

Case Study



Metro Health consolidates IT infrastructure with HP Integrity servers based on Intel® Itanium® 2 processors to ensure continuity, fulfill core clinical mission

When Metro Health of Grand Rapids, Michigan, decided to leave its decades-old home and create an all-new healthcare campus – Metro Health Village – Chief Information Officer William J. Lewkowski seized on the opportunity to rebuild the system's IT infrastructure from the ground up. At the foundation of that new infrastructure are HP Integrity servers with Intel® Itanium® 2 processors running the HP-UX 11i operating system.

"We had a strategy, even before we began planning the move, of consolidating our servers and our infrastructure to make it much more efficient and cost-effective," says Lewkowski. "We stepped back and asked HP how they could help us achieve our technology vision."

That vision entailed building an infrastructure that was highly reliable, efficient and had continuous computing capability. With such a system in place, Metro Health could move away from pushing paperwork and instead, utilize technology to automate key healthcare processes and support its core clinical systems:

the electronic medical record, patient scheduling and registration, clinical documentation and billing, and a Picture Archiving and Communications System (PACS) for diagnostic imaging – essentially everything related to patient care.

Virtualization enables server consolidation, high service levels

In its previous home, Metro Health had suffered (like many health organizations) from server proliferation. Some 150 IBM servers had been squeezed into a 1,500-square-foot environment. Each new application was likely to lead to a new server installation.

In the new Metro Health Village, Lewkowski's staff is standardizing on HP Integrity servers with Intel Itanium 2 processors to run EPIC integrated hospital management software modules; and HP ProLiant blade servers. This strategy simplifies management while delivering the high service levels that health care delivery requires. HP's virtualization technology, including use of vPars and nPars for hard

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and virtual partitioning, has enabled Metro Health to consolidate the environment to fewer than 100 servers with further reductions to come. Fewer servers with higher, more efficient utilization will also lower Metro Health’s total cost of ownership for the new IT infrastructure.

Lewkowski notes that Metro Health wanted to be an early adopter of Intel’s Itanium technology, ensuring significant capacity and a roadmap for the future. He says it’s also a great advantage to Metro Health that Itanium processors support multiple operating systems, including both HP-UX 11i v2 and Microsoft Windows. “Itanium’s support for multiple operating systems will ensure better utilization of the servers and processors. We’ll take advantage of virtualization and be able to buy bigger computers and utilize them fully, rather than having separate servers for everything.”

Continuity comes first

Another key issue as Lewkowski and HP consultants planned the new IT infrastructure was continuity: the seamless availability of mission-critical applications and data, whenever Metro Health requires it.

Many businesses don’t think about IT hardware unless servers go down, but when servers go down at a healthcare provider, patient lives can be at risk. Metro Health needed to have the highest reliability, speed and fault tolerance in a trusted server environment.

“When you move from a paper-based organization to one that’s digital and electronic, everyone is relying on continuous availability – from people running the business end of the organization, to physicians providing moment-to-moment healthcare. It all has to be available without interruption. HP Integrity servers are ideal for our demanding healthcare environment,” Lewkowski notes.

HP servers and the virtualized environment not only help Metro Health save on space, but also provide the IT staff with the flexibility to meet changing demands while ensuring high availability. Integrity servers with Itanium 2 processors and HP-UX 11i provide Metro Health with balanced performance and continuous security protection to support the hospital’s critical health information management applications.

Metro Health operates two separate data centers. Both are active production environments, with mutual failover thanks to HP Serviceguard clustering software on Integrity servers. Virtualization and scale-out expansion will enable Metro Health to handle rapid growth smoothly and cost-effectively.

“Because everything we’re doing as a business and healthcare organization relies on the technology we implement, the infrastructure is constantly being tested,” Lewkowski says. “We’re seeing greater volumes all the time, and therefore increased expectations of

performance by the users. Solutions must be fast and reliable. We rely on this Integrity infrastructure for life-critical applications.”

SAN serves enterprise-wide storage needs

Metro Health also implemented a storage area network (SAN) based on the HP StorageWorks XP Disk Array platform to support the massive amounts of digital information it generates daily.

