



Digging Multi-Core Performance

Case Study

Intel® Xeon® processor
5400 series

Online social collaboration



“Rolling out our newest features takes as much CPU capacity as we can get, and the new Intel® Xeon® processors help make that possible.”

Scott Baker,
Vice President, Operations,
Digg

Digg chooses new servers with multi-core Intel® Xeon® processors to support business growth and maintain competitiveness in a fast-moving industry

Digg is well known as one of the leading innovators in the evolution of the Web. The Digg site enables people to discover and share content from anywhere on the Internet by submitting links and stories and voting on them. The success of the Digg site has helped spur the growth of social networking worldwide.

To stay competitive in social networking, which has overtaken e-mail as the most popular online activity,¹ Digg constantly introduces new features. However, those enhancements create processing challenges on the back end. “One of our most computationally intensive services is the ‘friend’ badge,” says Scott Baker, vice president of operations at Digg. “When you log on and see a green badge next to certain stories, it means they are items that your friends liked. It’s a popular service, but delivering it takes a huge amount of processing capacity.”

The Digg team decided to replace its older servers with more powerful systems that could support business growth and new service rollouts. With its IT infrastructure co-located at an outside facility, the company needed to scale capacity while containing co-location costs. “The co-lo facility charges us by the rack,” says Baker. “Since we can only get so many servers in a rack, we needed systems that could do more work in the same space.”

Digg doubles performance with Intel® Xeon® processors

The Digg IT team chose Penguin Relion* servers with the Intel® Xeon® processor 5400 series to increase processing density. “We replaced our aging dual-core systems with quad-core Intel Xeon processors and got a little over twice the performance,” says Baker. “If we can have only 20 servers in a cabinet, now we’re getting the work of about 40 servers in that space compared to our previous equipment.”

Measures of Success

- Digg needed to boost its IT capacity to support business growth and maintain its competitiveness, while also containing co-location costs
- To support these objectives, Digg needed to refresh aging systems with higher-performing, more energy-efficient servers



Digg cut the number of servers needed to run its recommendation engine from 22 to 10 by going to multi-core Intel® processors.

Twice the cores but only slightly more energy use

The energy efficiency of the Intel Xeon processors has enabled Digg to double its server performance without doubling energy use. "We now have twice as many processing cores per rack, but only use slightly more power," says Baker. "Previously, we might have used 20 amps of a 30-amp circuit with dual-core processors. Now we're using about 22 amps with the quad-core Intel Xeon processors. That means we don't have to pay for a whole new rack and power circuit."

Power to roll out exciting new features

The increased performance provided by the new Intel processor-based servers enables the Digg team to introduce more computationally intensive service enhancements on its site. "Our new recommendation engine uses a very demanding algorithm, and we originally estimated we would need 22 servers to handle it," says Baker. "But we're running it on just 10 of the new Intel processor-based servers. Rolling out our newest features takes as much CPU capacity as we can get, and the new Intel Xeon processors help make that possible."

Return on Investment

- Replacing aging systems with new Penguin Relion* servers based on multi-core Intel® Xeon® processors enables Digg to perform twice as much work in the same physical space, while using only slightly more energy
- With more powerful, multi-core Intel Xeon processors, the Digg team needs fewer physical servers to roll out computationally intensive new services on the site



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¹The Nielsen Company, March 2009.

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