



Case Study

Intel® Xeon® Processor
Lampwork Etc.

Fast-Growing Web Business Boosts Performance, Adds Growing Room, with Quad-Core Intel® Xeon® Processor-Based Server

“We’re extremely excited about the growth possibilities that our new server gives us.”

Jason Harper
Lampwork Etc.

Challenge

Site Struggles to Keep Up with Visitors and Advertisers

Lampwork Etc. is a Web-based business for people who make bead jewelry. The site ran for two years on a PC engine, but response times began bogging down as traffic increased. To speed up responsiveness, expand traffic, and add e-commerce capabilities, Lampwork Etc. upgraded to a server based on the Quad-Core Intel® Xeon® processor 3200 Series. Database queries and backup speeds have tripled, giving Lampwork Etc. plenty of performance and growing room.

In 2005, Jason and Corri Harper decided to use the Internet to further Corri’s passion – bead jewelry making. They launched Lampwork Etc. (www.lampworketc.com) from a home PC-based server – an Intel® Pentium® 4 processor-based system – and set up the site initially as an online forum for people creating glass beads and related items. Over time, the number of discussion threads, tutorials, and online classes grew, but the desktop computer Web server couldn’t keep up with the load and impeded the site’s conversational style.

Worse, the extra-seconds response time was endangering the business’s revenue model. Explains Jason Harper, Owner and Co-founder of Lampwork Etc., “The site is funded by Google Adwords and monthly banner ads, and we’re paid by the number of impressions. We’re trying to build our current base of advertisers. If people have to wait six seconds for a page to load, they’ll get impatient and leave. To maximize revenue, we need to be able to provide very fast response times to more and more users.”





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New advertisers approached Lampwork Etc. about running their ads, but the site was at maximum revenue capacity with the already-struggling PC handling Web serving. “On one side, advertisers were begging us to run their ads. On the other, customers were asking us to offer e-commerce capabilities, so they could sell their products on our site,” Harper says. “We knew that we’d hit the wall with our desktop-based server; it couldn’t bear the extra load. Our computer was suddenly a barrier to our growth, rather than a business enabler.”

Quad-Core Intel® Xeon® processor 3200 Series

The Quad-Core Intel Xeon processor 3200 Series is designed specifically for entry-level servers and is ideal for small businesses looking for ways to grow their business infrastructure more efficiently. Based on the new Intel® Core™ microarchitecture, the Quad-Core Intel Xeon processor 3200 Series delivers industry-leading, energy-efficient performance.

Solution: Quad-Core Processor Provides Plenty of Power

Harper knew that it was time for Lampwork Etc. to move up to a real server. He also knew enough about computers to know that multi-core processors were the hot new thing, offering the best performance, longevity, and return on investment.

To match their price to performance and usage requirements, Lampwork Etc. chose a capable entry-level server based on the new Quad-Core Intel Xeon processor 3200 Series. Inside this single Intel Xeon processor are four processing cores, able to blitz through multiple instructions at once and provide outstanding performance with very low power consumption. The Quad-Core Intel Xeon processor 3200 Series is perfect for multi-threaded applications such as database queries and running multiple applications and virtual machines simultaneously.

Key business software for Lampwork Etc. includes the CentOS 5* (Linux*) operating system, the open source MySQL database program, and the Apache HTTP server software. The company has also been a pioneer in the use of virtualization (using VMware Server software) to run multiple operating systems and applications on a single computer. Harper partitioned his new server into several virtual machines: one for the Web server, another for an e-mail server, and a third for testing new applications.

“With the Quad-Core server, we have more headroom for more virtual machines,” Harper says. “We can now create a VM for e-commerce, which will allow for our planned business growth, and there will still be opportunity for others as new needs arise. This increased flexibility lets us focus on what we do best - support our visitors.”



Benefits: Doing More with One Server

3X and Beyond Performance Boost

Lampwork Etc. has seen an almost 3X reduction in page latencies under normal load conditions. The multi-threading power of the Quad-Core processor is providing even greater benefits while daily backups are run. "I can't even tell when the server is doing a backup anymore. Before, the site was basically dead for several minutes during back-ups," Harper says. A recent site poll indicated that two-thirds of the users noticed the improvement in server response time. Harper goes on to mention, "This direct user feedback tells me that we had a problem previously, and it is now resolved with the new Intel Xeon processor-based server."

Room for Growth

Lampwork Etc. not only got an immediate turbo-charge for current site activities but plenty of expansion room for new initiatives. "We're extremely excited about the growth possibilities that our new server gives us," Harper says. "We can add an e-commerce capability, new features and functionality, and give our community more ways








to personalize their experience, without fear that we'll dilute their Lampwork Etc. experience with poor response times."

Outstanding Reliability

The new Intel Xeon processor-based server is hardware RAID 5-capable and supports error correcting memory (ECC) and additional memory capacity which provides big-company levels of reliability for Lampwork Etc. "Downtime is not an option for a Web-based business," Harper says. "If our site is down, our business is closed. Having additional hardware-based reliability features gives us a greater level of assurance that our site is up and running around the clock."

Huge Capabilities, Low Cost

The Intel Xeon processor 3200 Series-based server is tailor-made for small businesses like Lampwork Etc. It provides outstanding performance and reliability with a small-business price. "This server gives us a lot of bang for the buck," Harper says. "We feel like we're in the big leagues now, while still maintaining a small-business budget."

Task	Performance Comparison
Username Change System Propagation	<p>Old Server  157s</p> <p>New Server  3s</p>
Forums page response time (30 users online)	<p>Old Server  4.2s</p> <p>New Server  1.4s</p>
Homepage response time during backup	<p>Old Server Site unresponsive</p> <p>New Server  57ms</p>
Database back-up time (30 users online)	<p>Old Server  259s</p> <p>New Server  15s</p>

Lampworketc.com real-world performance testing - Incredible multi-tasking results experienced.

Old Server		New Server	
Processor	Intel® Pentium® 4 processor 520 ^Δ	Processor	Quad-Core Intel® Xeon® processor X3220 ^Δ
Motherboard	Intel® D915GAGLK desktop board	Motherboard	Intel® S3000AHLX server board
RAM	2 GB DDR400	RAM	8 GB DDR2 667 ECC
Hard Drive	3x 200 GB SATA	Hard Drive	4x 500 GB SATA
RAID	Software RAID 5 (Linux* mdraid)	RAID	3ware 9650SE-4LPML* RAID 5
OS	Fedora Core 4* (Linux*)	OS	CentOS 5* (Linux*)

Lampworketc.com server configurations.

To find out more, visit

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^ΔIntel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See www.intel.com/products/processor_number for details. Copyright © 2007 Intel Corporation. All rights reserved.

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