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Data Centers Give Intel Static over Electric Bills

Along with the unveiling of new platforms will come much discussion of performance per watt, a processor "miles per gallon" measurement designed to illustrate how much work a chip can accomplish for each unit of energy it consumes.

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The focus on performance per watt will become increasingly important as corporate data centers continue to add servers—dual-core-processor servers, for example, add an extra helping of performance—but struggle to power them and keep them cool.

That means having the ability to size up the total power consumption of a rack full of servers would assist IT managers in choosing new machines, Rosen said.

"What will [power consumption] be if I'm running Intel? What will it be if I'm running AMD? What will it be if I'm running [IBM Power5]? That would really be interesting as we move down the line where we really have to worry more about power," Rosen said.

"If you can say, 'For my application, any of these will work,' then with all other things being equal, why would I not want to go with the lowest-power system? Because that pays me back over the life of the system."

Winning over users such as Jensen and Rosen is becoming a top priority for the chip makers, which intend to roll out major server chip platforms this year that limit power consumption, while still incorporating higher-performing multicore processors, along with enhancements such as built-in virtualization and faster memory.

Businesses will be able to use the chips to deploy higher-performance servers that can be packed more tightly into space-constrained data centers without necessarily prompting upgrades in electrical service or cooling, chip makers said.

Intel's power plan

Bent on making technology managers stick with its chips, Intel will detail its new server platform, code-named Bensley, at IDF. The company also is expected to announce that it has begun shipping its dual-core "Dempsey" Xeon DP chips.

Servers based on the platform, which is designed to bump performance by doubling up on buses that carry data to processors and memory, as well as by incorporating FB-DIMMs (fully buffered dual in-line memory modules), should arrive in May.

Bensley also includes Intel's Virtualization Technology and I/O Acceleration Technology, which make it easier to divide a machine to run different software and to increase network throughput, respectively. The add-ons are designed to increase server utilization, offering another way to cut power by allowing a company to use fewer servers and to run them harder.

[Read more here about planned server upgrades from Intel and AMD.](#)

Bensley will work with only the 65-nanometer Dempsey chip at first. Intel officials said the chip offers a better mix of performance per watt, by bumping performance and coming in a lower-power variant. FB-DIMMs, however, will use more electricity.

However, when combined with "Woodcrest," a more energy-efficient dual-core chip due in the second half of 2006, Bensley will offer much greater performance per watt, allowing businesses to save energy by adopting the platform,

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said Kirk Skaugen, general manager of Intel's Server Platforms Group, in Hillsboro, Ore.

"Woodcrest in the Bensley platform ... will have a 3X improvement in performance per watt versus the volume platform we were shipping in 2005," Skaugen said, referring to Intel's single-core "Irwindale" Xeon chip.

Next Page: AMD fires back.

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