



ActiveBatch® Workload Automation & Job Scheduling *Case Study*

Company:

Children's Hospital &
Medical Center of Omaha

Children's Hospital & Medical Center Prescribes ActiveBatch,
Sees Significant Improvement in BI/Data Warehouse Effectiveness



About the Company

Company:	Children's Hospital & Medical Center of Omaha
Industry:	Healthcare
Installation:	Omaha, Nebraska, United States
ASCI Product:	ActiveBatch® Workload Automation & Job Scheduling

Brief Company Overview:

Children's Hospital & Medical Center of Omaha is the only full-service pediatric specialty healthcare center in Nebraska.

Families from across a five-state region and beyond seek the experience and expertise of Children's. They provide care to more than 350,000 children each year.



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Case Study Highlights

- ✓ Multiple Database Job Schedulers Eliminated
- ✓ Support for Cross-Platform Database and Operating Systems
- ✓ Event-Based Job Triggers Give Workers Up-to-Date Data Faster
- ✓ Single Platform Simplifies Troubleshooting and Reduces Job Failures

The Role of Business Intelligence and Reducing Manual Operations

Like blood flowing through a person's veins, data courses through the corridors and treatment rooms of Children's Hospital & Medical Center of Omaha, Nebraska. As the only full-service pediatric specialty health care center in Nebraska, Children's serves a five-state area and handles over 350,000 patient visits every year. This high patient load generates a massive amount of information; it is the job of the IT staff at Children's to not only get that data where it needs to go, but also make it usable to hundreds of different workers throughout the facility.

Of all the IT systems at Children's Hospital & Medical Center, however, the one that has perhaps undergone the most change over the past two years is the Business Intelligence (BI) platform. "There was a time when only a few back-office team members were involved with BI. Not anymore," said Wendy Worthing, Director of IT Operations for the hospital. "Everyone from Finance, Access, Infection Control and even C-level executives, have begun using our Business Intelligence application to analyze, plan and report on various aspects of the hospital's performance."

As the hospital's BI needs have grown, so has the need to extract and manage information from various sources. Children's employs a number of mission-critical enterprise applications: Eclipsys' Sunrise Clinical Manager, EpicCare Ambulatory EMR (Emergency Medical Records), and Lawson Software's full BPM (Business Process Management) suite, to name just a few. Data from each of these, in various combinations, is fed into several data marts for use by the hospital's two primary BI applications, Crystal Reports and QlikTech's QlikView.

Prior to using ActiveBatch, most of the hospital's data extraction, transformation and loading tasks were accomplished through a combination of manual operations and internally-generated scripts. Basic job scheduling tools from several sources were used by the hospital's data administrators. Cron was in use on a Linux system; SQL Server and Cache', two database management applications, provided other functionality, as did Microsoft Windows. Each had its limitations, however, and none could handle the complex, multi-platform tasks required by QlikTech and Crystal Reports. A better alternative was needed.

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Finding a Solution That Centrally Manages Disparate Platforms & Workflows

After looking at various dedicated job scheduling applications, the Children's IT team selected ActiveBatch Workload Automation from Advanced Systems Concepts, to unify and manage its wide range of data warehousing and report delivery. According to Worthing, a key factor was ActiveBatch's ability to interface with a wide range of operating platforms, databases and applications.

"While most of our packages run on Windows, UNIX and Linux are also used a lot," she said. "We realized ActiveBatch would integrate with all these platforms, allowing us to handle all our workflows—including non BI-related tasks—through one source."

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Jeff Spilinek, the hospital's ETL Architect, said that ActiveBatch's advantages were quickly felt. "Using Cron, for example, we would extract data periodically on a Linux-based FTP server and send it to a staging box which ran on Windows. There the data would sit until it could be sent to the appropriate data mart. Everything was based on time or date. If we wanted to create an event-based trigger, we would have to write a script for it."



Further complicating the situation was the inability to institute automatic restarts if a job failed. "One failed task would create a domino effect among other jobs. Since there was no central monitoring capability, we wouldn't know until later that there was a problem—and then we would have to follow the breadcrumbs to identify the failure point," says Spilinek.

