



Case Study

Intel® Xeon® processor
7300 series
Predictive Enterprise



“Endeca’s success to date would not have been possible without the innovations Intel has brought to market. Multi-core computing will play one of the greatest enabling roles for adoption of next-generation information access technology.”

Steve Papa,
CEO,
Endeca

Defining a multi-core standard


Endeca adopts the Intel® Xeon® processor line as the standard for software development and the foundation for IT virtualization

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- Challenges**
- **Adopt an industry-standard processing architecture.** Move to a multi-core architecture standard for software development that matches customer production environments.
 - **Consolidate the IT infrastructure.** Create a consolidated IT infrastructure for software development and enterprise applications to increase server utilization while also providing the scalability for continued business growth.

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- Solution**
- **Intel® Xeon® processors for software development and virtualization.** The Endeca team chose the Intel® Xeon® processor family as a standard for software development and selected the Intel Xeon processor 7300 series as the foundation for its virtualized server environment.
 - **Intel® software tools.** Endeca is adopting Intel® software tools such as the Intel® VTune™ Performance Analyzer to optimize code quickly.

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- Impact**
- **Consolidated IT infrastructure.** Endeca has reduced server acquisition costs by 40 percent and retired more than 30 servers.
 - **Accelerated software development.** Intel Xeon processors enable software engineers to validate code faster, and virtualization enables them to provision new test servers without buying hardware.
 - **Moving toward a Predictive Enterprise.** The new infrastructure is helping Endeca and its customers create more flexible businesses that can sense, predict, and act on marketplace changes.

Endeca’s search and information access technology is changing how businesses and their customers gain visibility into—and interact with—information. By simplifying searches for products and services, and by providing greater visibility and flexibility in searching for business information, Endeca is helping to fuel retail sales, increase media downloads, improve supply chain efficiencies, and facilitate better business decision-making. The company’s software engineers chose to adopt Intel® Xeon® processors as the standard for application development so they could optimize the software for the architectures that their customers used most frequently. At the same time, the company built a virtualized server environment using servers with the Intel Xeon processor 7300 series to create a consolidated yet scalable infrastructure that could grow along with the business.



“Multi-core Intel® Xeon® processors help move more data through the system and increase the interactivity of our product....That’s why we and our customers are choosing Intel.”

Adam Ferrari, CTO, Endeca

“The Intel® Xeon® processors give us the performance we need to host numerous virtual machines, and the price-performance ratio gives us a fighting chance to supply the computing needs required by our development environment.”

Keith Johnson,
Vice President,
Development,
Endeca

Intel Processors Deliver Results for Development and Virtualization

Endeca searches for an industry-standard processing platform

Endeca software engineers need to develop code for processing architectures that closely match customer production environments. “There’s no question that our customers are moving to multi-core processing architectures,” says Keith Johnson, vice president of development at Endeca. “Our software must deliver outstanding performance on the multi-core architectures that our customers use today and the architectures they will use in the future.”

Meanwhile, the company’s IT group requires a standard architecture that can help reduce server sprawl. “We need to accommodate business growth while controlling the expansion of our data center,” says Peter Smith, manager of IT infrastructure at Endeca. “A few years ago, we found that many of our servers were under-utilized. We wanted to consolidate the infrastructure to reduce the environmental requirements, but at the same time, we needed a flexible and scalable solution.”

Intel Xeon processors deliver the results for software development and virtualization

For the software development servers, Endeca software engineers selected Intel Xeon processors—an industry standard that can deliver the performance for the company’s dynamic search engine. “Our platform delivers real-time, dynamic summarization of data to help enable the decision-making process. Each search requires as much compute capacity as possible to answer that single question,” says Adam Ferrari, CTO at Endeca. “Multi-core Intel Xeon processors help move more data through the system and increase the interactivity of our product. The memory bandwidth increases and other important architecture enhancements we see ahead in the Intel technology road map will further improve that performance. That’s why we and our customers are choosing Intel.”

