

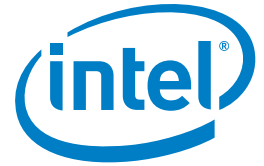
CASE STUDY

Intel® Xeon® processor 5600 series

Manufacturing

Energy Efficiency, Environment, and Performance

Virtualization



Moving to a Platform for Growth

Standardizing on Intel® Xeon® processors helps Mindspeed Technologies consolidate servers, reduce costs, and support continued business expansion



MINDSPEED®

“By using the Intel® Xeon® processor 5600 series, we have almost doubled the number of VMs we can run on each server without doubling our costs.”

– Juan M. Pacheco Nájjar,
IT Operations Manager,
Mindspeed Technologies

Mindspeed Technologies, Inc.—which designs, develops, and sells semiconductors for telecom networking products—wanted to consolidate its physical IT infrastructure used to run mission-critical business applications and reduce operating expenses, while also supporting business growth. After creating a virtualized server environment with VMware software, the Mindspeed IT group decided to migrate applications from AMD processor-based Sun Microsystems servers to Dell servers based on the Intel® Xeon® processor 5600 series. The move helped increase application performance, consolidate application servers, and reduce operating costs while providing the scalability for continued business growth.

CHALLENGES

- **Support business expansion.** Increase IT scalability to support the growth of the company’s solution portfolio and expansion into new geographic regions without increasing the IT infrastructure footprint.
- **Control costs.** Reduce IT operational costs and decrease the software licensing costs for the virtualized environment.

SOLUTION

- **Migrate to Dell servers with Intel® Xeon® processors.** The IT group migrated from AMD processor-based Sun servers to Dell PowerEdge R610* servers equipped with the Intel Xeon processor 5600 series and Intel® Ethernet 10 Gigabit Server Adapters.

IMPACT

- **Robust performance.** Moving to servers with Intel Xeon processors helped increase application performance while leaving headroom for high-availability capabilities.
- **Impressive cost savings.** The dense, energy-efficient infrastructure helps to control energy costs and reduce software licensing costs by more than 50 percent.
- **Ready for growth.** Mindspeed increased the density of virtual machines by more than 70 percent, allowing the IT group to provide new services and support new corporate offices while controlling the infrastructure footprint.

With demand for the company’s products soaring, the Mindspeed Technologies IT group needed ways to support continued business growth while controlling operating expenses. “We are expanding our solution portfolio and adding new offices in North America and Asia,” says Juan M. Pacheco Nájjar, IT operations manager at Mindspeed. “Requests for new IT services are coming in rapidly.”

Several years ago, the company increased IT flexibility by virtualizing its AMD processor-based Sun servers, which ran a variety of business applications, from Lotus Notes* to Oracle Hyperion* performance management software. As those servers

reached end-of-life, the IT group decided to move to a new processing platform that could improve performance and reduce licensing costs. “Our VMware licenses are based on the number of processors we use,” explains Pacheco Nájjar. “We wanted a powerful, dense processor architecture that would let us minimize the processor count while increasing the core count so we could decrease licensing costs.”

A more dense architecture could also help control operational expenses. “Those large, previous servers were power-hungry,” says Pacheco Nájjar. “We required more compact systems to conserve electricity, cooling, and real estate as we add IT services.”



Mindspeed adopts Intel® Xeon® processors as the new standard

Migrating to Intel Xeon Processors

The IT group decided to standardize on Dell PowerEdge R610* servers with the Intel Xeon processor 5600 series. "These Dell servers with Intel Xeon processors deliver the horsepower we need in a two-processor configuration," says Pacheco Nájár. "We saw a clear opportunity to reduce our licensing costs and control power, cooling, and real estate requirements."

Past experience with the Intel platform gave the IT group the confidence to migrate. "We've used Intel processors for product engineering and other parts of our infrastructure for years, and we have seen how Intel technology continues to progress and improve," says Pacheco Nájár. "By moving to Intel processors, we gain a strong roadmap for the future."

