

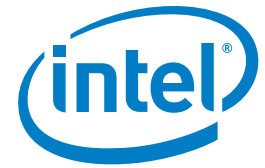
CASE STUDY

Intel® Xeon® processor 7400 series

Intel Xeon processor 5500 series

Enterprise Server

Performance: Data Intensive Computing



Counting on the County

California's geographically largest county uses Intel® technology for critical applications supporting 40 school districts within a 22,000-square-mile area of southern California

All of the K/14 school district's core business systems data, including HR, are managed through the San Bernardino County Superintendent of Schools office. When the task of administering the volume of information began to overwhelm the county's servers, IT team members turned to Intel processor technology for the horsepower they needed.

"With the ever-increasing demand that is placed on technology to provide new products and services with faster speeds and more capacity, I commend the staff and Intel for continuously finding solutions as we endeavor to serve our school districts," says Gary S. Thomas, Ed.D., San Bernardino County Superintendent of Schools.



CHALLENGES

- Eliminate server bottlenecks for key school financial and human resources operations
- Increase responsiveness and reduce downtime for school district staff
- Virtualize and consolidate additional servers in the IT environment

SOLUTION

- Intel® Xeon® processor 5500 and 7400 series

IMPACT

- **Accelerated performance.** Intel Xeon processor 7400 series improves screen refresh times by approximately 33 percent
- **More processing headroom.** Upgrading with the Intel Xeon processor 7400 series reduces processor utilization by over 70 percent, allowing room to grow
- **12-to-1 consolidation.** Servers with the Intel Xeon processor 5500 series enable virtualization and consolidation in other areas of the IT environment



40 School Districts Count on San Bernardino County Schools IT

One of the biggest responsibilities of the IT department in the San Bernardino County Superintendent of Schools office is to process all of the financial and personnel transactions for the county's 40 school districts. As an example, the department generates paychecks for more than 60,000 school employees per month, ranging from teachers to classified staff and administrators.

A New Application Causes Bottlenecks and Downtime

When the IT team rolled out an enhanced financial application to meet the needs of school district users, however, it discovered that the current single- and dual-core servers could not handle the load. "The

districts needed the enhanced functionality to do their jobs, but the new application bottlenecked our server processor resources," says David Evans, chief systems research officer for the county. "It was taking 30 seconds or more to refresh screens and bring information up. Servers would even freeze up, causing several minutes of downtime for all 600 of our users."

Processing requirements were certain to keep growing. In addition to the new financial application, the team runs a variety of other school district software. "We had many applications on an older mainframe computer and planned to move them over to our Microsoft Windows* environment," says Evans. "We needed a server and processor that would not only solve our immediate performance issues, but also give us room to grow."

"The Intel® processors gave us the performance we needed to prevent another server bottleneck, while fitting into the limited schools budget."

— David Evans
Chief Systems Research Officer,
San Bernardino County



Helping to Power Education in Southern California

Cost-Effective High Performance

The county schools office had standardized on Dell servers and Intel processors for its Windows environment. Based on recommendations from Intel and Dell, the team tested a four-socket Dell PowerEdge* R900 server and the Intel® Xeon® processor 7400 series with up to six cores to run its powerful new financial application. "The Intel processors gave us the performance we needed to prevent another server bottleneck, while fitting into the limited schools budget," says Evans. "We decided to use one of the new servers for our financial and HR applications and another for our SQL database."

Improved Screen Refresh Times

Moving to the new Intel technology-based servers has greatly improved screen refresh times. "After we upgraded with the Intel Xeon processor 7400 series, we went from 30 seconds down to 10 seconds or less to bring up information with our most demanding application," says Michael Carter, network administrator at the San Bernardino County Superintendent of Schools office. "We've received very positive feedback from our school district users and county officials."

Capacity for Future Growth

The process of migrating applications to the Intel servers was very smooth, and the server upgrade has given the county room to move more applications over from the proprietary mainframe environment. "Prior to the upgrade, we were running in excess of 95 percent utilization on the server processors," says Carter. "With the Intel Xeon processor 7400 series, utilization has dropped into the 20s running the same software. Now we can add applications until we reach the 50 or 60 percent level before we need to start thinking about adding another machine."

12-to-1 Server Consolidation

With the financial and HR application performance problems solved, the Superintendent's IT team is no longer spending hours restarting servers and can channel that time into more strategic projects. For example, the team has virtualized other areas of the IT environment, consolidating approximately 90 servers onto seven Intel technology-based hosts. "We're using Dell PowerEdge blade servers with the Intel Xeon processor 5500 series for our newest hosts," says Carter. "The energy efficiency and processing density enable us to pack a high number of virtual machines into our available computer room space."

SPOTLIGHT ON SAN BERNARDINO COUNTY SCHOOLS

With boundaries encompassing busy metropolitan centers as well as remote open spaces, San Bernardino County is California's largest in area. The County Superintendent of Schools office oversees 40 school districts serving 434,000 students, including four community college districts.

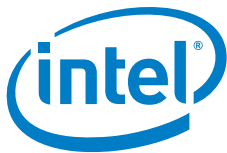
Road Map for Success

The IT team credits Intel's responsiveness and long-term processor road map with helping the county meet its IT challenges. "Our Intel representative keeps us up to date on what Intel has planned, so we're able to make the right processor choices," says Evans. "Working with Intel and Dell, we were also able to get systems with the latest Intel processors in short order. With tens of thousands of school employees counting on us, that's extremely important to a lot of families."

Performance:

Data-Intensive Computing: Support the most demanding business data processing and computationally intense graphics.

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



This document and the information given are for the convenience of Intel's customer base and are provided "AS IS" WITH NO WARRANTIES WHATSOEVER, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS. Receipt or possession of this document does not grant any license to any of the intellectual property described, displayed, or contained herein. Intel products are not intended for use in medical, life-saving, life-sustaining, critical control, or safety systems, or in nuclear facility applications.

Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance

Intel may make changes to specifications, product descriptions and plans at any time, without notice.

Intel, the Intel logo, and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Copyright © 2010 Intel Corporation

*Other names and brands may be claimed as the property of others. Printed in USA

0110/YMB/TDA/XX/PDF

Please Recycle

322625-001US