



Fact Sheet

INTEL MULTI-CORE FACTS, FIGURES AND DECODER RING

INTEL DEVELOPER FORUM, SAN FRANCISCO, March 1, 2005 – Today Intel discussed more than 15 dual and multi-core projects underway throughout the company's high-end server, volume server, workstation, desktop, mobile and networking platform families. Three of these processors were disclosed for the first time: Presler, Paxville, and Dempsey. Intel also outlined code names for each of its platform areas. Please refer to the 'code name decoder ring' on page three for more details.

- **Engines for Intel-based Platforms** -- The >15 multi-core processor projects underway will be the engines that fuel Intel's digital home, office, mobile and enterprise platforms, addressing new and different multi-tasking, multi-user and usage opportunities. Intel is developing chipsets, wireless chips, I/O processors, software and other user-centric silicon innovations in the areas of virtualization, manageability, security, 64-bits, XD technology, network acceleration and much, much more into its platforms.
- **Shipment Plans** -- Intel today reconfirmed its 2004 statement that it expects to exit 2006 shipping dual core processors at a rate of more than 70 percent for its desktop and mobile Pentium family and more than 85 percent for servers.
- **Dual Core Desktops, Brand Names** -- Intel reiterated that it plans to deliver the dual core Intel® Pentium® Processor Extreme Edition for PC enthusiasts and the dual core Intel Pentium D processor for mainstream PC users in the second quarter. The new Pentium D processor brand name was formerly code-named Smithfield. The Pentium Processor Extreme Edition, which included a new brand logo also revealed today, will include Hyper-Threading technology, showcasing the capability of four threads or instructions simultaneously versus single and dual threads from one and two-core processors.
- **Multi-threaded, Dual Core Benefits** -- Intel also demonstrated a Pentium Processor Extreme Edition running the Cinebench 2003 benchmark, based on the Maxon* Cinema 4D application. It showed an image rendering based on a single thread versus four threads, then calculated the benefit. This showed that Intel's forthcoming platform running today's Windows* XP operating system can provide performance improvement from one to four threads.

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- **Software Development** -- While Intel's 2002 Hyper-threading technology and related developer and application enabling programs and services have led to mainstream operating systems and hundreds of multi-threaded applications, there is much work left to do. Intel is dedicating thousands of software and solution architects, a range of programs and services, and a suite of developer tools and products to help the industry move forward on development. New disclosures today include Intel's threading immersion program, an in-depth developer-focused effort to assist with developing applications that can manage multiple cores and threads.
- **Manufacturing Investment** -- As the semiconductor industry shifts to single products that contain multiple cores, manufacturing technology and capacity become paramount. Intel has invested more than \$35 billion in capital and R&D since 2000 to bulk up its capacity. Intel has 11 manufacturing plants (or "fabs") worldwide. Four of these fabs are already producing 300 mm-sized wafers – the "plates" that processors are produced on. These larger wafers produce about 2.5 times more chips per wafer than the older 200 mm version and enable lower production costs, reducing the costs per individual component by about 30 percent. Intel is also shipping tens of millions of processors on its 90 nanometer process and expects to begin producing 65 nanometer products later this year.

MULTICORE DECODER RING FOR INTEL'S CODE NAMES

(#) Designates a New Disclosure at IDF

Intel Platforms

Mobile – “Napa”

“Yonah” mobile-optimized dual core processor, “Calistoga” Chipset, “Golan” Wireless

Desktop Home

2005 “Anchor Creek” - Intel® Pentium® Processor Extreme Edition, Intel Pentium D Processor, Intel Pentium 4 Processor, “Presler”, “Cedar Mill”, 945G/955X Express Chipset, 83573E LAN

2006 “Bridge Creek” - “Presler”, “Broadwater” Chipset, Intel® GbE solution

Digital Office

2005 “Lyndon” - Intel® Pentium® D Processor, Intel Pentium 4 Processor, “Presler,” “Cedar Mill,” Intel 945G/955X Express Chipset, Intel PRO/1000 PM Network Connection, Intel Active Management Technology, Intel Virtualization Technology

2006 “Averill” - Intel® Pentium® 4 Processor, “Presler”, “Cedar Mill”, “Broadwater” Chipset, Intel Active Management Technology², Intel Virtualization Technology, LaGrande Technology

Datacenter/Enterprise (Server)

Intel® Pentium® D Processor (UP server, “Mukilteo” Chipset)

Bensley (DP Servers, “Dempsey”, Blackford chipset)

Truland (MP Servers, “Paxville”, “Tulsa,” E8500 chipset)

Itanium® Processor Family (“Montecito”, E8870 chipset)

Richford: future Itanium®-based platform (“Tukwila”, “Poulson,” Future chipset)

Reidland: future platform for MP servers (MP Server, “Whitefield”, Future chipset)

Processors, Chipsets and Technology

“Cedar Mill”

Intel’s 65nm single core desktop processor, expected in the first half of 2006.

Hyper-threading Technology (HT)

A silicon innovation developed in the late 1990s and introduced to our server and desktop processors in 2002. HT enables two instruction threads to run simultaneously making more efficient use of existing processor resources to increase overall compute capability. HT “tricks” modern operating systems and applications into thinking two processor cores are inside.

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“Smithfield”

Intel’s first-ever dual core code name for desktop PCs. Now makes up two brands (see next two entries).

Intel Pentium Processor Extreme Edition

A variant of the Smithfield dual core processor that supports HT in addition to being dual core. It is expected to be introduced in the second quarter of this year (April-June).

Intel Pentium D processor (#)

Brand name for the Smithfield standard dual core processor. HT will not be included.

“Presler” (#)

Intel’s 65nm desktop dual core processor (two Cedar Mill cores) in a multi-chip processor package (MCP), expected in the first half of 2006.

“Yonah”

Intel’s 65nm mobile optimized dual core processor, expected to ship by 2005 with an official introduction in the first quarter of 2006. Yonah is part of Intel’s “Napa” mobile platform.

IXA Processor

Shipping since 2000, this networking processor already contains 16 micro-engines or what some analysts refer to as multicores.

Dempsey (#)

Intel’s 65-nm dual core processor for dual processor, Intel Xeon processor-based servers & workstations, expected in Q1 2006.

Paxville (#)

Intel’s 90-nm dual core processor for Intel Xeon processor MP –based servers, expected in Q1 2006.

Tulsa

65nm dual core processor for Intel Xeon processor MP-based servers, follow on to Paxville, expected in 2006

Whitefield

65-nm processor for Intel Xeon processor MP-based servers , targeted for 2007, shares common platform architecture with Tukwila.

Montecito

Intel’s forthcoming 90-nm dual core processor in the Intel Itanium® processor family, with shipments starting in the fourth quarter of this year. Montecito will also include support for 4 threads per processor.

Millington

Future 90-nm dual core processor in the Intel Itanium® processor family dual for DP servers.

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Montvale

90-nm dual core processor follow-on in the Intel Itanium® processor family based on Montecito, targeted for 2006.

Tukwila

Intel Itanium® processor family multi-core processor for MP servers. Will contain four or more cores, targeted for 2007.

Dimona

Intel Itanium® processor family processor for DP servers based on Tukwila.

Poulson (#)

Future processor in Intel Itanium® processor family following Tukwila.

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Hyper-Threading Technology requires a computer system with an Intel® Pentium® 4 processor with Hyper-Threading Technology and a HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. Visit www.intel.com/info/hyperthreading for more information, including details on which proces