The Endeca IT group also selected quad-socket servers with the Intel Xeon processor 7300 series as the foundation for a virtualized IT infrastructure. This four-socket platform is helping Endeca consolidate enterprise systems and virtualize several software development servers. “The Intel Xeon processors give us the performance we need to host numerous virtual machines, and the price-performance ratio gives us a fighting chance to supply the computing needs required by our development environment,” says Johnson.



Virtualization eliminates 30 servers and decreases new server purchases by 40 percent

By creating a virtualized server environment, the Endeca team has significantly consolidated its infrastructure. "We have currently created 200 virtual machines on just 30 physical servers, and we have already retired more than 30 older servers," says Smith. "The current servers now have much higher utilization. Server utilization has increased from less than 25 percent to between 50 and 80 percent. As a result of this virtualization project, we significantly decelerated growth of the data center space."

Virtualization has also provided scalability for growth without requiring the purchase of many new physical machines. "Over the last year, we reduced our new server purchases by up to 40 percent," says Alex Wong, director of IT at Endeca. "We reinvested these savings into other productivity-enhancing tools, and additional computing resources for our development team."

Intel Xeon processors help accelerate software development

The Endeca engineering team has found that using the multi-core Intel processors is helping to speed up the software development process. "With the multi-core Intel Xeon processors, we can validate multiple code branches in parallel, and that is increasing our development velocity significantly," says Johnson.

Spotlight on Endeca

Endeca's search and information access software enables enterprises to give users unprecedented insight into any data anywhere. Solutions built on Endeca's technology deliver the clearest visibility into information, driving billions of dollars in measurable cost savings and increased revenue for its customers. Endeca solutions are built on the Endeca Information Access Platform, powered by patented MDEX Engine* technology, which marries market-leading search with business intelligence capabilities, offering the most powerful way for nontechnical users to access and interact with the full range of structured and unstructured data across the enterprise. Endeca solutions are in use at more than 500 leading global organizations.

The software engineers also capitalize on the virtualized environment to reduce the time for provisioning new test servers. "We have a ruthless obsession with automated testing. With the virtualized environment, we can provision a whole bank of machines to validate any product change in very little time," says Johnson. "We no longer have to buy a new physical server for every new test server. Faster provisioning helps us reduce costs and greatly accelerate the development process."

Performing more testing with the virtualized environment also helps engineers gain deeper insight into the company's product. "The Endeca test infrastructure processes billions of records, executes tens of thousands of tests, and performs a detailed statistical analysis of more than 20 performance metrics in a continuous cycle of quality assessment," says Johnson. "Without Intel Xeon processors and the virtualized server environment, achieving that level of insight into our product would be cost prohibitive."

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Adam Ferrari,
CTO,
Endeca

Intel® software tools help optimize code

The Endeca software development team has also adopted Intel® software tools to enhance the efficiency of development efforts. "The Intel® VTune™ Performance Analyzer is superior to many of the other performance analyzers available—it delivers more accurate results, faster," says Ferrari. "It's helped us gain better visibility into how the processor is operating, and it highlights the code that we need to optimize. In the future, we plan to use Intel libraries, compilers, thread checkers, and profilers to further improve the efficiency of software development."

The new infrastructure is more adaptive for change

The new IT infrastructure is helping Endeca and its customers move toward becoming Predictive Enterprises, which can anticipate and quickly respond to change. "Internally, the new virtualized infrastructure gives us much greater flexibility," says Ferrari. "We can provision new application servers very quickly, so we can respond

better to changes in our business. Our customers benefit from the new infrastructure as well. We can create technology that better addresses customer needs and facilitates better decision making. As a result, those businesses can respond to change rapidly, correctly, and confidently."

Intel helps keep Endeca on the cutting edge

By working closely with Intel, Endeca software engineers are able to prepare the company's software for emerging technologies. "The Intel team provides a clear road map, delivers on that road map, and gives us early access to new technology so we can start to capitalize on new capabilities right away. For example, our technology will be ready to take advantage of the integrated memory controller in the next-generation architecture," says Johnson. "We want our technology to be on the cutting edge. We need to deliver outstanding interactive performance, economically, as our customers' infrastructures scale. Intel is helping us achieve those goals."



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