Case Study
Intel® Xeon® Processor 5500 Series
Enterprise Server
Performance: Data Intensive Computing

Optimizing Portal Performance

SK Communications turns to Intel® Xeon® processor 5500 series to upgrade its data center for extra performance and efficiency

SK Communications Ltd. is one of of South Korea's leading Internet services provider and is expanding is operations to other countries.

CHALLENGES

- **Strengthen existing Internet services.** Increase server performance with better response times on portal services.
- **Reduce data center costs.** Reduce operational cost of running data center without affecting performance of services.

SOLUTIONS

- **Data center consolidation.** Consolidate servers on the Intel® Xeon® processor 5500 series[1] platform.
- **Improve software applications.** Utilize Intel support expertise to optimize and fine-tune server applications to take full advantage of the Intel Xeon processor.

IMPACT

- **Productivity upgrade.** Achieved over five times performance improvement compared to the previous platform.

Introduction

SK Communications (SK Comms) is a leading South Korean company that runs several Internet portals. Faced with the need to strengthen their existing Internet services and reduce data center costs, SK Comms worked with Intel to optimize their server architecture and found that improving software performance on the Intel Xeon processor 5500 series platform was key to improving performance and saving on overall cost on infrastructure.

The need to spend smart

Operating a successful online services platform is a daunting experience, with customers ready to switch providers if they perceive they are not getting good value for their money. Like many companies, SK Comms struggled through the recent economic crisis with reduced IT budgets to stay above the bottom line. SK Comms operates large-scale portal services with thousands of servers in its data center. Wanting to strengthen their existing Internet services and reduce data center costs, the company realized it needed to "spend smart" and invest wisely into technology and other area to reduce overall costs. This would enable SK Comms to remain competitive and retain its leading market position. Embarking on this strategy would also enable SK Comms to do more by increasing data center performance, efficiency and productivity.

Tune up to a high performance platform

SK Comms decided on a straightforward and simple solution—utilize a high-performance platform based on the Intel Xeon processor 5500 series and optimize their portal applications and database for maximum efficiency. This immediately provided a major performance improvement to the data center by virtue of a more powerful processor platform. SK Comms' engineers also decided to embarked on an optimization project to tune their portal applications for the new processor architecture. This was key to achieving even greater processor utilization ratios and maximizing the investment in the Intel Xeon processor platform. This was a major exercise that was difficult for SK Comms to undertake alone and required Intel expertise to make the project a success. As a result, Intel engineers worked with their SK Comms counterparts on the optimization process.

Optimizing applications for the Intel® Xeon® processor platform increased SK Comms' data center efficiency five-fold

"By using Intel's next-generation server processor, we believe the TCO savings will be significant because it will enhance software performance as well as reduce power consumption."

Hans Kim,
CIO
SK Communications

The collaboration was fruitful and provided both parties with the knowledge and skills required to fine-tune SK Comms' applications and database system on the Intel® Xeon® processor platform. SK Comms' engineers were impressed with the work collaboration. "The Intel engineers listened as we explained our program design, then reviewed the code line by line for us," explains Ji Eun Park, an SK Comms developer. "It was very impressive for us since most software engineers tend to look only at the algorithms or the overall code. It provided us with an opportunity to take a closer look at the hardware side."

An Intel optimization learning course was conducted for SK Comms engineers, utilizing Intel tools and tuning methodologies. "We used the actual applications that are used in our search engine system," says Park. "This helped us identify problems that could not be located through a simple code review process, and contributed greatly to performance enhancement."

Collaboration brings results

The collaboration process enabled SK Comms to identify precisely the output of the selected design of their programs with Intel's optimization tools, and helped the engineers locate inefficient code and correct bad programming habits.

Working on the project provided team members with useful information; SK Comms engineers learned to develop more efficient applications for the new processor platform and Intel engineers received direct feedback on processor performance in a production environment. "The optimization was a great help," says Jeong-Gon Kim, another SK Comms developer who worked on the project, "and we were able to achieve an over five times performance improvement."

The performance gains through optimization more than met SK Comms expectations, enabling the company to consolidate and use its servers more effectively. "We anticipate that this will contribute significantly towards infrastructure cost reductions for SK Communications," says SK Comms' CIO Hans Kim. "Especially, using Intel's next generation server processor, the Intel Xeon processor 5500 series, we believe the TCO savings will be significant because it will enhance software performance as well as reduce power consumption."

Find a solution that is right for your organization. Contact your Intel representative or visit the Reference Room at **www.intel.com/references.**

[1] *64-bit Intel® Xeon® processors with Intel® EM64T requires a computer system with a processor, chipset, BIOS, OS, device drivers and applications enabled for Intel EM64T. Processor will not operate (including 32-bit operation) without an Intel EM64T-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel EM64T-enabled OS, BIOS, device drivers and applications may not be available. Check with your vendor for more information. Performance will vary depending on the specific hardware and software you use. See most up to date benchmarks at http://www.intel.com/products/benchmarks/server/index.htm for detailed information.*

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