



## **Friendster Builds Online Community Business Entirely on The AMD Opteron™ Processor and Open Source Platform; Ports All Business Functions to 64-bits**

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Dave Kochbeck, Director of Engineering and Technology

### **• Challenge:**

- Due to the nature of their business, Friendster needs to store and serve vast amounts of user information in a highly available web application.
- Although performance requirements are high, capital expenditure is tightly controlled because the service is free to end-users.
- Friendster sought an x86-based solution built on open-source software.

### **• Solution:**

- Friendster chose AMD Opteron™ processor-based systems because the AMD64 technology offered superior performance and a secure, scalable upgrade path.
- The combination of SUSE LINUX Enterprise Server 9 from Novell and the AMD Opteron processor provided Friendster with the ability to access 8-gigs of memory and context switch ten times faster.

### **• Impact:**

- Friendster has experienced a threefold overall performance increase with AMD64 technology, and the company has eliminated previous scalability issues.

### **Organizational Profile**

Friendster ([www.friendster.com](http://www.friendster.com)) is a leading social networking site on the Internet,



with more than 19 million members worldwide. Friendster allows users to communicate with friends, share information, and connect with new and old friends. Friendster is a privately held corporation headquartered in Mountain View, California and is backed by Kleiner Perkins, Benchmark Capital, Battery Ventures and individual investors.

### **Challenge**

Building the premier networking community on the Internet requires solid planning and foresight. The core of Friendster's free-to-use service relies on storing and serving vast amounts of user information in a highly available web application. Because Friendster does not charge its users for the service, maintaining a favorable cost/performance ratio when it comes to all aspects of the company, especially IT investments, is critical. According to Friendster's Director of Engineering and Technology, Dave Kochbeck, the company's business plan does not support the traditional capital expenditures of traditional enterprise systems.

"We could easily have spent ten times more to use a traditional, proprietary 'enterprise' solution. The only cost-effective solution was to build our system using the x86 architecture and open source technology. This did, however, present us early on with performance challenges."

Friendster initially deployed servers based on a competitor's 32-bit processors. "We bought approximately 300 servers powered by an alternative 32-bit processor, but they didn't give us the speed we needed. It made scaling our backend MySQL database and proprietary social networking code impossible. It became clear that Friendster needed to invest in 64-bit technology," said Kochbeck.

### **Solution**

After evaluating x86 platform system possibilities, Friendster invested in 260 AMD Opteron™ processor-powered 2P servers, each with 2 AMD Opteron Processor Model 240 CPUs. "The AMD Opteron processor with Direct Connect Architecture was the obvious choice for us. It offered not only the best performance but also the easiest upgrade path from our earlier platform," said Kochbeck.



Friendster measured threefold performance increases immediately after its system provider, Open Source Storage, installed the servers and ported the company's SUSE LINUX software to SUSE LINUX Enterprise Server 8 that supports 64-bit architectures. This performance increase was realized using less AMD processor-based servers than the number of servers based on a competitor's processor that Friendster had been using.

According to Kochbeck, "Today, it's impossible to say where we would be without the AMD Opteron processor running SUSE LINUX Enterprise Server. I'm not sure we could have scaled to our current size without the ability to address 8-gigs of memory, the performance gains we saw from AMD's contributions to the open source GCC compiler, and the interoperability with the latest peripherals such as SAN host bus adaptors optimized for use with the AMD Opteron processor."

Friendster was particularly impressed with AMD's commitment to open source. "AMD64 technology is faster and more capable than competing solutions, but we really get extra mileage from the huge investment AMD has made into open source development tools and open source interoperability," explained Kochbeck.

### **Impact**

Friendster's core is now running a 100 percent AMD Opteron processor-powered system because the company saw a direct performance benefit from using AMD64-powered servers and recompiling its applications to use 64-bits. "The AMD Opteron processor has helped ensure a positive financial future for Friendster. Every dollar we spend today goes into providing our users an optimal experience rather than continuing to pay high enterprise licensing costs."

With the additional performance and memory utilization, Friendster can now cache frequently accessed data in memory instead of having to access the origin database for each query. "AMD's Direct Connect Architecture provides a huge performance advantage over the competing architecture. This allows us to make use of all the extra available memory and optimizes our system performance from front-end to back-end," said Kochbeck.



"Caching and load balancing our database translated into significant performance gains and eliminated scalability issues that used to be inherent to the x86 architecture. The AMD Opteron processor gave us the power to do those things."

**Quote**

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