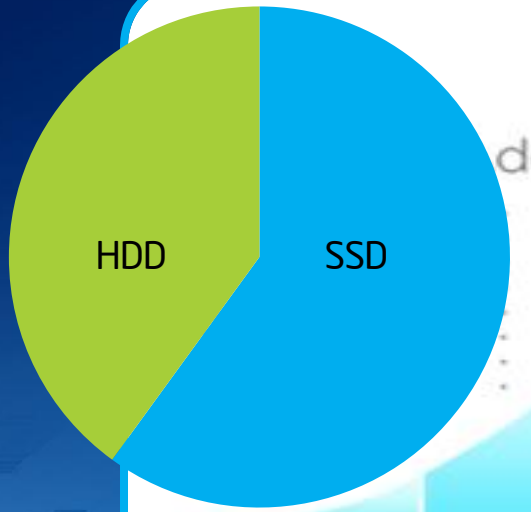
2013

DELL IBM hp

intel

Time to Target the Majority

Early Adopters using SSDs in Data Centers



Intenders using SSDs In Data Centers

Sources: Intel Insights and Market Research (IMR), Q3'12, and Geoffrey Moore, Crossing the Chasm

Solid-State Drives Delivering Business Value

Key IT Challenges

Scaling Performance / TCO

Energy Efficiency

Delivering New Workloads

Securing the Environment

Business Solution
Cloud Virtualization with Intel® SSDs

Improved performance while saving space, power and cost

Cloud Virtualization Solutions

	Cloud Solution with HDDs[1]
VMs Supported	500
Storage Cost ($)	~$145K
Storage Rackspace (U)	42
Storage Power (kW)	7.5
Storage Cooling Power (kW)	9.4

Server with HDDs

1. Configuration: Five hundred 600Gb 15k RPM HDDs running 500 VMs at 200 IOPs each. Source: Intel Internal testing For more information go to : intel.com/go/ssd

Intel® SSDs Accelerate Cloud Virtualization

	Cloud Solution with HDDs		Cloud Solution with Intel® SSDs
VMs Supported	500		500
Storage Cost[1] ($)	~$145K	>12X ↓	~$12K
Storage Rackspace[2] (U)	42	>20X ↓	2
Storage Power (kW)	7.5	>125X ↓	.06
Storage Cooling Power (kW)	9.4	>125X ↓	.075

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors and SSDs. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases. New Configuration : Intel® SSD DC S3500 SW SAN Solution (12 x 800G) Internal Intel testing July 2013. 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. 1 Capital cost of server and SSDs only divided by number of active users. Additional savings of rack space, power and cooling not included 2. From 42u to 2u rackspace. Performance based on VM latency per equal number of VMs.

Business Solution
Email Server Design with Intel® SSDs

More Users with Improved User Experience

Email Proof of Concept with Intel® SSDs

	40 HDDs		16 Intel® SSDs
Active Users[1]	6000	2X ↑	12000
Size[1]	6U	3X ↓	2U
Mail Submission Time[1]	600ms	6X ↓	100ms
Total Power + Cooling[1]	1.8 kW	4X ↓	0.4 kW