In the move to the new Metro Health Village, the organization will transition from an older storage subsystem with 3.5 terabytes of capacity to a pair of HP StorageWorks xp1024 storage arrays that offers nearly seven times that capacity. “The StorageWorks arrays give us both flexibility and capacity to grow, and manage our storage very efficiently,” says Lewkowski. Each of Metro Health’s two active data centers houses one xp1024 array, providing storage backup in case of failover. The arrays handle data for the integrated EPIC software suite, as well as Metro Health’s PACS system and other applications.

To implement the SAN, Metro Health is using Open Systems Technologies (OST) of Grand Rapids, an HP Gold Certified solutions provider and systems integrator whose consultants have earned HP Enterprise Storage and Server Elite (ESSE) Certification.

The role of OST illustrates another factor in Metro Health’s decision to standardize on HP. “The solution is much more than hardware. Other aspects of HP really sold us,” says Lewkowski. “HP, along with our HP channel partner, OST, really stepped up to the plate to deliver exactly what we needed. We weren’t looking for technology for technology’s sake. It was really a matter of finding who was most capable of helping us achieve the vision of our core clinical system strategies.”

HP Financial Services expands the possibilities

Early on, Lewkowski recognized that a carefully structured, strategic leasing program with HP Financial Services best met the organization’s business, financial and technological goals.

“Metro Health Village is an incredibly ambitious project, meaning that funding was required for many competing priorities,” he says. “By leasing we eliminated the need for capital dollars for our IT acquisition – a real plus.”

In addition, HPFS offers an automatic technology refresh cycle. “Leasing helps us stick to a plan of updating our equipment regularly,” Lewkowski adds. “We’ll refresh this whole infrastructure in about three years, so we know our technology will remain current.” That includes HP servers, PCs and networking equipment.

Looking ahead

Metro Health Village is ahead of schedule, and its new data center is expected to be operational in May of 2007. Lewkowski can hardly wait. He is confident that as Metro Health grows and adds additional physicians, the IT infrastructure will prove both flexible and easily expandable.

“We knew from the beginning that we would avoid being on the end of the information architecture growth curve. With HP Integrity servers and Itanium processors, we’re at the beginning of a life cycle and can grow with the technology.”

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Challenges:

- Consolidate, streamline and standardize IT infrastructure to improve availability server performance and utilization, raise service levels, and reduce IT costs.

Solution:

Primary hardware:

- 2 HP Integrity rx2620 Servers
- 4 HP Integrity rx4640 Servers
- 2 HP Integrity rx8620 Servers
- HP ProLiant BL server blades
- 2 HP StorageWorks Disk Array xp1024 (28 TB)
- Implementing HP bc1500 PC blades

Primary software:

- VMware ESX Server 2.5
- Windows running on HP ProLiant servers and HP-UX11i v2 operating system on Integrity servers
- HP Serviceguard running on HP Integrity servers
- HP Software – Virtual Machine integration
- HP ProLiant Essentials Rapid Deployment Pack (RDP) and Systems Insight Manager (SIM) for HP BladeSystem
- HP Identity Suite

HP Services:

- HP Critical System Support
- HP Financial Services

Results:

Approach:

In developing an all-new healthcare campus, Metro Health worked with HP to consolidate its IT infrastructure on HP Integrity servers with Intel Itanium 2 processors and HP ProLiant blade servers.

IT improvements:

- Developed a consistent infrastructure model
- Simplified management and real-time availability of electronic medical records
- Improved flexibility and availability
- Reduced application downtime

Business benefits:

- Reduced costs through consolidation
- Improved service levels to core patient processes
- IT and financing from a single source - HP/HPFS
- Reduced capital investment with programmed technology refresh

About Metro Health:

Formed in 1942 as Grand Rapids Osteopathic Hospital, Metro Health is a general acute care osteopathic hospital serving Kent and surrounding West Michigan counties. Affiliated with Michigan State University, the hospital remains a major osteopathic teaching hospital and specializes in primary and secondary care, offering a full range of services including most other services usually associated with a community hospital.

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over 1,500

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