

Case study

Serving citizens

Virtual improvement

Sacramento County, Calif., deploys a powerful and flexible ERP platform.



Customer snapshot

Agency: Sacramento County Office of Communications and Information Technology (OCIT)

Mission: OCIT is responsible for providing a number of shared IT services to county employees and departments, and regional partners. OCIT also develops customized business solutions for departments.

Business case

Requirement: Implement a flexible solution that can meet current ERP demands and scale to meet future needs.

Solution: OCIT consolidated the 30 servers that previously powered its ERP system to two HP Integrity Servers running in a virtualized environment.

Results: OCIT reduced the amount of hardware the county needed to manage. And using the virtualization software, IT staff can experiment with new features and quickly move them into production.



Bruce Hendrickson,
IT manager, Sacramento
County Office of
Communications
and Information
Technology

With users demanding more management information and new functionality, Sacramento County, Calif., needed a computing platform that could unlock the potential of its ERP system.

The new platform didn't just need to deliver more features however; it had to tame the server sprawl that had grown to more than 30 machines supporting the county ERP system. And the solution had to be scalable and flexible enough to last nearly 10 years once it was deployed.

"We wanted to do hardware consolidation so that we had less hardware to manage," said Bruce Hendrickson, IT manager for the county Office of Communications and Information Technology (OCIT).

"We also wanted to increase our flexibility because we have users who want to try new components. We're licensed for a lot more ERP components than we're currently using."

Sacramento County's requirements represented a tall order, but virtualization software deployed on a powerful 64-bit server platform provided the solution. The new technology slashed the number of servers needed to power Sacramento's ERP system, and it enables county officials to easily launch and evaluate new information tools.

Big job, small staff

OCIT supports two ERP systems that, together, handle many fundamental business functions for the county. One system performs traditional back-office tasks, such as financials, payroll and logistics. The other system handles utility billing.

Covering nearly 1,000 square miles, Sacramento County serves a large and varied population, which puts a wide range of demands on the jurisdiction's IT infrastructure. Seven thriving cities are located within the county boundaries, including California's capital city, Sacramento. In addition, Sacramento County delivers basic municipal services to more than a half million people living in unincorporated areas of the jurisdiction.

In all, more than 1.4 million people call the county home.

Tight resources mean IT officials must support large-scale county operations with a relatively lean staff.

The virtualization solution supports that requirement by reducing the amount of hardware managed by county IT staff and simplifying the task of deploying new ERP features.

"We have a small workgroup, so this frees up staff members to work on more valuable projects," said Joe Ledesma, senior IT analyst for the county. "And before we had this platform, we basically had to find a spare server in order to try a new ERP component."

The ability to quickly create virtual servers lets county IT officials easily evaluate new software tools and functionality without deploying additional equipment. If the experimental functions prove beneficial to users, they can quickly be ramped up to production status.

"In this environment, you can create a small virtual machine to experiment with," said Hendrickson. "If it doesn't work out,

"In this environment, you can create a small virtual machine to experiment with. If it doesn't work out, there's not much waste, and if you do want to go to production, you can allocate all the resources you need."

Bruce Hendrickson, IT manager, Sacramento County Office of Communications and Information Technology



Sacramento County at a glance

Seven cities and approximately twice as many unincorporated communities fall within the boundaries of Sacramento County. The county is home to:

.....
19 major public and private colleges and universities
.....

.....
16 public school districts
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.....
15 major art and historical museums
.....

.....
26 public libraries
.....

.....
10 hospitals
.....

.....
14 regional parks districts
.....

.....
1,252 people per square mile
.....

Source: Sacramento County

HP Integrity rx2660 Server



- Entry-class value with incredible flexibility and high performance/watt
- Up to 2 Dual-Core Intel Itanium 2 processors
- 32 GB max memory
- 1.168 TB max internal storage
- Available operating systems:

HP-UX 11i v3 and HP-UX 11i v2; Microsoft Windows Server 2003 Enterprise and Datacenter Editions; Red Hat Enterprise Linux AS/ES 4; Novell SUSE Linux; Enterprise Server 10; OpenVMS v8.3

HP StorageWorks MSA 1510i with MSA 30 SCSI Enclosure Mini Bundle

part no. AD593A



- iSCSI-based 2U controller shelf with two 1 GB Ethernet connections per controller
- Hot plug expansion and replacement for simple, fast installation and maintenance
- RAID 6 with Advanced Data Guarding (ADG) for the highest level of fault tolerance
- Mini bundle includes MSA30 SCSI single bus model enclosure

\$5,699

GSA price: \$5,441

HP ProCurve 2650 PWR Switch

part no. J8165A#ABA



- External-1U
- 16 MB memory
- 48 x Ethernet 10Base-T, Ethernet 100Base-TX
- 100 Mbps data transfer rate
- SNMP 1, RMON 1, RMON 2, RMON 3, RMON 9, Telnet, SNMP 3, SNMP 2c, HTTP remote management protocol
- Flow control, auto-sensing per device, IIP-routing, power over Ethernet, BOOTP support, ARP support, trunking, VLAN support, auto-uplink (auto MDI/MDI-X), manageable, stackable
- 802.3, 802.3u, 802.1D, 802.1Q, 802.3ab, 802.1p, 802.3af, 802.3x, 802.3ad (LACP), 802.1w, 802.1x
- Limited lifetime warranty

\$3,167

Government open market price

For the latest contract and pricing information, see www.hp.com/go/govmag or call 888/887-2081.