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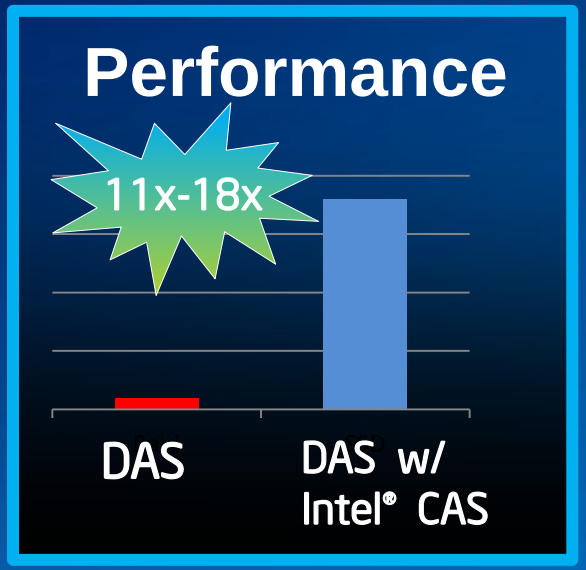
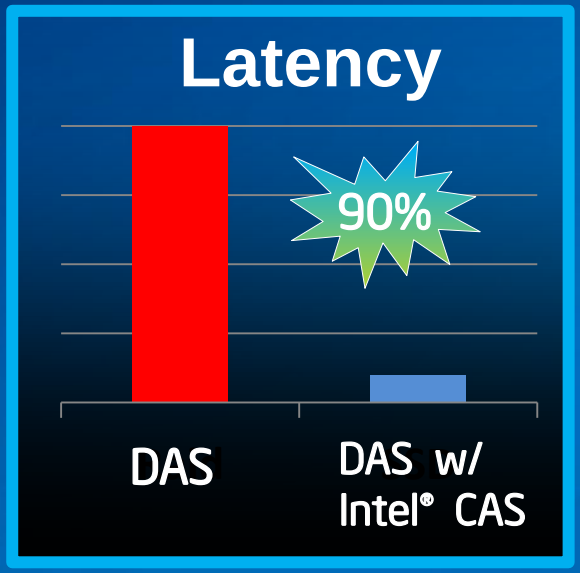
Business Solution
Accelerating Existing Storage with Intel® CAS

Cache
Acceleration
Software

Maximizing limited hardware and storage resources

Accelerating Existing ERP Applications Storage





"Intel® CAS and Intel® SSDs provides an immediate return on investment while delivering a significant increase on system performance."
– Dan Oughton, CTO, IndustryBuilt

