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Study Exposes Server Energy Costs

Study shows server farms sucked up 1.2 percent of total U.S. electricity consumption in 2005.

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By Adena DeMonte

Total power used by servers, cooling and auxiliary infrastructure amounted to 1.2 percent of the total U.S. electricity consumption in 2005, according to a Lawrence Berkeley Lab study released Thursday.

Commissioned by chip manufacturer AMD to promote its dual-core Opteron processors, the study was led by Lawrence Berkeley Lab staff scientist and Stanford University Consulting Professor Jonathan Koomey.

It set out to quantify the energy costs associated with servers—a feat that has proven difficult over the years due to a lack of measurement tools for the energy usage of servers and associated infrastructure.

The last study on the subject was conducted in 2002 by IDC.

The Lawrence Berkeley Lab study reported that the total electricity bill for server operation and associated infrastructure in 2005 is estimated to be \$2.7 billion in the U.S. and \$7.3 billion globally.

Mr. Koomey said that the most surprising finding from the survey was that aggregate electricity use for servers doubled from 2000 to 2005, both in the U.S. and worldwide.

He hopes the findings of the study will encourage the government to put out Energy Star specifications for energy-efficient servers.

The Environmental Protection Agency (EPA) and the U.S. Energy Department along with Lawrence Berkeley Lab are preparing a complete report for congress that is due in June 2007.

Government specification of energy efficient servers could fuel industry growth for virtualization technology, efficient server redesign, and energy-efficient cooling technology, said John Fruehe, worldwide business development manager for AMD Opteron.

While saving the environment might be the spark to the energy efficient trend, in the end saving energy is good business for AMD.

"We need to be much more responsible about the products that we're designing to make sure we can allow companies to grow," said Mr. Fruehe. "The last thing you want to do is put them in a situation where they can no longer afford to grow their business because you've artificially limited them with the amount of power they consume."

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