

Aurora Health Care strengthens its vital signs with HP storage solutions



"We must have access to patient information 100 percent of the time, due to the critical nature of medical records. Our HP storage solution makes that possible for us."

– David Harrold, Lead Software Systems Engineer, Aurora Health Care

Business need:

Wisconsin-based Aurora Health Care originated around a single goal: Find better ways to provide better health care. As Aurora aims to offer the best service possible by improving its information management capabilities, the healthcare provider must also comply with the Health Insurance Portability and Accountability Act (HIPAA), accommodate storage-consuming patient records, and implement a comprehensive information lifecycle management strategy.

Solution overview:

Medical professionals at Aurora see information technology as an essential tool for improving the quality of patient care. To help them meet that goal, Aurora selected centralized clinical information solutions from an HP partner, Cerner Corporation – in conjunction with a total solution from HP, including an HP Next Generation OpenVMS AlphaServer GS1280 system, HP StorageWorks ESL E-Series Tape Library, HP StorageWorks Enterprise Virtual Array 5000 (EVA5000) systems, and backup applications. Aurora now stores, retrieves, archives, and backs up patient records quickly and easily using the new HP infrastructure.

Leveraging HP technology ensures a healthy ILM strategy

Aurora's growth as a not-for-profit health system began in 1984 with the affiliation of two Milwaukee hospitals, St. Luke's Medical Center and Good Samaritan Medical Center. Today, Aurora is the largest private employer in Wisconsin, with 25,000 employees, including an IT staff of 450. The healthcare provider serves 3.5 million patients, while operating 14 hospitals and 130 clinics.

As Aurora makes progress on the road to developing a more reliable and cost-effective information architecture, efficient information systems from HP contribute to its success. The well-integrated solution from HP provides a foundation for information lifecycle management (ILM) strategies, helps senior officers comply with HIPAA regulations, and mitigates risks associated with potential lawsuits. In particular, the virtualized HP StorageWorks solution, implemented by HP Services, improves Aurora's patient record system so that the organization can meet its goals of increasing uptime and reducing administrative costs.

Accurate data storage, retrieval, and backup are at the heart of Aurora's business strategy. Over the years, the organization shifted its patient information from paper to electronic records. The company now stores 2 TB of data in Oracle® databases, which underlie Cerner Millennium Health Information Management (HIM) applications. The Cerner backup applications work in harmony with HP StorageWorks systems to keep essential information always available to doctors, hospital staff, and other users.





"Given the critical nature of medical records, it's essential for us to back up and access our patient data," says Aurora's Lead Software Systems Engineer David Harrold. "If the production system crashed without a backup system, our hospitals and clinics would have to use paper records while we rebuilt the database from transaction logs."

Until recently, an older HP tape library met Aurora's backup requirements. However, after Aurora expanded its database, backups began to take up to 15 hours. That prompted Aurora to ask HP about an enterprise-level backup solution. "As our database grew and our legacy library became overworked, an HP StorageWorks E-Series Tape Library became very attractive," says Harrold. "It has 700 cartridge slots and can hold up to 24 tape drives. Previously, we had to eject and load 45 tapes per day to complete our backups, which took the operators an entire eight-hour shift. Now we complete backups in about a quarter of the time – with *much* less manual intervention. With the latest HP tape technology, we've significantly simplified our backup processes."

The new StorageWorks tape library not only frees IT staff to work on other proactive business plans, it also lets Harrold and his team perform backups more frequently and keep systems available continuously. "We used to back up our data only three times per week," Harrold says. "Now we can run backups nightly."

Technical Support Group Manager Lee Oettinger adds, "Before, starting a backup late could affect response times for our users, and we'd have to cancel the backup. The automated HP StorageWorks tape system solved this issue."

Meeting critical data-retention requirements

To meet the stringent HIPAA mandates, Aurora must keep patient data available and pristine, with backup versions always accessible. The HP StorageWorks EVA5000 houses the data and the ESL E-Series Library provides for the backup. "From the beginning, the StorageWorks ESL E-Series Library was easy to configure," says Harrold. "It was essentially a point-and-click operation."

