Intel Roadmap Overview
August 20th 2008

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Agenda

Server Roadmap
Client Roadmap
Netbook / Nettop
Ultra Mobile
Server Products
All products, dates, and programs are based on current expectations and subject to change without notice. Timeline refers to Intel component production dates.
Enterprise: 2008 Nehalem Based Two Socket System Architecture

Nehalem-EP Platform:
- Two sockets each with Integrated Memory Controller
- Turbo mode operation
- Intel® QuickPath Architecture
- DDR3 Memory: 3 Channel, 3 DIMMs per channel
- Intel® Virtualization Technology
- PCI Express* Gen 2

PCI Express* Gen 2
ICH 9/10
X58 I/O Hub

World’s Most Adaptable Server Platform

* Other names and brands may be claimed as the property of others
Enterprise: 2009 Nehalem Based
Four Socket System Architecture

Boxboro-EX Platform:
Four processors with Intel® QuickPath Interconnects
PCI Express® Gen 2, Integrated Memory Controller

* Other names and brands may be claimed as the property of others.
Intel® Xeon® 7400-based Server Platform Dunnington Extends Caneland Technology Leadership

Latest Intel virtualization capabilities
6 cores, 16 MB L3 cache
- 4-core/large cache versions available
Socket compatible with Caneland platform
45nm Hi-K technology
1.9 billion transistors
Introduction Sep. 2008

Caneland with Dunnington delivers higher virtualization performance for consolidation and data demanding applications offering more cores, cache and large memory footprint
**Intel Xeon® 7400 Series (Dunnington)**

**Best-of-class benchmark performance**

**First 1 million+ TPC-C result for Xeon!**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Vendor</th>
<th>Result</th>
<th>Price</th>
<th>Availability</th>
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<td>8S TPC Benchmark* C - DB2</td>
<td>IBM</td>
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<td>SPECjbb*2005 – Java HotSpot JVM</td>
<td>Sun Microsystems</td>
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<td>TPC Benchmark* E – SQL Server*</td>
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<td>671.4 tpsE</td>
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<td>vConsolidate - VMware* ESX</td>
<td>VMware</td>
<td>39% better**</td>
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<td>SPECint*_rate2006</td>
<td>Fujitsu Siemens</td>
<td>277 peak score</td>
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</table>

**Expandable Server Leadership**

**Intel Xeon X7460 (16M cache, 2.66GHz, 1066FSB) 6-Core compared to Intel Xeon X7350 (4M cache, 2.93GHz, 1066FSB) Quad-Core.**
Client Products
Intel Notebook / Desktop Roadmap

2008*

2007 and 2008 Desktop Platforms
- 45nm Intel® Core™2 Extreme proc.
- 45nm Intel® Core™2 Quad proc.
  (shipping)
Intel® X48, X38, P45, and P35 Chipsets

Desktop Extreme / High-End Desktop
- Desktop Performance / Mainstream
- Mobile Extreme
- Mobile Performance / Mainstream

Santa Rosa & Montevina Platforms
- 45nm Mobile Intel® Core™2 Extreme processors
  (Dual-Core shipping today, Quad-Core Q3’08)
Intel® 96x and 4 Series Chipsets

Calpella Platform
- Clarksfield Processor (4C/8T)
- Auburndale (2C/4T)
- Ibex Peak-M

Piketon / Kings Creek Platforms
- Lynnfield (4C/8T)
- Havendale (2C/4T)
- Ibex Peak

All products, dates, and programs are based on current expectations and subject to change without notice.
Timeline refers to Intel component production dates
INTRODUCING

NEW INTEL® CORE™ PROCESSOR FAMILY

Intel’s Most Advanced Processors Ever!
2008 Nehalem Desktop Platform

Intel® Core™ i7 Processor

- 4 cores, 8 threads
- Turbo mode enabled
- 8M Intel® Smart Cache
- Intel® QuickPath Interconnect
- Extreme SKU has overspeed protection removed for overclocking
- Integrated Memory Controller
  - 3 Channels of DDR3 Memory
  - 2 DIMMs per channel
- Dual x16 PCI Express* Gen 2 configurable as quad x8

The Intel® Core™ i7 Desktop Platform Architecture Delivers New Levels of Performance and Bandwidth

Warning: Altering clock frequency and/or voltage may (i) reduce system stability and useful life of the system and processor; (ii) cause the processor and other system components to fail; (iii) cause reductions in system performance; (iv) cause additional heat or other damage; and (v) affect system data integrity. Intel has not tested, and does not warranty, the operation of the processor beyond its specifications.