By contrast, ActiveBatch can both eliminate latency between jobs, and assure that jobs will run as scheduled. "Scheduling by time or date has its limitations. A job may take one hour one day and 20 minutes on another—yet we would have to schedule a 'worst-case scenario' each time," he stated. "With event triggers we can totally remove downtime and get data to our users as soon as it's ready." Email and pager alerts—both a part of ActiveBatch—keep him and his colleagues apprised of failed jobs. If necessary, they can restart jobs manually through either messaging system to keep workflows underway.

ActiveBatch's event automation architecture, which allows users to execute and manage multi-job workflows based on IT events, such as a file constraint or a file being received, has proved particularly useful. Numerous ETL processes Spilinek has automated within ActiveBatch leverage these capabilities to ensure reports aren't run until feeder systems are fully updated.

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For example, for the hospital's Health Information Management (HIM) department, Spilinek has automated a process that executes a Talend ETL job, downloads a report and builds a multi-tab Excel spreadsheet that saves the HIM staff over 50 hours a year developing these daily reports manually. Spilinek uses file constraints within ActiveBatch to ensure all feeder systems are updated before the Talend ETL job is run, ensuring the Excel reports are accurate and up-to-date. "That saves me time because I don't get calls anymore saying you sent me yesterday's report again," Spilinek says.

Spilinek has taken a similar approach for an ETL process that provides the patient accounting department with a "closing of the books" report at the end of each month. Prior to ActiveBatch, the report had to run manually by uploading a large file into an Access database, slowly diminishing database performance over time. Spilinek developed a file directory with an ActiveBatch file-based trigger tied to it. Anytime the accounting department drops a new file into the directory, it triggers the process within ActiveBatch, providing the accounting department with a level of "self-service automation" to run reports whenever they require, all without the intervention of IT.

Finally, the ActiveBatch Integrated Jobs Library has delivered value where scripting had previously cost time. Spilinek makes use of the production-ready Job Steps for SQL Server to replace scripts that delivered reports from EpicCare EMR. Additionally, Spilinek leverages ActiveBatch's secure file protocol Job Step for FTP/SFTP/FTPS to build workflows that automate over 40 different file transfer processes with more than 40 third-party vendors. "We have yet to find a vendor that uses some sort of a secure file transfer method that ActiveBatch doesn't support."

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Reliability, Flexibility & Scheduling Power

Since moving to ActiveBatch, Children's Hospital & Medical Center's database team has discovered the power of taking a central approach to IT automation. "Job queues, for example, don't have to be static," Worthing points out. "We may have 12 jobs scheduled in ActiveBatch and, depending on the situation, we might run four at a time, saving another four for later and perhaps the remaining four at 3AM. That kind of throttling capability conserves resources—in the past, such a capability would have required a lot of manual scripting."

And less scripting means accomplishing more with the same IT headcount while reducing the costs of outsourcing script development to third-party outsourcers, Worthing says. "It saves us both time and third-party costs in script development."

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Automating and replacing the distribution of paper reports with electronic file distribution has led to other savings as well. Previously, departments throughout the hospital received 2-ring reports from the in-house hospital patient system every day. "They would literally pull the last page of the report with the summary and totals and throw the rest away," Spilinek says. "We've used ActiveBatch to automate the delivery, in an email, with the totals from the last page or save the report to a network location. No more printer jams and boxes upon boxes of saved reports because everything is stored electronically to network locations."

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By combining the work of four or five schedulers into one unified application, data mart management is much less of a hands-on responsibility. "Failures don't require a 'dive-in' anymore," Spilinek says. "When there's a problem—a much less frequent occurrence these days—we can quickly ascertain the cause and correct it."

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Worthing points to how ActiveBatch has helped her IT staff keep up with the growing database demands of a large, progressive medical center. "ActiveBatch's reliability, flexibility and scheduling power has turned around our delivery methodology, allowing our people to focus on higher level tasks."



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