



## In Support of Clinical Excellence

### Case Study

Intel® Itanium® Processor  
Intel® Xeon® Processor

Digital Health



### Server technologies from Intel and HP deliver scalable performance for McKesson and Oracle solutions at Wheaton Franciscan Healthcare

Wheaton Franciscan Healthcare (WFH) is a leading integrated delivery network with 16 hospitals and nearly 3,000 physicians in Wisconsin, Iowa, and Illinois. Its Southeast Wisconsin region has ranked in Verispan's Top 100 list of the most efficient and best-performing healthcare networks in America for six years in a row.

Information technology is essential to fulfilling WFH's mission of delivering exceptional and compassionate care. The organization is in the midst of a three-year, \$61 million initiative to deploy an electronic health record (EHR) and other applications as part of its clinical excellence strategy.

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- Tim Belec  
Vice President  
of Technology  
Wheaton Franciscan  
Healthcare

Challenge	<ul style="list-style-type: none"> <li>▪ <b>Optimize the data center to support new clinical applications.</b> With digital technologies playing an increasingly important role in improving patient care and physician productivity, WFH needed its information services (IS) infrastructure to deliver greater scalability, performance, and reliability.</li> </ul>
Solution	<ul style="list-style-type: none"> <li>▪ <b>Consolidate and standardize.</b> WFH took an enterprise-wide approach to IS best practices, eliminating duplicate applications and standardizing on server technologies from HP and Intel.</li> <li>▪ <b>Ride the technology curve.</b> To optimize performance and capacity, WFH has been quick to adopt Intel multi-core processor technologies. An HP Integrity* server powered by the Intel® Itanium® processor supports a clinical data repository that will hold millions of patient records. HP ProLiant* servers with the Intel® Xeon® processor provide scalable performance for McKesson's Horizon Patient Folder™ and the Horizon Clinicals® suite.</li> <li>▪ <b>Call on the vendor community.</b> When WFH needed guidance in sizing critical McKesson applications for dual-core technologies, they benefited from Intel's collaborative vendor culture. Intel, HP, and McKesson—along with WFH's lead systems integrator and long-time partner, Paragon Development Systems (PDS)—teamed up to establish sizing guidelines, optimize performance, and enable WFH's IS team to proceed with confidence.</li> </ul>
Benefits	<ul style="list-style-type: none"> <li>▪ <b>Dual-core cost savings.</b> Using Intel's dual-core performance, WFH needed far fewer servers than originally projected—as much as a 5:1 reduction. With fewer servers, WFH improves IS efficiency and saves on both acquisition costs and total cost of ownership (TCO).</li> <li>▪ <b>Enhanced care and productivity.</b> The robust IS infrastructure translates into a time-saving experience for physicians as they view comprehensive information and use it to improve patient care. IS productivity has been improved as well.</li> <li>▪ <b>Room to grow.</b> With server utilization at just 11 percent in some cases, WFH has ample capacity and headroom as hospital traffic increases and additional applications come online. Reliability has been rock solid.</li> </ul>

# Wheaton's clinical data repository demanded performance, capacity, and reliability. The Intel® Itanium® processor delivered all three.

## Assessing the Situation

Like other healthcare leaders, Wheaton Franciscan Healthcare is deploying an EHR and other information technologies to help its clinicians deliver the best care possible. "An EHR is absolutely essential if you want physicians and staff to have comprehensive, up-to-date patient information, when and where they need it," says Tim Belec, WFH vice president of technology. "We are working to provide a unified view of patient information, with seamless access through a secure, Web-based portal."

Wheaton's IS leaders paved the way for the EHR deployment by creating a robust, scalable, and virtualized infrastructure based on technologies from Intel and HP. They started by consolidating four separate data centers into one, building a 10,000 sq ft operations center near corporate offices in Glendale, Wisconsin.

"We knew we could achieve tremendous economies of scale if we could get everyone on the same applications, train everyone in the same way, and standardize our business and clinical operations," recalls Belec. "So we started on this mission of standardizing and consolidating."

PDS has worked with Wheaton since 1988 and was an important partner in Wheaton's IS transformation. "PDS understands healthcare's IS challenges," says Scott Selby, vendor team manager for Wheaton's EHR initiative. "They know our environment, philosophy, and priorities. They're a highly valued partner that helps us keep on the leading edge of technology and meet our clinical and business goals."

WFH eliminated duplicate applications that were deployed across its enterprise, and migrated from proprietary architectures to open standards-based HP ProLiant servers with current-generation Intel Xeon processor technologies.

"There are so many advantages to using industry-standard technologies," says Selby. "By standardizing on Intel and HP technologies, we've been able to improve interoperability, reduce maintenance costs and total cost of ownership, increase availability, and create a more secure environment."

To increase flexibility and resource utilization, WFH uses VMware\* to create a virtual environment. Today, most applications run on the energy-efficient, dual-core performance of the Intel Xeon processor, and Wheaton is making Intel quad-core processor-based HP servers the standard going forward.

The consolidation has enabled WFH to add new clinical applications cost-effectively. The organization is deploying a broad suite of McKesson advanced healthcare IT applications at its Wisconsin and Iowa facilities.

"What's great is that since the consolidation, we've grown so much that we're supporting 40 percent more applications—but we're still on the same number of servers, and we've had no growth in IS staff," explains Jerry Sisak, systems engineering lead at WFH. "Intel® multi-core technology is part of what makes that possible. It saves us money and gives us tremendous increases in capacity, which helps us support the new clinical initiatives that are important to our physicians."

