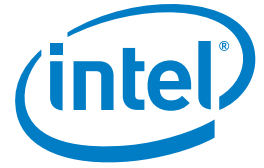


## CASE STUDY

Intel® Xeon® processor 5600 series

Enterprise Server

Performance: Data-Intensive Computing



# Searching on the cutting edge

Endeca developers optimize their search technology for the latest Intel® processors, potentially boosting performance by 10 times



"The Intel® Xeon® processor 5600 series provides the raw compute performance and large memory bandwidth needed to deliver outstanding throughput for the Endeca search engine."

– Adam Ferrari,  
Chief Technology Officer,  
Endeca

Organizations in retail, digital media, manufacturing, distribution, government, and other fields are implementing Endeca search and business intelligence technology to gain fast, easy access to information and to generate key insights from rapidly growing collections of data. To maximize the achievable performance of Endeca software on customer systems, the company's engineers adopted the Intel® Xeon® processor 5600 series as the target processing architecture for software development. With Endeca software optimized to capitalize on the new architecture, customers could experience 10 times better performance while using less hardware.

## CHALLENGES

- **Maximize search performance.** Optimize Endeca software for the latest processors so customers can quickly and easily perform more complex queries on larger data sets.
- **Accelerate software development.** Adopt software tools that can help rapidly analyze and tune code.

## SOLUTIONS

- **Servers with Intel® Xeon® processors.** Endeca developers adopted the Intel Xeon processor 5600 series as the target architecture for software development.
- **Intel® software tools.** Developers use Intel® VTune™ Performance Analyzer to fine-tune code.

## IMPACT

- **Improved search performance.** By optimizing software for the latest Intel® architecture, Endeca developers will help companies search and analyze approximately 10 times more data in the same amount of time, all while using less hardware.
- **Accelerated software development.** Intel software tools help software engineers fine-tune code rapidly.
- **New customers and partners.** Stronger, more efficient search performance could attract new customers and encourage software companies to develop new products for the Endeca search platform.

Whether an online retailer wants to enable consumers to search product reviews, a manufacturer needs to find detailed parts data, or an enterprise wants to analyze long-term business trends, Endeca's search and business intelligence applications improve daily decision making. "With some existing search and business intelligence tools, organizations have to invest significant resources into preparing systems for queries," says Adam Ferrari, chief technical officer at Endeca. "Especially in a tough economic environment, companies need to be more agile. Companies need dynamic tools that can accommodate complex queries on the fly, even when searching large data sets."

Endeca software engineers are constantly working to enhance the efficiency of the Endeca MDEX Engine\* technology so customers can conduct those dynamic searches while controlling costs. "Companies today need to do more with less," says Alex Wong, CIO at Endeca. "Our goal is to optimize Endeca software so companies can search and analyze more information without having to buy and manage a very large infrastructure."

To maximize the performance of Endeca software, the company's software engineers need to adopt a cutting-edge processing architecture as the target for future development. By optimizing software for that architecture and



## Intel® Xeon® processor 5600 series becomes the new standard at Endeca

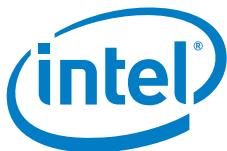
recommending it to customers, Endeca can help ensure that customers will derive the strongest benefit from Endeca software. "We need a target architecture that will deliver the best price-performance and scalability for handling large data sets and growing query traffic," says Ferrari.

### Developers adopt the Intel Xeon processor 5600 series as the new target architecture

Having moved to multi-core Intel processors years ago, it was a natural progression for Endeca engineers to adopt first the Intel Xeon processor 5500 series and then the Intel Xeon processor 5600 series as the target architecture for software development. Engineers now test code on servers equipped with the Intel Xeon processor 5600 series and running Microsoft Windows Server\* and Red Hat\* Enterprise Linux\* operating systems to simulate user environments.

"The Intel Xeon processor 5600 series provides the raw compute performance and large memory bandwidth needed to deliver outstanding throughput for the Endeca search engine," says Ferrari. "The new memory architecture helps stream data through the processing engines rapidly so the software can conduct complex queries on large data sets fast."

"For our customers, the Intel Xeon processor 5600 series delivers very strong performance in a cost-effective, energy-efficient footprint," adds Wong. "This is a compelling architecture to recommend for running Endeca software."



### Intel software tools help accelerate development

To optimize code for the new processors, Endeca engineers rely on Intel software tools. "Intel VTune Performance Analyzer is our go-to software analyzer," says Ferrari. "With VTune, we can gain key insights into our code and pinpoint areas for improvement quickly. VTune helps us improve the quality of our product and bring new versions to market faster."

### New processors deliver dramatic search performance improvements

Endeca customers could experience improved search performance just by migrating to servers based on newer Intel® processors. "We compared the Intel Xeon processor 5500 series with the previous-generation Intel Xeon processor 7300 series in a number of tests. When searching a typical retail catalog containing 2.2 million book descriptions, query throughput was improved by 172 percent and latency decreased by 61 percent," says Ferrari. "We expect stronger results with the Intel Xeon processor 5600 series. Companies—or their customers—will be able to run queries on much larger data volumes in the same amount of time as before."

As the Endeca developers optimize the company's software for current processors and future processors with increased core counts, customers should see even more impressive results. "We're in the process of incorporating multi-threading enhancements to the software to take greater advantage of the multi-core architecture," says Ferrari. "With a sufficient number of cores, our customers could experience 10 times better performance with the multi-threaded version of our software running on the Intel Xeon processor 5600 series. Companies could deliver interactive search and analysis on databases representing a terabyte or more of data, containing hundreds of millions of entries, using only a single server. The

### SPOTLIGHT ON ENDECA

Endeca is a search and business intelligence software company that improves daily decisions for employees and purchase decisions for customers. Endeca's unique innovation, the hybrid search-analytical database, enables IT organizations to deliver solutions with consumer ease-of-use on diverse and changing information. Endeca solutions drive hundreds of millions of dollars in reduced costs and increased revenues in the world's most demanding decision-making environments.

end result could be a better online shopping experience, a more efficient supply chain, or faster access to business intelligence."

### Software enhancements could attract new customers and partners

Companies will achieve those results without a massive infrastructure. "In the past, customers had to use a rack of 8 to 10 servers to query large data sets. That infrastructure was costly to acquire and run, and complex to manage," says Ferrari. "With multi-threaded software running on this Intel architecture, companies can achieve even better results using only a single server. We should attract new customers and enable them to run queries and applications they couldn't afford previously."

A multi-threaded software architecture should also attract new technology partners. "Our multi-threaded software could inspire even more software vendors to build business intelligence tools and other applications for the Endeca platform," says Ferrari. "Optimizing for the latest Intel architecture will enable our customers to do more for less while also delivering important strategic benefits for our company."

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