ERP solution

Sacramento County's ERP system powers a number of business-critical functions. HP infrastructure solutions meet demanding enterprise technology requirements.



Photo by William Foster Photography

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Joe Ledesma, senior IT analyst, Sacramento County Office of Communications and Information Technology

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Advanced platform

To meet its goals for hardware consolidation and scalability, Sacramento County chose HP Integrity servers equipped with HP Virtual Server Environment (VSE) running HP-UX. Integrity servers—equipped with powerful 64-bit Intel Itanium 2 processors—are a good match for the county's

processor-intensive ERP system, which formerly required 30 servers to operate.

"With the HP Integrity platform, there is not the SMP limits on the number of processors as with the x86 architecture, so that meant that we could consolidate our entire workload into just two of the mid-range Integrity servers," Hendrickson said.

Indeed, the entire ERP operation could have been consolidated onto a single Integrity server, but the county opted to deploy two in order to strengthen fail-





Virtual pioneer

Sacramento County Department of Human Assistance helps prove new platform.

over capabilities for its critical business systems. Each server now backs up the other in case of a hardware malfunction or other problem. The arrangement cuts recovery time for ERP components from hours to a matter of minutes. Furthermore, the county is adding an entry-level HP Integrity server housed in a remote location to provide disaster recovery capabilities.

Sacramento County's ERP infrastructure relies on proven HP-UX technology and was the logical successor to the current Tru64/AlphaServer environment that has been discontinued by HP. One of the reasons the HP-UX virtual technology was chosen was that it is a very mature technology in the UNIX environment. OCIT participated in HP Integrity migration programs and has been using Integrity servers since 2005 for other Integrity/HP-UX based applications.

"Now we have our testing environment and our production environment on the same hardware, but separate from each other. That was one of the big benefits we were looking at—the ability to isolate things on different nodes."

Michael Hooper, senior IT analyst, Sacramento County Department of Human Assistance

Quick development

Along with extensive hardware consolidation, Sacramento County's virtualization solution delivers the agility to quickly meet the management-information demands of county decision-makers and business users.

For instance, managers want to deploy business intelligence tools for the county's utility billing system. OCIT staff will be able to quickly create a new virtual server to meet this need.

Sacramento County was among the first of 18 California counties to participate in CalWIN, a massive state-mandated information system designed to automate welfare eligibility for a number of social services programs.

Predictably the one-size-fits-all CalWIN system didn't completely satisfy the management-information needs of the Sacramento County Department of Human Assistance, which administers welfare programs within the jurisdiction.

"As part of the CalWIN project, we completely re-engineered our environment in order to meet the needs and challenges of this particular application. Once things started to settle down, and our staff started using the application, we found that there were a number of gaps in the information," said Michael Hooper, senior information technology analyst for the Department of Human Assistance.

So the department began creating its own applications to make the monthly and daily data extracts from CalWIN more useful. Making sense of the massive CalWIN data extracts wasn't easy, however.

Microsoft's powerful SQL Server 2005 database software running on HP's Itanium processor-based Integrity servers seemed to offer a solution.

"We were looking for a platform we felt could handle SQL 2005, handle this huge amount of data and be able to scale as we moved forward," said Hooper. "So we started looking at Itanium because of the things we were reading with SQL 2005 and its performance on Itanium."

But Hooper is committed to server virtualization—the department has used various forms of virtualization technology for six years—and the HP Integrity virtual server environment for Windows wasn't commercially available yet. Working with Western Blue, a Sacramento-based HP partner, the Department of Human Assistance became a beta test site for the new technology.

The move quickly paid off.

"Now we have our testing environment and our production environment on the same hardware, but separate from each other. That was one of the big benefits we were looking at—the ability to isolate things on different nodes," Hooper said.

Using Windows clustering technology, Hooper also improved the availability of management information for county decision-makers. In case of a server hardware malfunction, the system automatically moves resources to a different virtual server node in about 30 seconds—a shift that's so quick, it's transparent to county workers. "That's essentially invisible to an end user," he said.

Finally, Hooper said the new technology offers a long-term solution to the department's processing requirements.

"I've been looking for a piece of hardware that I could build an infrastructure on and wouldn't have to replace in three to five years. This looks like something we can have in place for eight years and beyond," he said. "We always have fiscal constraints—you know, trying to do more with less—so this was a good opportunity."

