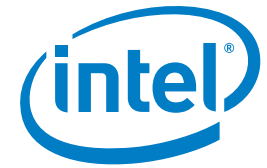


CASE STUDY

Intel® Xeon® processor 7300 series
Intel Xeon processor 5400 series
Enterprise Server
Virtualization



Massive Consolidation and Virtualization Effort Drives up to a 35 Percent Drop in IT Costs

Siemens IT Solutions and Services, Inc. saves millions with next-generation architecture and Intel® technologies



SIEMENS

“The work Intel is doing to optimize the board and chip design reduces the amount of overhead the host operating system needs for virtualization. It lets me put more of our work onto each server and ultimately create a denser footprint.”

– Michael Kollar
Chief Architect
Siemens IT Solutions and Services, Inc.

CHALLENGE

▪ **Optimize IT for Siemens Group.** Siemens IT Solutions and Services, Inc. (Siemens) has provided external customers with state-of-the-art IT for over 25 years. In 2007, it also took on the task of managing operations for all 12 of Siemens operating companies' U.S. data centers as well as a widely distributed assortment of local IT operations.

SOLUTION

▪ **Standardize, consolidate, virtualize, and automate – on Intel® technologies.** Siemens developed a business strategy of standardizing and consolidating their data centers. To support the strategy, they designed a new architecture that uses virtualization technologies from VMware and NetApp and standardizes on the energy-efficient, multi-core performance of Fujitsu Siemens Primergy* servers powered by the Intel® Xeon® processor 7300 series and 5400 series.

IMPACT

- **17:1 consolidation.** The high performance of the Intel Xeon processor helped Siemens shrink the 12 data centers down to 2 and achieve physical server consolidation ratios of 17:1. In sample environments, the reduction lowers floor space requirements by 45 percent and power and cooling needs by 30 percent.
- **IT efficiency.** The transformed infrastructure, plus end-to-end management tools and built-in lifecycle management, are expected to reduce risk, improve availability, and slash management and administrative costs by 25-35 percent.
- **Dramatic savings.** Siemens IT expects capital expenses and operations costs to drop by up to 35 percent.

It's a rare company that maintains its competitive edge while balancing 161 years of tradition. But that's Siemens' secret: a relentless focus on innovation. Siemens employs tens of thousands of researchers and filed roughly 5,000 patent applications in its most recent fiscal year. Its innovations improve everything from smart power grids to high-efficiency buildings, and many help companies reduce their environmental impact.

Siemens IT Solutions and Services is an innovator, too. It's in the midst of a two-year shared services initiative that's using

new approaches – and Intel's latest innovations in server processors – to transform the company's service delivery architecture and provide a highly virtualized, agile, and cost-efficient IT environment.

The new environment is dramatically cutting infrastructure costs, reducing environmental impact, and improving operational flexibility and responsiveness. The approach is proving so successful that Siemens plans to take it public, offering it to customers as the basis for managed virtualization and cloud computing services.



End-to-End Virtualization and Consolidation

Siemens envisioned a “future mode of operations” and architected a path to support it by standardizing, consolidating, and virtualizing its server and storage infrastructure across North America. The organization also plans to use comprehensive, automated tools to manage its environment and has designed it to easily incorporate continued IT advances. The plan also calls on application streaming to powerful PCs to combine end-user flexibility and performance with enterprise flexibility and manageability.

Technology choices followed detailed planning and proof-of-concept testing, and Siemens chose Fujitsu Siemens blade and rack servers based on the Intel Xeon processor 7300 series and 5400 series to support virtualization and replace over-aging single-core and dual-core servers. The degree of consolidation they’re achieving by refreshing their aging servers and virtualizing the environment has enabled them to free up or close down 10 data centers, consolidating into existing centers in the Silicon Valley and Great Lakes area.

Innovation from Intel in Energy and Virtualization

In addition to the processors’ high performance, Michael Kollar, Siemens’ chief architect, reports that Intel’s virtualization enhancements are one of several key reasons the team chose Intel technologies. “The work Intel is doing to optimize the board and chip design reduces the amount of overhead that the host operating system needs for virtualization,” says Kollar. “It lets me put more of our work onto each server and ultimately create a denser footprint.”

Energy savings are another key reason. “Intel is doing a phenomenal job of managing power consumption and energy use,” he says. “In the new products, having energy management at the board level and being able to turn cores on and off adds to the value of virtualization and is very important as we look at how we put servers and infrastructure out on the floor. It will also have a huge green impact, not just for the servers but for all the equipment you need to support them.”

Going forward, Kollar adds, “Intel’s roadmap of incremental features and incremental performance lines right up with where we want to go.” He says the higher performance and enhanced virtualization capabilities of the Intel Xeon processor 5500 series will be valuable as Siemens continues its virtualization, replaces its internal RISC-based platforms, and begins to offer managed services based on the new architecture.

SPOTLIGHT ON SIEMENS IT SOLUTIONS AND SERVICES

Siemens IT Solutions and Services is a leading global provider of comprehensive IT services and solutions, including consulting, systems integration, IT infrastructure management and outsourcing, and industry-specific IT solutions. With a presence in 44 countries, Siemens IT Solutions and Services employs 41,000 people and generates revenues of EUR 5.3 billion annually. It is part of Munich-based Siemens Group, one of the world’s largest electronics and engineering companies.

“If you look at what we’ve accomplished in terms of server compute reduction, floor space reduction and so forth, the Intel Xeon processor 5500 series will drive even greater density in our compute fabric,” he says. “Once we get the Intel Xeon processor 5500 series in here, our consolidation ratios will go up, and we’ll see an added power and cooling benefit and even better utilization of floor space. Administrative costs will come down further due to the on-board virtualization capabilities of the Intel Xeon processor 5500 series.”

And, in keeping with Siemens’ commitment to innovation, the new architecture is designed to readily incorporate new advances – to keep Siemens and its customers on the leading edge.

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



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