Intel's Vision

This decade we will create and extend computing technology to connect and enrich the lives of every person on earth
The Three Pillars of Computing

Energy Efficient Performance

Internet Connectivity

Security
Relentless Pursuit of Moore’s Law Opens the Door to Innovation…

22nm
A Revolutionary Leap in Process Technology

STRAINED SILICON

HIGH-k METAL GATE

TRI-GATE

The foundation for all computing

2003
90 nm
Invented SiGe Strained Silicon

2005
65 nm
2nd Gen. SiGe Strained Silicon

2007
45 nm
Invented Gate-Last High-k Metal Gate

2009
32 nm
2nd Gen. Gate-Last High-k Metal Gate

2011
22 nm
First to Implement Tri-Gate

37%
Performance Gain at Low Voltage*

>50%
Active Power Reduction at Constant Performance*

Source: Intel
*Compared to Intel 32nm Technology
Technology Leadership Provides:

Servers Gain 60% Power Efficiency/yr

PCs get Ultra Thin and Light
Advancing toward a worry free computing experience

Anti-Malware: Malware finds nowhere to run or hide
Data: Data stays where it belongs
Identity: Your identity is safe and trusted
Recovery: Back in action even after attack by malware
Evolution of IT

Cloud

Consumerization

Big Data
Cloud Computing – Rise of “as a Service”

Private Clouds, Public Clouds, Hybrid Clouds – delivering services to billions of connected devices

Intel’s Cloud 2015 Vision

The need to manage Internet growth

By 2015, we will need…

- 8X Network
- 16X Storage
- 20X Compute Capacity

Agile, Flexible and Scalable Business Services
End Users Want
Freedom, Flexibility

IT Pros Need
Security, Manageability

Form Factor Innovation
Universal Collaboration
Blended Computing
Business Assistant

Comprehensive Security
Automated Manageability
Compute Model Flexibility
Big Data
Volume, Velocity, Variety, Value

Big Corporate Data + Big Web Data + Big Sensor Data provides a potential gold mine that can be mined for value.

- **20 PB** = HDD capacity manufactured in 1995
- **39,000 PB** = Unstructured data in 2011
- **226,000 PB** = Forecast unstructured data by 2015

Companies will need to deal with **50x** more data by 2020.

Business Analytics will be a Competitive Differentiator.
Optimizing for Real Time Analytics

New Software Approaches

Distributed File Systems

In-Memory Analytics

Advanced Hardware Capabilities

NETWORK BANDWIDTH

COMPUTE PERFORMANCE

STORAGE CAPACITY & SPEED

PROGRAMMING MODELS & TOOLS
Datacenter Roadmap
Standard, flexible platform enables scale

Server

Storage

Network

intel inside™

Xeon®
Introducing the Intel® Xeon® Processor E5 Family

80% Performance Gain¹

Breakthrough I/O Innovation

Trusted Security

Best Data Center Performance per Watt²

The Heart of a Flexible, Efficient Data Center Built to Scale

¹ Performance comparison using best submitted/published 2-socket server results on the SPECfp_rate_base2006 benchmark as of 6 March 2012. Configuration details in backup
² Performance comparison using SPEC Power results published as of March 6th, 2012. See back up for configuration details. For more information go to intel.com/performance
Intel® Integrated I/O

**Improve I/O bandwidth up to 3X** with Intel® Integrated I/O

Reduce latency by up to 30%

PCI Express* 3.0

2x greater bandwidth

Source: Intel internal measurements of average time for an I/O device read to local system memory under idle conditions comparing Intel® Xeon® processor E5-2600 product family (230 ns) vs. Intel® Xeon® processor 5500 series (340 ns). See notes in backup for configuration details.


Up to 2.3x I/O performance is 1S with a Xeon processor 5600 series vs. 1S Xeon Processor E5-2600 data for L2 forwarding test using 8x10GbE ports. See notes in backup for configuration details.

Inte Internal measurements of maximum achievable I/O R/W bandwidth (912B transactions, 50% reads, 50% writes) comparing Intel® Xeon® processor E5-2680 based platform with 64 lanes of PCIe* 3.0 (66 GB/s) vs. Intel® Xeon® processor X5670 based platform with 32 lanes of PCIe* 2.0 (18 GB/s).

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.
Continuing Processor Advancement
Next Generation Intel® Xeon® Processor E7 & E5 Families

- Best-in-class performance
- Exceptional energy efficiency
- Robust hardware enhanced security
- Improved virtualization with APICv
- New advanced reliability features for the Intel Xeon® processor E7 Family
- In Production: 2013

22nm Processors Expected To Offer:
Business Clients
The Evolution of vPro

Enterprise Remote Management
Enhanced Security Wireless
Reach Beyond Firewall
Data & Asset Security, HW-KVM Remote Control
Host-Based Configuration AT 3.0**
Identity Protection – PKI SCS 8.0


vPro 1.0  vPro 2.0

Now Available on Intel® Xeon® processor
Ultrabook™
A new category that meets the emerging needs of the business user

**Sleek, Cool, Super Responsive, and a Full PC**
- Instant on, always on, always connected
- High performance, visual, and media experience
- Extended battery life, multi-week standby
- Sleek design – 1-2 external connectors + wireless
- Full keyboard + convertible to full touch
- Sensors – accelerometer, GPS, compass, gyro
- IA compute continuum, security, and perceptual computing experiences

“**It’s a tablet when I want it. It’s a PC when I need it. All day. Every day.”**
Summary

Technology leadership provides tremendous gains in:
- Energy efficient performance
- Internet connectivity
- Security

…and drops deployment barriers to cloud and big data

Intel Architecture across compute, storage and networking enables flexible scaling of IT infrastructure

vPro enables secure management of consumer devices and intelligent systems in the enterprise