Aurora also uses Cerner Millennium software to manage the backup cycle. "The backup process is based on HP OpenVMS volume shadowing, which puts extra shadow members into the production database," Harrold explains. "With the HP ESL E-Series Library, we back up data every day, seven days a week."

According to Oettinger, having reliable, complete backups saves several days of work replaying archive logs if systems fail. "Now a restore operation only takes a 10th of the time our old system needed," Oettinger maintains. "Data restoration is much more streamlined."

Aurora uses application-specific storage area networks (SANs) for its production environment. The ESL E-Series platform yields reliable, intelligent, SAN-ready tape automation with best-in-class drive and cartridge density, interoperability, and integrated manageability. Additionally, the ESL library's built-in Fibre Channel SAN intelligence shields random SAN traffic, which secures the data's integrity and increases performance.

For the Cerner HIM application, the SAN includes: the tape library, which currently stores 42 TB of data; four HP AlphaServer systems; and three EVA5000 systems. These systems can pool and allocate storage dynamically for

greater resource utilization. "We see the HP StorageWorks Enterprise Virtual Array 5000 as an integral component of our ILM and business continuity strategies," says Harrold. "The EVA5000 provides the redundancy, performance, scalability, and capacity we need in our mission-critical environment."

"Aurora is always looking toward the most current technology in the healthcare field. We are committed to HP technology in conjunction with HP partner Cerner Corporation, a leader in integrated healthcare systems."

– David Harrold, Lead Software Systems Engineer, Aurora Health Care

HP Services installed and tested the system. "The deployment was very smooth," Harrold adds. "The system runs flawlessly, so we haven't needed to call HP for support."

Harrold and his colleagues use HP OpenView Storage Management Appliance and HP StorageWorks Command View ESL software to centrally manage SAN resources from a GUI or web browser, simplifying maintenance and upgrade tasks. The HP SAN is fully integrated with the HP OpenView Storage Area Manager framework. Oettinger believes that the system has the potential to scale to match Aurora's projected growth and expanding database. "As Aurora expands, I am confident that we could backup a lot more data without causing problems to the surrounding IT environment," projects Oettinger.

The diagnosis from Aurora's senior managers is equally enthusiastic: The new HP system gives Aurora's IT infrastructure a clean bill of health. "We have a more stable environment, improved business continuity, better response time, and more reasonable backup windows," Harrold concludes. "Best of all, we have more flexibility, which makes our platform adaptable. We are very happy with our HP systems and the better healthcare services they enable."



About Aurora Health Care

Aurora Health Care (www.aurorahealthcare.org) is a leader in improving access to health care for the people of eastern Wisconsin. From Illinois' southern border to Michigan's upper peninsula, Aurora provides care at sites in more than 80 communities.

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Challenges

- Streamline cumbersome backup processes for patient records
- Ensure compliance with federal and state guidelines
- Improve ILM strategies
- Reduce manual labor, freeing IT staff for more valuable tasks
- Deploy technology that can scale to match rapid corporate growth

Solution

Hardware

- 3 HP StorageWorks Enterprise Virtual Array 5000 (EVA5000) systems
- 4 HP AlphaServer GS1280 computers
- HP OpenView Storage Management Appliance
- HP StorageWorks ESL model 712e Tape Library
- HP StorageWorks E-Series LTO Ultrium cartridges

Software

- HP OpenView Storage Management Appliance software
- HP StorageWorks Command View ESL
- HP OpenVMS V7.3-2
- HP OpenVMS volume shadowing
- Cerner Millennium Health Information Management Solution
- Oracle Database 8.1.7.4

HP Services

- Consulting and integration
- Implementation
- HP Care Pack services – 24x7, 4-hour response (Proactive-24)

Results

- The HP solution helps Aurora comply with U.S. government and industry regulations concerning patient records – including HIPAA – and provides a solid framework for future ILM policies.
- The HP StorageWorks Solution – including ESL E-Series Library, EVA5000 systems, and AlphaServer systems – provides scalability, superior business-continuity capabilities, comprehensive scalability, improved utilization, and solid security.
- The new HP architecture reduces time required to perform database backups from 15 to 4 hours.
- Faster backups eliminate slowdowns on Aurora's live production environment and free IT personnel to focus on other tasks.

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