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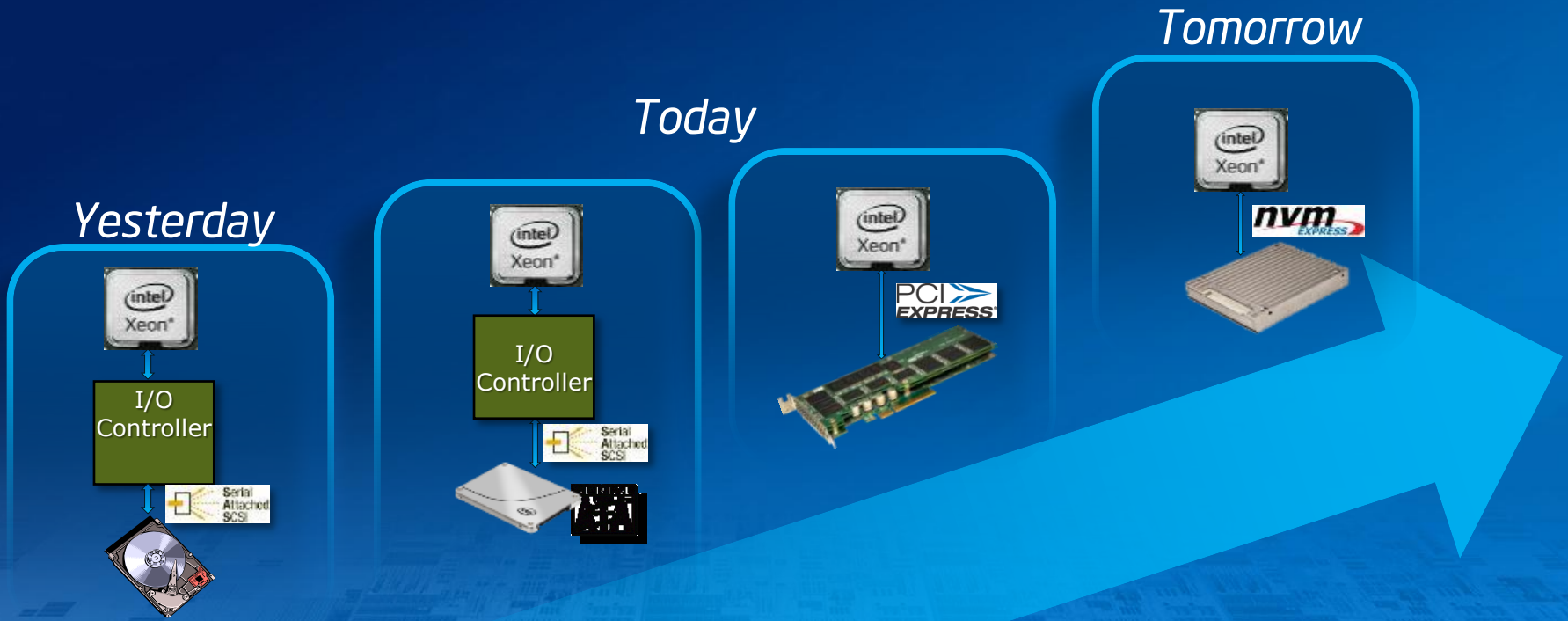
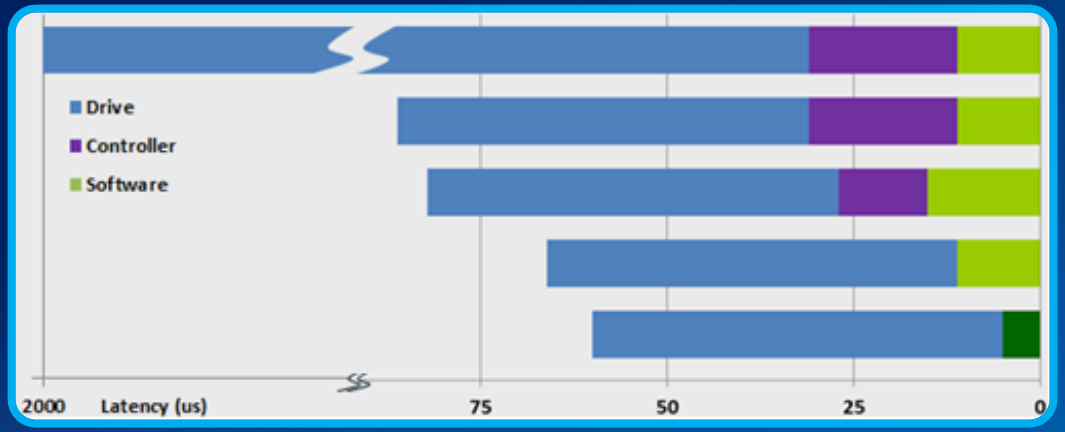
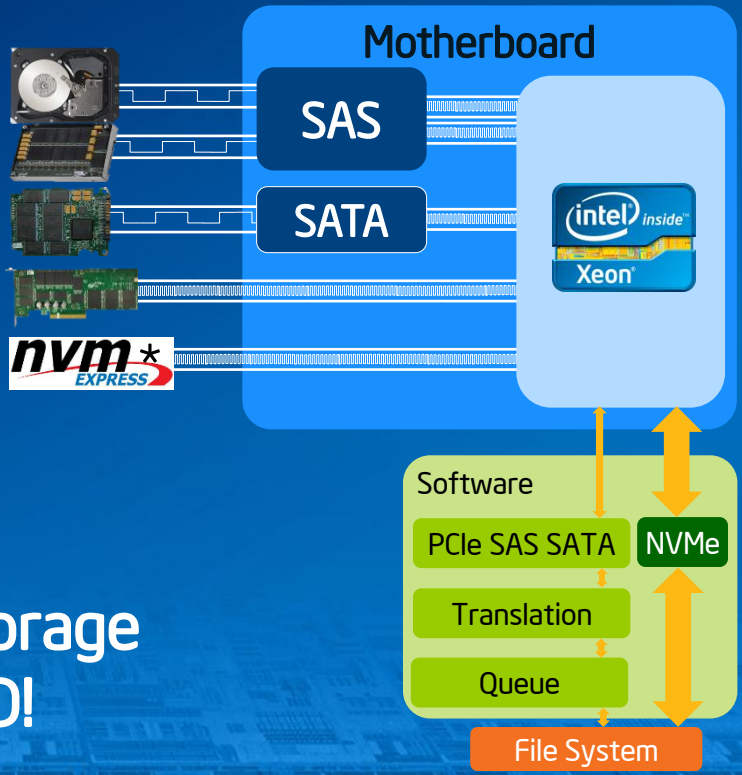
Solid-State Drives The Possibilities Ahead

Storage Moves Closer to the Processor



Storage Performance Transition





NVMe is the largest percentage storage latency reduction since the SSD!

