



AMD Provides Critical IT Infrastructure for Helping Ingersoll Rand Drive Company Growth



Major Manufacturer Cites AMD Processors' Energy Efficiencies and Performance for Assisting Organic Growth Through New Product Development

THE CHALLENGE

- Leverage IT to promote organic growth through faster new product development
- Keep costs and energy requirements at a minimum
- Improve customer service by automating business processes
- Simplify IT through standardization and consolidation

THE SOLUTION

- Standardization through the purchase of 20,000 systems annually, including:
 - Dell OptiPlex 740 desktops powered by AMD Athlon™ 64 processors; and
 - AMD Opteron™ processor-based Dell servers running a variety of software including VMware virtual infrastructure

THE IMPACT

- Excellent performance for complex and memory-intensive CAD applications gave Ingersoll Rand engineers “more bang for their buck” in the form of enhanced productivity, helping deliver new products faster and drive growth for the company
- Energy-efficient desktop systems provided superb performance without increasing power requirements or operating costs, and played a critical role in the company's effort to “become greener”
- Consolidated servers through virtualization with VMware virtualization infrastructure software, and AMD and Dell technologies, helped reduce costs and simplify IT management
- Powerful processing delivered support for automated business processes for customers such as real-time product tracking
- Outstanding working relationship was established with AMD, helping Ingersoll Rand to better plan future projects with AMD technology-based innovations

As one of the world's largest industrial companies, Ingersoll Rand has a secret weapon with IT. Unlike some corporations that view IT as a simple function of “keeping the lights on,” Ingersoll Rand's tech-savvy IT team is always searching for and implementing innovative technologies that can drive business growth through new product development. Two years ago, Ingersoll Rand recognized the price/performance and energy efficiency innovations of the AMD Athlon™ 64 processor and the AMD Opteron™ processor, and began employing AMD processor-based Dell desktops and servers. Since then, the company has been able to improve customer service by automating business processes like product orders; simplify IT by standardizing on one vendor; and minimize costs through server virtualization and consolidation, helping reduce power requirements — while improving time to market.

With \$11 billion in annual revenue, Ingersoll-Rand Company Limited (NYSE: IR) is one of the world's largest global industrial companies. Ingersoll Rand owns 120 plants in 60 different countries, manufacturing products such as Schlage locks and ClubCar golf carts.

The company is led by a 100-year-old tradition of technology innovation, which drives organic growth for Ingersoll Rand through new product development, and progress for its customers and their customers. According to Ingersoll Rand Vice President and Chief Information Officer Barry Libenson, the IT department is less concerned with how well the servers are running, and more with how IT can contribute to achieving business goals.

“We have leveraged IT to help Ingersoll Rand drive new product development and improve the manufacturing process. This has helped the company recognize IT as an enabler of achieving financial goals rather than just supporting the business,” he said. “As such, our company is pretty well-educated from an IT perspective and we keep a close eye on innovative technologies.”

A few years ago Ingersoll Rand learned through Libenson's own enthusiast pursuits and industry buzz — analyst and media reports, customer and vendor feedback — that AMD had earned a tremendous reputation in terms of price/performance and energy efficiency. Promptly, Ingersoll Rand went to Dell, its primary

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desktop and laptop provider, and asked for timing and availability the company's AMD processor-based products. At the time, Dell was just beginning its relationship with AMD and Ingersoll Rand encouraged Dell to hasten the process.

In the interim, Ingersoll Rand established a relationship with AMD, which Libenson states as a major differentiator for the company. “We never had any interaction with our previous processor supplier whatsoever, and our experience with AMD has been dramatically different,” Libenson said. “Every single person I have met through AMD has been a real pleasure: there is an evangelistic characteristic with AMD employees, where passion for their products and company is exhibited in everything they do.”

Once the AMD/Dell relationship was cemented, Ingersoll Rand began to implement the joint solutions in earnest.

Powerful and Energy-Efficient Desktops

With roughly 20,000 engineers building new products worldwide, Ingersoll Rand wanted to standardize on desktops that could improve time to market with reduced costs and power requirements. Although Libenson was excited about the new joint solutions, he did have some trepidation about internal client adoption as IT change is not always readily embraced. However, the AMD Athlon™ 64 processor-powered Dell OptiPlex desktops immediately eliminated any concerns.

