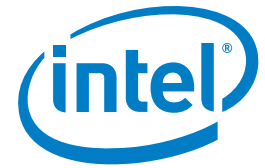


CASE STUDY

Intel® Xeon® processor 7400 series
Intel® Core™2 processor with vPro™ technology
Enterprise Server, Enterprise Client
Energy: Efficiency, Environment, and Performance



Running the State

Indiana reduces carbon footprint and saves millions for taxpayers with end-to-end Intel® technologies

Indiana's Office of Technology (IOT) was established in 2005 and got off to a great start. Centralizing and consolidating the state's IT infrastructure onto Intel® Xeon® processor-based servers, it achieved annual savings of U.S. dollar (USD) 13.9 million and provided a greener, more robust foundation for state services. Now, IOT is virtualizing its environment with the Intel Xeon processor 7400 series and using the Intel Core™2 processor with vPro™ technology¹ to improve PC management. This time, IOT not only generates massive cost and energy savings, but is helping Indiana meet the challenges of a tough economy.



CHALLENGES

- **Build on success.** IOT is committed to adopting new solutions that can make its standards-based infrastructure even more agile, available, and economical.
- **Improve client management.** With 25,000 PCs across the state, inefficient remote management required frequent deskside visits that kept costs high and meant hours on the road.

SOLUTIONS

- **Server virtualization.** IOT is implementing its virtualization strategy on Intel-based servers, including high-end Dell PowerEdge* R900 servers with the Intel® Xeon® processor 7400 series.
- **Client management.** New Dell OptiPlex* PCs powered by the Intel Core™2 processor with vPro™ technology provide hardware-assisted remote management.

IMPACT

- **Server-related cost savings of USD 4.148 million over three years.** Analysis shows that an 89 percent consolidation ratio plus energy-efficient Intel server technologies can help the state save over USD 4 million on total cost of ownership (TCO).
- **856,286 fewer pounds of CO₂.** Using the capabilities of Intel vPro technology to reduce deskside visits, IOT can avoid trips that would produce 856,286 pounds of CO₂ emissions over four years.
- **USD 1.475 million in power savings.** IOT projects savings of USD 1,474,675 in power costs over four years from using Intel vPro technology to turn PCs off remotely when they're not in use.



"We are 98 percent on Intel platforms. Those systems do everything we ask them to do."

– Jim Rose
Manager, Systems Administration
Indiana Office of Technology

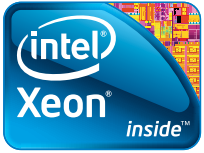
Best in Class

Indiana Office of Technology (IOT) is a best-in-class IT operation that routinely exceeds its service level agreements, wins industry recognition for its results-driven initiatives, and saves taxpayers millions of dollars every year while helping state agencies enhance their services.

Do Intel technologies play a key role in IOT's success? "Absolutely," says Jim Rose, IOT's manager of systems administration.

"We are 98 percent on Intel platforms. Those systems do everything we ask them to do, and every RISC server we retire and move into the Intel environment makes our IT team even more efficient."

In today's economy, those benefits are more important than ever. "State revenues are down across the board, but tough economic times actually increase state workloads because more people need to seek aid from various agencies," explains



Intel® technologies support agencies that serve 6.3 million citizens and execute the state's USD 14.5 billion budget.

Paul Baltzell, director of distributed services for IOT. "Solutions like Intel® vPro™ technology, which help us save money on energy and manage our PC fleet more efficiently, enable our department to deliver the best ROI, and save our taxpaying citizens money, even in a down economy. Increased productivity due to the performance of the new processors also helps offset the increased service levels that many agencies are delivering in times such as these."

Intel® Xeon® Processor 7400 Series for Virtualization

IOT recently selected Dell PowerEdge R900 servers based on the Intel Xeon processor 7450 and Intel® Virtualization Technology (Intel® VT)² to support some of its high-end virtualization requirements. The processor's six-core performance, large cache, dedicated high-speed interconnects, and hardware-assisted virtualization make it the preferred choice for a wide range of virtualization scenarios.

IOT identified 669 older x86 and RISC servers—roughly 45 percent of its total installed base—that are candidates for replacement. IOT determined that consolidating and virtualizing them onto the PowerEdge R900 would deliver a

remarkable 89 percent consolidation ratio and save USD 4.148 million in hard costs alone from server hardware, cooling, and network and storage equipment over three years.

"Like any enterprise, we are challenged to continually become more efficient in every aspect of our operation," Rose says. "We are always looking to get the most out of our existing infrastructure and find new technologies and approaches that can deliver big impact. Virtualization on the Intel Xeon processor 7400 series is definitely one of those. The processor gives us great performance and virtually unlimited headroom, and with virtualization, we can deploy new servers and software quickly and be more responsive to our agencies. Our availability is also higher."

Intel vPro Technology to Improve Client Management

IOT has activated the remote management capabilities of more than 7,000 Intel vPro technology-based PCs and is seeing significant benefits as the number of activated PCs rises. By identifying and resolving hardware problems quickly and remotely, technicians can eliminate an estimated 80 percent of deskside visits,

SPOTLIGHT ON THE INDIANA OFFICE OF TECHNOLOGY

Indiana's Office of Technology (IOT) provides enterprise technology services for state agencies serving the nation's fourteenth most populous state and its diversified economy. IOT supports day-to-day IT operations and is responsible for establishing standards, improving service levels, and lowering service delivery costs.

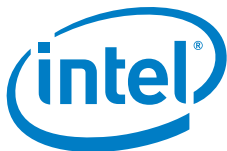
enhancing both end-user and technician productivity. With fewer hours on the road, the change is projected to reduce carbon emissions by 856,286 pounds over four years and save the state USD 172,761 in the first year of full activation.

Furthering the impact, IOT uses the remote power on/off capability of Intel vPro technology to turn PCs off when they're not in use. IOT anticipates cumulative four-year savings of over USD 1.475 million in energy costs from this usage model. All told, IOT calculates a positive ROI of 427 percent across four years through the use of PCs with Intel vPro technology, with a break-even point at 13 months.

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

Energy: Efficiency, Environment, and Performance. Lower energy and cooling costs, while keeping mobile users going, through more environmentally friendly computing.

To learn more about Intel's Predictive Enterprise strategy, visit www.intel.com/references/pe.



¹Intel® vPro™ technology includes powerful Intel® Active Management Technology. Intel® Active Management Technology (Intel® AMT) requires the computer system to have an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications or implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating, or powered off. For more information, see www.intel.com/technology/platform-technology/intel-amt.

²Intel® Virtualization Technology (Intel® VT) requires a computer system with a processor, chipset, BIOS, enabling software and/or operating system, device drivers, and applications designed for these features. Performance will vary depending on your configuration. Contact your vendor for more information.

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