Potential for Adoption Rates

Thank You

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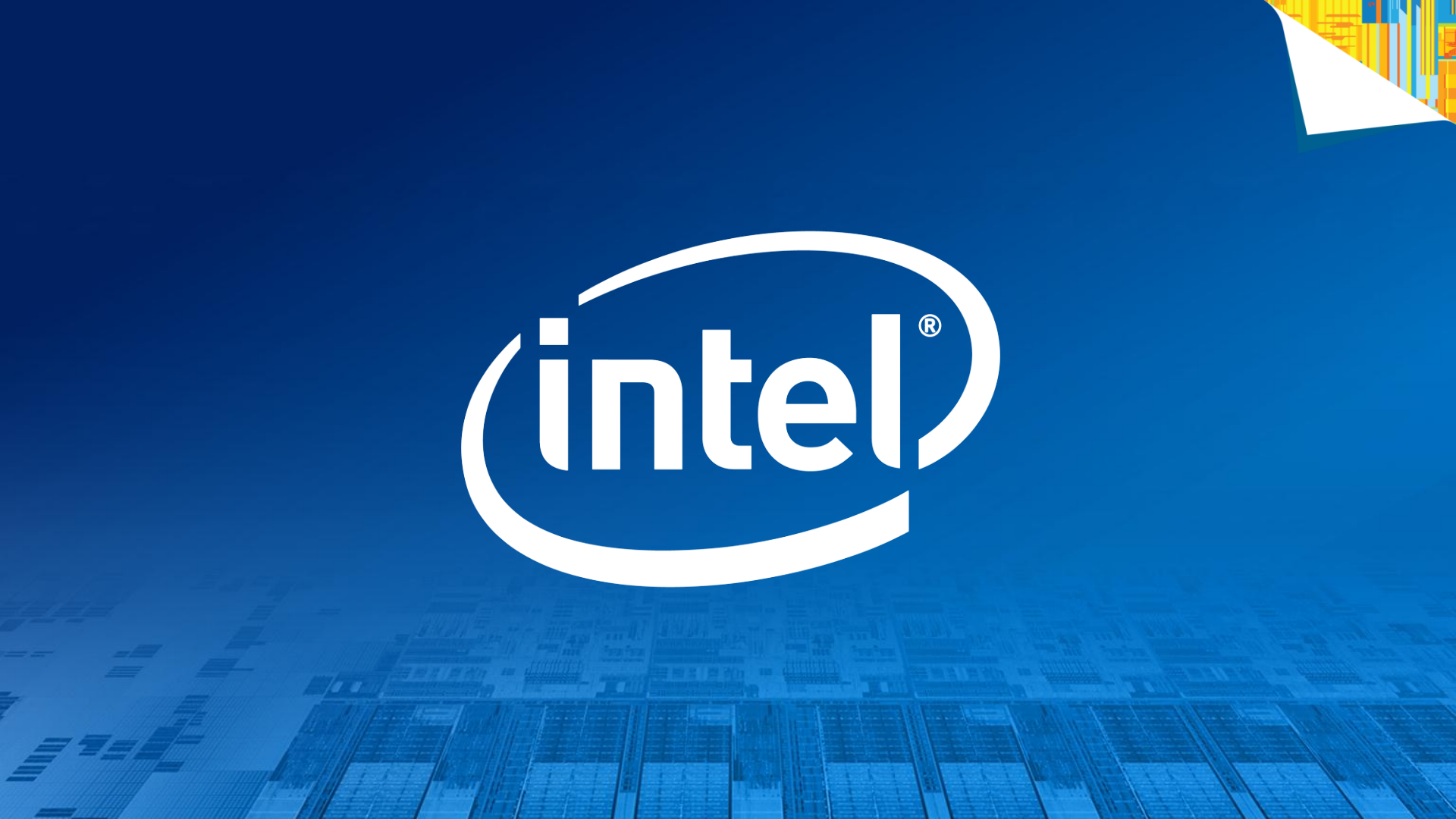
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