* Other names and brands may be claimed as the property of others
Mainstream Client Platform Partitioning

Today’s 3-Chip Solution
- CPU
  - FSB
  - Intel® 4 Series Chipset
    - iGFX
    - IMC
    - Display
  - DMI
- ICH10
  - I/O

New 2-Chip Solution
- Processor
  - PCIe* Graphics
  - iGFX
  - IMC
  - DMI
- Ibex Peak
  - Display
  - ME
  - I/O
- DDR3

- Graphics moves into Processor
- Memory Controller moves into the Processor
- Display moves into Ibex Peak
- Intel® Manageability Engine moves into Ibex Peak

Smaller boards, lower power, simplified power delivery
Greater performance via higher integration (igfx/IMC)

* 2009 mainstream Nehalem processors available with and without igfx
2009 Mainstream Client Processors

One Common Processor Socket & Platform

New 2 Chip: Discrete GPU
- Lynnfield (4C/8T)
- Clarksfield (4C/8T)
- Graphics: 2x8 or 1x16
- Memory: Ibex Peak

New 2 Chip: CPU/GPU OR Discrete GPU
- Havendale (2C/4T)
- Auburndale (2C/4T)
- Graphics: 1x16
- Memory: Ibex Peak
Netbook / Nettop
A New Category of Devices

**Want the “Best Internet Experience in Your Pocket”?**

- Get a Mobile Internet Device
  - MID: Infotainment, On The Go

**Want a Simple Device for Internet Use?**

- Get a Netbook or Nettop
  - Internet use
  - Target SPP
    - Netbook: ~$249-349
    - Nettop: ~$199-299

**Want a Richer, Fuller Experience?**

- Get a Notebook or Desktop
  - Entertainment, Productivity and Multitasking

*Other brand and names are the property of their respective owners*
Nettop / Netbook Roadmap

2007
Celeron 220
65nm
Low Cost
Purpose Built Platform

2008
Intel® Atom
45nm
Nettop Solutions
Lower Power
Lower Cost
Single and Dual Core Solutions

2009+
Continued innovation at the silicon and platform level

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* DC on Nettop only
For Netbook and Nettop Platforms

Intel® Atom™ Processor Based Platform

- New low-power architecture designed from the ground up to enable simple, purpose-built devices for the Internet
- Manufactured using Intel’s industry-leading Hi-K Metal Gate 45nm process technology
- Single core and Dual core proc*
- With Intel®945GC and 945GSE chipsets
- 50+ OEM & ODM design wins

Available Today!

* DC on Nettop only
Ultra Mobile
Ultra Mobile Roadmap

**2008**
- 45nm
- Silverthorne and Poulsbo
- Responsive Internet Experience
- First Grounds Up
- Low Power CPU and Chipset

**2009/2010**
- 45nm
- Projected >10X Reduction In Idle Power Compared to 2008 Platform
- First Entry Into Phone Form Factors

**Future**
- 32nm
- Higher Levels Of Integration
- Continued Benefits From Leading Edge Process

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Thanks

Q & A
Intel’s Tick Tock Development Model

- **2005-06**
  - **TICK**
  - Intel Pentium® D, Xeon®, Core™ processors
  - 65nm

- **2007-08**
  - **TICK**
  - Intel® Core™ 2, Xeon® processors
  - PENRYN processors
  - 45nm

- **2009-10**
  - **TICK**
  - WESTMERE processors
  - NEHALEM processors
  - SANDY BRIDGE processors
  - 32nm
Significant Market Opportunity For Netbooks and Nettops

**Emerging Markets**

- Majority of households surveyed in emerging markets have zero PCs
- Opportunity: First time buyer, primary device

**Mature Markets**

- Minority of households surveyed in mature markets have > 1 PC
- Opportunity: Nth time buyer, secondary device

Segment expected to grow to over 100Mu by 2011

*Survey limited to major cities in Emerging Markets and do not represent all emerging market populations*

Client: 2008 → 2009 Desktop Transition

2008

Q9000 and E8000 Series
Core Micro-architecture on 45nm

2009

Intel® Core i7 Extreme
Intel® X58
Nehalem Based

Intel® Core i7 (4c/8T)
Nehalem Based

Lynnfield (4C/8T)
Havendale (2C/4T)

Ibex Peak

Core Micro-architecture on 45nm

Diamondville
Integrated Board Solution

Higher Integration
Integrated Board Solution