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Intel's Next Processor Details Leaked?

(www.internetnews.com Via Acquire Media NewsEdge) A Taiwanese publication is reporting that Intel (NASDAQ: INTC) plans to release three Nehalem quad-core processors at the end of the fourth quarter, complete with specs on the new chips. DigiTimes, based in Taipei, cited motherboard vendors as its sources, many of which are also based in Taipei.

The official model names have not been set, but the specs list the three CPUs with the codenames XE, P1 and MS3 at clock speeds of 3.2GHz, 2.93GHz and 2.66GHz, respectively. All three have a thermal design power (TDP) envelope of 130W, 8MB L3 cache and come with simultaneous multi-threading (SMT) technology, which will allow for two threads per core, the report said.

In addition to the chips, Intel (NASDAQ: INTC) will also launch the X58 and ICH10 chipset combination to support these processors. These will use the QuickPath Interconnect (QPI) architecture, replacing the venerable frontside bus design.

The TDP seems rather high, given Intel's top Core 2 processors run at 95 watts and the top Xeons run at 120 watts. Part of the reason is that the on-die memory controller will add a good 15 to 20 watts to the processor, since it is no longer a separate chip. But also, reasons the analysts, that's the top end of the power rating.

"For all I know, that could be a maximum rating just so you could design a heat sink for worst case scenario," said Tony Massimini, chief of technology for Semico Research. "It was probably something on a spec sheet, but right now I would guess those spec sheets are a boiler plate and will be the maxed on the top end. I would think when these [processors] are announced they will put out more precise spec sheets."

Nathan Brookwood, research fellow with Insight 64, was of the same mind. "This is the max they can put into a desktop, air cooled platform. Clearly over time that number will get better," he told InternetNews.com.

Intel declined to comment on the DigiTimes story, saying only that it was on track to release Nehalem in the fourth quarter of this year.

Nehalem is a major new architecture from Intel, one that finally puts the venerable frontside bus and external memory controller out to pasture for good. It adds a memory controller to the CPU and a high-speed interconnect, meaning the architecture will be very similar to AMD's Athlon, Opteron and Phenom designs.

Nehalem will scale from two to eight cores and features the return of multithreading, allowing each core to run two threads at once. Its design will be used in commercial desktops, laptops and server processors, so it will cover the range of Intel designs.

The clock speeds are pretty much in line with what's available today, but the on-chip memory controller and Quickpath will make it much faster. "While it's going at roughly the same clock rates as today, because they have much more memory bandwidth and much less memory latency, they should get some substantial improvements in performance," said Brookwood.

The specs DigiTimes cited also listed support for up to four PCI Express 8x slots and support AMD's Quad CrossFireX technology for running multiple GPU cards. However, there was no word on whether Intel will or wants to license nVidia's SLI technology, which does the same thing.

It seemed odd that Intel would work with the company that's suing it for antitrust over the company that's just kicking at its ankles. Massimini thinks a deal will eventually be made.

"Everybody's out to make money," he said. "They can argue and sic each other's lawyers on each other but ultimately, they have to sell parts, and it's kind of a tug of war, love/hate relationship in this business. But it's in Intel's interests to show they are willing to work with companies and not shut anybody out."

He said it's just a matter of ironing out details. Brookwood said he wasn't sure why Intel was working with AMD (NYSE: AMD) but not nVidia (NASDAQ: NVDA).

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