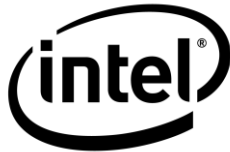


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# News Fact Sheet

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## **Intel Demonstrates First Working 32nm-based Microprocessor in Both Mobile and Desktop Systems**

Feb. 10, 2009 — At a media briefing in San Francisco today, Intel Corporation discussed new milestones for 32nm manufacturing and progress toward future products. Earlier that day, in Washington, DC, Intel President and CEO Paul Otellini disclosed that Intel is making the largest-ever investment in a single process technology in the United States to support upgrades to advanced manufacturing facilities in the country and the move to its next-generation, 32nm chip manufacturing technology. Intel is investing approximately \$7 billion in 2009-10 on 32nm manufacturing technology, raising the total by the end of that timeframe to approximately \$8 billion (for 32nm investment in the United States).

Below is a summary of the product roadmap news at the briefing in San Francisco:

### **First-ever demonstration of a working 32nm-based microprocessor:**

- Intel is demonstrating the first 32nm working microprocessor in both mobile and desktop systems.
- Great 32nm process and product health are enabling Intel to accelerate 32nm product ramp
  - Westmere mobile and desktop processor production in the fourth quarter of 2009
  - 32nm enables increased performance and power flexibility
- Intel processors based on Westmere will ramp into mobile, desktop, and server segments over time, as the 32nm process ramps

### **For client, Westmere brings Nehalem through Intel's mainstream processor product line**

- Increased performance, smaller processor core size
- New multi-chip package with graphics integrated in the processor
- Repartitioned system architecture, simplified motherboards
- Volume ramp; expect 32nm in server market in 2010

## Westmere key features

- Intel® Turbo Boost technology
- Intel® Hyper-Threading technology (2 Cores, 4 threads)
- Integrated graphics, discrete/switchable graphics support
- 4MB cache, Integrated Memory Controller (IMC) – 2ch DDR3
- AES Instructions

## The 32nm process with second-generation high-k + metal gate transistor era begins

Intel's strength as an integrated device manufacturer allows the company to continue to deliver new generations of advanced process technology on a 2-year cadence. Intel has developed a 32nm logic technology with industry-leading features:

- Second-generation high-k + metal gate transistors
- 32nm marks the first time Intel uses immersion lithography on critical layers
- 9 copper + low-k interconnect layers
- About 70 percent dimension scaling from 45nm generation
- Pb- and halogen-free packages

## Nehalem and Westmere decoder ring

|                | Segment                                      | Nehalem (45nm)        | Westmere (32nm)                 |
|----------------|--|-----------------------|---------------------------------|
| <b>Desktop</b> | High-End                                     | Bloomfield (4C / 8T)  | Gulftown (6C / 12T)             |
|                | Mainstream                                   | Lynnfield (4C / 8T)   | Clarkdale (2C / 4T + iGFX)      |
| <b>Mobile</b>  |  | Clarksfield (4C / 8T) | Arrandale (2C / 4T + iGFX)      |
| <b>Server</b>  | Expandable Scalable (typically 4+ sockets)   | Nehalem-EX (8C / 16T) | Future Westmere Based Processor |
|                | Efficient Performance (typically 2+ sockets) | Nehalem-EP (4C / 8T)  | Future Westmere Based Processor |
|                | Entry (EN) (typically 1 sockets)             | Lynnfield (4C / 8T)   | Clarkdale (2C / 4T + iGFX)*     |

C = number of processor cores

T = number of software threads supported

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