HP StorageWorks DAT 160 USB External Tape Drive

part no. Q1581A



- Accelerates backup performance
- Enables higher capacity per tape and fewer tape swaps during backup
- Provides confidence in the data integrity of archived business information
- HP One-Button Disaster Recovery (OBDR) restores your entire system at the touch of a button
- Includes HP StorageWorks Data Protector Express, Single Server Edition backup/recovery software

\$949

Government open market price

HP ProCurve 3500yl-24G PWR Intelligent Edge Switch

part no. J8692A#ABA



- Enhanced connectivity with increased flexibility.
- Based on ProCurve's ProVision innovative chip technology enabling the versatility of Layer 2/3/4 10/100/1000 performance with integrated PoE intelligence on every port.
- This stackable switch ensures superior edge bandwidth capabilities with ProCurve's quality, reliability and lifetime product warranty.

\$2,879

GSA price \$2,867

HP Integrity rx7640 Server



- Excellent performance and compute density for data center applications
- Up to 8 Intel® Itanium® 2 processors, sx2000 chipset
- 128 GB max memory
- Available operating systems:
HP-UX 11i 2 and HP-UX 11i v2; Microsoft® Windows® Server 2003 Datacenter Edition; Microsoft Windows Server 2003 Enterprise Edition; Red Hat Enterprise Linux® AS 4.0; SUSE Linux® Enterprise Server 10; OpenVMS 8.3
- Dimensions: 30"d x 19"w x 17.5"h

For the latest contract and pricing information, see www.hp.com/go/govmag or call 888/887-2081.

Data solution

To accommodate the data demands placed on the Sacramento County Department of Human Assistance by the state's CalWIN system, the department decided to change its computing environment. HP offers powerful and flexible solutions to meet data needs.



Photo by William Foster Photography

Managers need to test the performance and value of new software components before deciding to deploy them.

To run evaluation software on the old ERP platform, IT staff needed to scrounge up a spare physical server, then wire and configure it. And if users liked what they saw, they usually encountered frustrating delays before the new features could be put into widespread use.

"We often had to say, 'Well, actually the machine you're running on can't be used in a production environment,' because it didn't have enough power or redundancy," said Ledesma. "When you have to add physical hardware, it takes three or four months to get that in and get that configured, which disappoints people."

Good investment

Besides delivering better flexibility, Hendrickson said he expects the new server platform to remain viable well into the future.

"These mid-range machines are very expandable. So as we add new workloads, we can just add more CPU and memory and keep going," he said. "Based on our past experience, we might keep them seven years and keep expanding them rather than have to go through the effort to replace them."

For a county government focused on service delivery and fiscal responsibility, that's an investment that makes perfect sense. ■

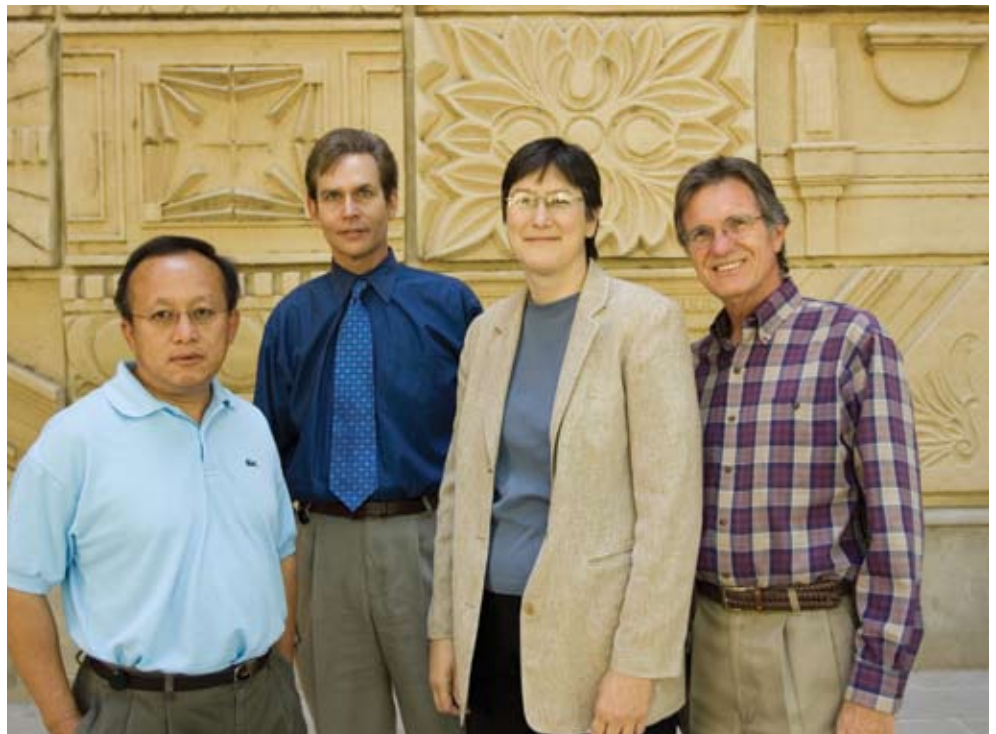


Photo by William Foster Photography

Left to right: Teengh Hergh, Bruce Hendrickson, Carol Wuebker, Jim Hicks