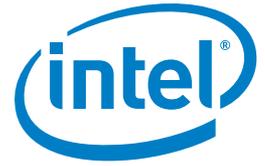


CASE STUDY

Intel® Xeon® processors 5600 and 7500 series
Healthcare
Mission-Critical Computing



Intel® Server Technologies Provide Healthy Outcomes for Cerner and Its Clients

RISC migration to Intel® Xeon® processors delivers uptime, performance, and savings for mission-critical healthcare applications

Cerner is at the forefront of healthcare's transformation from a paper-based endeavor focused on treating illness to a technology-enabled field focused on health. Cerner's vision—and its ability to deliver industry-leading software and services—led the company to record levels of bookings and revenue in Q4 2011.¹ Cerner is using servers based on the Intel® Xeon® processors 5600 and 7500 series to support its rapid growth and help its clients modernize the way they deliver care. The company's IT leaders say Intel technologies let them offer their managed service clients the performance, reliability, and availability their critical healthcare applications require while avoiding the high cost and limited flexibility of legacy architectures.



"As we've migrated to the Intel® platform and Linux, the performance and reliability have been equal to or better than our RISC platforms, and we can offer equivalent SLAs. We can do more computing with fewer servers and fewer dollars, which helps us remain cost-competitive and drive value for our clients."

— Bill Graff,
Senior Vice President,
Cerner Technology Services, Cerner Corporation

CHALLENGE

- **Affordable availability.** Cerner is committed to providing its clients with robust, highly reliable performance that makes the most of their IT budgets.

SOLUTIONS

- **Intel® Xeon® processors 5600 and 7500 series.** Cerner deploys blades based on the Intel Xeon processor L5640 as its workhorse, with servers powered by the Intel Xeon processor 7500 series for massive databases and larger implementations.
- **Virtualization and clustering.** Cerner runs Red Hat Enterprise Linux* and increases availability with technologies such as VMware ESX*, Red Hat Cluster Suite*, and Oracle Real Application Clusters (RAC)*, along with capabilities built into its software solutions.

IMPACT

- **Outstanding availability.** Cerner offers service-level agreements (SLAs) of 99.9 percent availability for clients on its Intel Xeon processor 5600 and 7500 series-based solutions.
- **More computing, lower costs, less energy.** Cerner says the new solutions deliver equivalent or higher performance at lower cost and with reduced energy consumption. Cerner remains cost-competitive and lessens its environmental impact.

Mission-Critical Reliability

Cerner built its managed services reputation by providing stable platforms that deliver high SLAs for mission-critical healthcare solutions. For many years, those platforms used proprietary operating systems and legacy architectures. Then, key software vendors started pointing out the reliability, performance, and cost advantages of platforms based on Intel server technologies.

"We had Oracle telling us that their software performs very well on the Intel processors, and they have so many more footprints in the Intel environment that any problems are reported and fixed quickly," recalls Kent Scheuler, senior vice president of managed services at Cerner. "As we moved forward, we found that to be the case. The stability has actually turned out to be much better in the Intel environment."



Cerner has chosen Intel® Xeon® processors as its foundation for cloud-based services

Value for Clients and the Bottom Line

Today, Cerner runs key components of its operations and hosts many of its managed service clients on Intel Xeon processor 5600 and 7500 series-based servers. Cerner's IT leaders say these platforms benefit both Cerner and its clients.

"As we've migrated to the Intel platform and Linux, the performance and reliability have been equal or better than our RISC platforms, and we can offer equivalent SLAs," says Bill Graff, senior vice president of IT at Cerner. "We can do more computing with fewer servers and fewer dollars, which helps us remain cost-competitive and drive value for our clients."

The combination of higher performance and lower energy consumption helps Cerner create a greener data center that saves on space and costs. "As we move in the new platforms, we're able to reclaim space and reduce energy consumption in our data center rooms," Graff explains. "It makes our chief financial officer happy when we can delay the construction of the next data center room or data center complex."

Cerner says the company and its clients also benefit from Intel's product roadmap, which focuses on continued advances in energy-efficient performance along with hardware-based capabilities to enhance reliability, availability, security, and privacy. "Many of the legacy platforms had proprietary chips,

and those companies weren't making the improvements like Intel is," comments Tony Linville, vice president of infrastructure services at Cerner. "We are encouraged by the reliability, availability, and serviceability (RAS) features Intel is coming out with, and are very interested to see what embedded security capabilities will result from Intel's acquisition of McAfee and the support of the software ecosystem."

The Intel Xeon processors 5600 and 7500 series provide hardware-assisted capabilities such as Intel® Virtualization Technology (Intel® VT) to enhance performance and flexibility in virtualized environments. The Intel Xeon processor 5600 series offers Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) to accelerate encryption performance and improve security. The Intel Xeon processor 7500 series provides more than 30 built-in RAS features designed to protect data, increase availability, and minimize downtime.

Easier-Than-Expected Migration

Cerner began its migration from RISC platforms only after careful testing. Cerner's IT lab researched and evaluated the performance, availability, and scalability of platforms based on the Intel Xeon processor. Cerner then ran several proof-of-concept projects before moving on to small-scale and then full-scale production deployments.

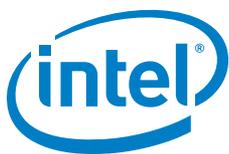
SPOTLIGHT ON CERNER CORPORATION

Cerner is contributing to the systemic change of health and care delivery. For more than 30 years Cerner has been executing its vision to make healthcare safer and more efficient. Cerner started with the foundation of digitizing paper processes and now offers a comprehensive array of information software, professional services, medical device integration, remote hosting, and employer health and wellness services. Cerner systems are used by everyone from individual consumers to single-doctor practices, hospitals, employers, and entire countries. Taking what it has learned over more than three decades, Cerner is building on the knowledge that is in the system to support evidence-based clinical decisions, prevent medical errors, and empower patients in their care.

"We did our homework and undertook a phased migration," says Tim Erdel, director of technologies for CernerWorksSM. "The overall process went more smoothly than we anticipated, and we continue to see positive results as we increase the scale."

Cerner has also chosen Intel Xeon processor-based platforms as the foundation for its software-as-a-service (SaaS) and infrastructure-as-a-service (IaaS) cloud offerings. "The cloud is another way for our clients to take advantage of costing models and scaling capabilities that they may not have had the opportunity to in years past," Graff says. "The Intel processors are definitely our foundation for the cloud. They're the only choice that makes financial sense at this time."

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



¹http://www.cerner.com/about_cerner/newsroom/cerner_reports_fourth_quarter_and_full_year_2011_results

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Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, and virtual machine monitor (VMM). Functionality, performance, or other benefits will vary depending on hardware and software configurations. Software applications may not be compatible with all operating systems. Consult your system manufacturer. For more information, visit <http://www.intel.com/go/virtualization>.

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