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*– Scott Selby, EHR Vendor Team Manager  
Wheaton Franciscan Healthcare*

## Spotlight: Wheaton Franciscan Healthcare

Sponsored by the Wheaton Franciscan Sisters, Wheaton Franciscan Healthcare is a Catholic, not-for-profit healthcare and housing organization with corporate offices in Wheaton, Illinois and Glendale, Wisconsin. In addition to 16 hospitals and over 2,000 staffed hospital beds, its network spans clinics, long-term care facilities, home health agencies, and assisted-living housing.

## Key Technologies

- Four HP Integrity rx4640 servers\* each with two Intel Itanium processors (1.6 GHz) and 16 GB of RAM running HP-UX\* and Oracle 10g\* RAC and interfacing with Horizon Infrastructure™ system
- HP ProLiant DL580 servers\* with the Intel® Xeon® processor (3.4 GHz) running Microsoft Windows Server 2003\*, Horizon Patient Folder, and other McKesson Healthcare applications
- HP StorageWorks XP\* arrays-based storage area network
- VMware\* enterprise-level virtualization software

## Delivering the Solution

Belec's team sees clear value in using open standards-based solutions and adopting new technologies as they become available. "We're not a technology-for-its-own-sake organization by any means, but if you're running older technologies or proprietary models, you're not getting the performance and the advances that the new technologies can give you," he says. "You run into reliability and interoperability problems, and you have a lot harder time keeping your environment secure, because it's harder to deploy the latest patches. We intend to stay on the latest or next-latest generation, and we need our software vendors to keep up with us."

As such, Wheaton chose McKesson's Horizon Patient Folder as its advanced document imaging system. The system provides anytime, anywhere access to review, analyze, code, and complete electronic patient records. But Wheaton's IS team encountered a hardware roadblock as it planned to deploy the system. The hardware standard needed to be upgraded to take advantage of the increased performance of Intel dual-core technologies.

## Collaborative Leadership

PDS turned to Intel and HP, which along with McKesson, stepped in with resources and expertise to resolve the challenge. Since Intel technologies are key ingredients in so many IS solutions, aligning the vendor ecosystem is a natural role for Intel, and the company has developed deep relationships with companies throughout the technology industry.

"Intel came to the forefront with a very strong customer service focus," says Selby. "They provided hardware for testing and worked with all the vendors to understand our issues and get them resolved. They played a critical role in enabling us to move forward."

HP, Intel, McKesson, Oracle, and PDS each played its part to integrate the solution, identify and remove performance bottlenecks, determine appropriate sizing guidelines, and ensure that all elements worked together smoothly. The resulting system, Sisak says, "is much smaller and faster than the system that was originally proposed—a single core of Intel's dual-core processor gives us as much performance as an entire processor of the competitor's system." The new system enabled Wheaton to consolidate from a 10+1 configuration to a 2+1 server environment.

Smaller and faster also means significant IS cost savings for WFH. "We've saved a ton of money, on both the Itanium and Xeon dual-core technologies" says Selby. "We spent less to purchase the system and our licensing costs are lower. With fewer servers and Intel's advances in energy efficiency, our costs for management, power, and cooling are lower. And now, with Intel's quad-core processors, all those benefits are amplified."

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## For the Clinical Data Repository: Even Greater Demands

For its Horizon Care Record™ clinical data repository from McKesson, Wheaton Franciscan Healthcare needed even higher levels of performance and capacity to keep the longitudinal record of patient clinical data highly available. They chose an HP Integrity server based on the Intel Itanium processor, with dual-core technology that's designed expressly for mission-critical, data-intensive workloads. The database interfaces with McKesson's Horizon Infrastructure integrated, healthcare quality and standards-based technology platform, which connects Horizon Clinicals point-of-care applications to improve patient safety and help reduce costs.

"We wanted the Itanium-based system because of capacity, performance, and reliability," Belec recalls. "We've got 12,000 users and 24 million patient records in Southeast Wisconsin and Iowa, so capacity is a clear requirement. If performance isn't there, the physicians won't use it, so that's a no-brainer. We shoot for five nines of reliability across our infrastructure, and this system absolutely needs to perform at that level."

## Vendor Collaboration a Plus for All

Belec and Selby say the multi-vendor cooperation that its team exhibited is just what the doctor ordered for large healthcare enterprises. "Healthcare is struggling to catch up from a base of proprietary platforms, and IS infrastructure is becoming more and more of an issue as healthcare organizations grow and get larger," Belec says. "We need robust, validated, enterprise-scale applications that can help us improve clinical care, support our operations, control costs, and comply with regulations. It's a huge benefit to our industry when vendors come together to optimize performance and make sure the software and hardware work well together. It's a win for us as customers, and it's a win for the vendors."

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*- Jerry Sisak, System Engineering Lead  
Wheaton Franciscan Healthcare*

Ultimately, such efforts enable organizations like Wheaton Franciscan Healthcare to focus more effectively on its mission of providing outstanding clinical care.

"With McKesson's clinical data repository, we're finally getting physicians out of the information silos and paper-based processes that have caused them so much frustration in the past," Belec says. "We're providing great opportunities to improve care, increase physician productivity, and have a patient record with much better privacy protection and security than was ever possible in the paper environment. We get to concentrate on patient care, and that's the business we're really in."



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