The systems delivered “more bang for the buck”, according to Libenson, helping improve productivity for the engineers, which of course made them very happy. He stated that the majority of engineering applications are memory- and processing-intensive CAD applications like Pro/Engineer from PTC, and the enhanced productivity helped the team bring products like the ClubCar Decadent golf cart to market quickly.

Ingersoll Rand was pleased with the AMD Athlon™ 64 processor's energy efficiency. Libenson said, “With the powerful performance of the AMD Athlon™ 64 processor-based machines, we expected an increase in power requirements. But instead, we were very happy with what we found in terms of power consumption and overall costs. Additionally, we are always happy to implement technologies that will help make Ingersoll Rand a ‘greener’ company.”

AMD Processor-Based Servers Simplified IT and Helped Reduce Costs for Ingersoll Rand's Data Centers

In addition to making changes to the company's desktops, Ingersoll Rand also explored the option of AMD Opteron™ processor-based servers within its data centers in Dallas and Philadelphia. The company was looking to better leverage computing power as one-third of its servers were idle at the time, as well as to reduce costs by consolidating servers. Ingersoll Rand was also searching for an open architecture that offered exceptional price/performance. AMD processors, Dell systems and virtualization technology appeared to be an excellent solution so Ingersoll Rand began the experiment with the company's Climate Control business.

Ingersoll Rand's Climate Control business helps build products like refrigeration and refrigeration transportation units for Thermo King, and popular grocery display cases for companies like Hussman. Leveraging VMware virtual infrastructure software, Ingersoll Rand was able to consolidate many of its current servers to Dell PowerEdge servers powered by AMD Opteron™ processors. Despite the reduced number of servers, the company is still able to run entire systems and



powerful applications like supply chain, procurement and financial applications with the same, if not improved, level of performance and reliability — while helping reduce costs and power consumption.

The new AMD and Dell technology-based infrastructure provided the foundation for Ingersoll Rand to automate more business processes. With the previous infrastructure, actions such as order tracking were not automated so customers simply placed an order and waited for that order to arrive. The new AMD Opteron™ processor-based servers provide powerful processing capabilities that enabled Ingersoll Rand to implement functionalities like order tracking to be more automated. Now, customers can track the status of their orders in real-time, and Ingersoll Rand can permit customer-friendly actions such as online warranty claims submissions.

“The AMD and Dell-based virtualization solution addressed our utilization and cost issues while helping improve performance overall,” said Libenson. “Whether it’s in our ERP systems, our customer-facing systems, or through Web-based applications, Dell and AMD have really helped us a great deal in terms of providing the underlying infrastructure to support those initiatives.”

The company is currently implementing virtualization solutions based on AMD Opteron™ processor-powered Dell PowerEdge servers throughout its data centers to support various initiatives like disaster recovery. “AMD and Dell-based virtualization is the standard model for most of our systems moving forward,” said Libenson. “We are looking to see if all of Ingersoll Rand’s applications can be virtualized.”

Standardizing on AMD and Dell

With nearly all of Ingersoll Rand’s desktops migrated to Dell and AMD, and the server count steadily following suit, the company is realizing significant benefits of standardizing on one platform. “If you think about running IT inside of an \$11 billion corporation, there are a lot of suppliers, and a lot of different relationships, so establishing a core platform from a single provider greatly simplifies our IT infrastructure,” said Libenson. “To me, what’s really been impressive is the adoption rate for Dell and AMD equipment over a very short period of time. Despite my initial concerns about adoption, the systems performed so well that rather than complaints we have received praise from our internal clients. As such, Dell and AMD went to having essentially 99 percent of our business in less than a three year period.”

Future Plans with AMD

Ingersoll Rand has been so impressed with AMD’s technologies, people and strategy, that the company plans to continue to implement new innovations as they become available and are in tune with the company’s upgrade schedule, beginning with the Quad-Core AMD Opteron™ processor. “AMD is just such as pleasure to work with,” said Libenson. “The easy upgrade path and socket compatibility make me very comfortable with future implementations, and the forthrightness with which AMD shares information greatly helps us in our planning.”

For more information, visit business.amd.com

About AMD

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