"We have also standardized on Intel Ethernet 10 Gigabit server adapters," says Pacheco Nájár. "We tested several other adapters, but the Intel adapters were the clear winners due to the easy operation and VMware compatibility. We have them in all our new virtualized environments, and they are working well for us."

Boosting Performance with Headroom to Spare

The Intel Xeon processors are helping to provide better application performance for Mindspeed than the previous environment, while leaving headroom. "The performance of the Intel Xeon processor 5600 series has clearly surpassed what we achieved with other processing architectures," says Pacheco Nájár. "We have also reduced processor utilization significantly. As a result, we have the headroom to support future growth and to implement high-availability capabilities."

Increasing Virtual Machine Density by Nearly 70 Percent

The raw compute performance and memory throughput of the Intel processor platform enables the IT group to run significantly more virtual machines (VMs) on each server than before. "In the past, we ran 12 VMs on each physical server—now we can run 20," says Pacheco Nájár. "By using the Intel Xeon processor 5600 series, we have almost doubled the number of VMs we can run on each server without doubling our costs."

Enhancing Energy Efficiency and Reducing Licensing Costs by More than 50 Percent

The move from large legacy servers to more compact, energy-efficient systems helped substantially reduce energy costs. "Each Intel processor-based Dell server uses 60 percent less power and generates less heat and noise than the previous AMD processor-based Sun server," says Pacheco Nájár. "We've also reduced the rack space required from 16U to just 6U. Overall, we are reducing operational costs and conserving resources to support future expansion."

The dense, multi-core Intel processing architecture also is helping Mindspeed minimize software licensing costs. "In our primary data center, we have gone from using 26 processors to just 12," says Pacheco Nájár. "Moving to the Intel platform allowed us to reduce our VMware licensing costs by more than 50 percent while gaining the performance to optimize our work environment. These savings are helping us to expand and refresh our infrastructure."

Supporting Corporate Expansion Rapidly, Efficiently, and Cost-Effectively

Intel processor-based Dell servers have become the new standard at Mindspeed as the IT group rolls out new offices. The

SPOTLIGHT ON MINDSPEED TECHNOLOGIES, INC.

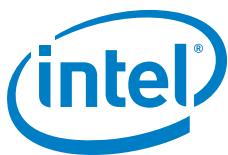
Mindspeed Technologies (NASDAQ: MSPD) is a leading provider of network infrastructure semiconductor solutions to the communications industry. The company's low-power system-on-chip (SoC) products are helping to drive video, voice, and data applications in worldwide fiber-optic networks and enable advanced processing for 3G and long-term evolution (LTE) mobile networks. The company's high-performance analog products are used in a variety of optical, enterprise, industrial, and video transport systems. Mindspeed's products are sold to original equipment manufacturers (OEMs) around the globe.

company has deployed three Dell PowerEdge R610 servers and one PowerEdge R710, all with the Intel Xeon processor 5600 series. "Each time we open a new office, we need to provide new IT services," says Pacheco Nájár. "By adopting Dell servers with Intel Xeon processors as the new platform standard, we can quickly deploy a single physical server in each office location and provide all of the required applications in a very compact footprint. We are helping to improve business agility and are supporting growth much more efficiently and cost-effectively than before. We have plans to continue our expansion, as business requirements are always growing rapidly."

Planning Future Migrations to the Intel Platform

The Mindspeed IT group is now planning to move additional workloads to the Intel processor-based environment, including applications currently running on RISC-based systems. "Moving everything to a single, standard platform will help simplify IT administration and vendor management," says Pacheco Nájár. "We know we can count on Intel Xeon processors to run mission-critical applications and deliver the price/performance we need to support continued growth."

Find a solution that is right for your organization. Contact your Intel representative, visit [Intel's Business Success Stories for IT Managers](#), or explore the [Intel.com IT Center](#).



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