



Seattle Public Schools

» Automation reduces IT costs, freeing up funding for programs that strengthen schools and improve student success

BEFORE

- » Budget shortfalls mandated cost cutting in administrative areas to free up funds for programs related to student success
- » Manual running of batch jobs was costly, inefficient and error prone
- » No early warning of problems sometimes meant delays in batch processing, interfering with availability of critical systems

AFTER

- » Automation of job scheduling immediately delivered \$100,000 in savings by reducing staff requirements by 2 FTEs
- » Error reduction and productivity increases expected to save \$18,000 annually in first two years and \$38,000 annually in subsequent years
- » Staff receive alerts when potential problems are detected, enabling early response to prevent service disruptions



GEOGRAPHY

Seattle, Washington

INDUSTRY

Education

SOLUTIONS

BMC Control-M

BMC Batch Impact Manager

At Seattle Public Schools (SPS), the focus is on excellence. Excellence for All, the district's five-year strategic plan that was initiated in 2008 is already yielding improvements in student achievement levels. Despite turbulent economic times and major budget shortfalls, SPS is making significant progress toward its long-term goals.

To offset the impact of budget reductions, the district has launched a number of cost-cutting initiatives. Combined, these initiatives are saving millions of dollars each year. As a result, more resources are available for programs that strengthen the schools and improve student success.

One such initiative is the replacement of outdated VAX computers with state-of-the-art systems and the addition of automated tools and processes that streamline operations and increase staff productivity. The automation of batch scheduling is one initiative that is already yielding cost savings. The Department of Technology Services implemented BMC Control-M and BMC Batch Impact Manager to facilitate scheduling throughout the decommissioning of the VAX computers and to position the district for a lights-out data center operation that will keep IT costs in check during the years ahead.

"This initiative is about much more than simply replacing outdated systems," Jim Ratchford, chief information officer at SPS said. "It's about professionalizing the way we provide IT services. This particular project exemplifies what we are trying to do. Through technology, we're providing increased reliability, better service to the organization and greater value for the investment."

Funding for this and other cost-cutting initiatives is provided by a voter-approved levy covering a broad range of needs, including repairs and upgrades to roofs, life safety and mechanical systems, science and computer facilities, and technology systems and equipment that support teaching and learning.

IDENTIFYING THE OPTIMUM SOLUTION

SPS relies on batch processing for vital business tasks such as enrolling students, assigning classes, tracking attendance, grading, scheduling and routing transportation, and extending access to library, computing and other resources. In the past, the district's VAX computers acted as the hub for all batch jobs. Running the jobs was a manual process that required significant intervention on the part of the scheduling staff.

"We had been a six-day-a-week scheduling shop," April Johnson, senior engineer and project manager at SPS said. "But last year we had to reduce headcount as a result of budget shortfalls. We eliminated one FTE [full time equivalent]. As a result, we had to shut down the swing and graveyard shifts and eliminate much of the weekend processing."

The possibility of additional staff reductions in the future made automation essential. Key criteria for a new scheduling solution included cross-platform operation and the ability to support processing based not only on date and time, but also on event and transaction. Of particular importance was the ability to run on the VAX systems throughout the decommissioning effort.

"BMC Control-M was the only solution that provided all the functionality we needed, plus support for scheduling on the VAX without modification to any VAX jobs," Johnson said. "Other solutions we looked at would have required us to make significant changes to VAX jobs. They also would have required us to upgrade the VAX to a newer version. That would have cost money, plus it could have introduced instability into the environment which would have made the migration to the new systems more difficult."

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JIM RATCHFORD
CHIEF INFORMATION OFFICER

To assist with implementation, SPS engaged CFS Consulting, a BMC Premier Partner with an extensive track record of success in implementing workload and job scheduling solutions. "The CFS consultant did a delightful job not only of getting us up to speed so we could maintain the schedule ourselves, but also in helping us leverage key features of BMC Control-M," Johnson said. "The fact that he also understood VAX/VMS was a huge benefit because he was able to help us avoid making modifications to the original code."

AUTOMATED SCHEDULING DELIVERS TANGIBLE BENEFITS

BMC Control-M began delivering benefits immediately. First and foremost, it eliminated the human error that is inherent in manual processes. "If someone accidentally runs a job out of order, data can be corrupted and other jobs delayed," Johnson explained. "With BMC Control-M, the jobs consistently run according to the schedule, so we don't have to deal with problems introduced by human error."

Additionally, BMC Control-M has allowed the scheduling staff to couple events more closely to speed up completion of nightly batch processing. For example, in the past the staff had to hard-code start times for certain jobs based on dependencies. If Job B couldn't run before Job A was finished, the staff might schedule Job B to start two hours after the start time for Job A, even if Job A typically took only one hour to run. That extra time allowed for problems that might delay the completion of Job A.

That type of workaround is no longer necessary because BMC Control-M tracks dependencies among jobs and adjusts the schedule accordingly. Now, when Job A completes, BMC Control-M starts Job B immediately.

"BMC Control-M lets us complete the entire process faster because we no longer have artificial wait points," Johnson said. "It has compressed the entire schedule, so we can run more jobs and bigger jobs in the same amount of time. In the past, when we had a large number of students to enroll, we would have to stage the enrollments in small groups across multiple nights. Now we can get the enrollments completed in a shorter window of time. That benefits everyone."

Because jobs are automated, batch processes now run throughout the weekend. As a result, despite the cuts in staff, the batch schedule runs seven days a week. This ability is particularly helpful during peak times — such as the beginning of the school year, semester end and state reporting periods — that increase the amount of batch processing that needs to occur.

With the help of BMC Control-M, the department has reduced scheduling staff requirements by two FTEs, which saves approximately \$100,000 a year in labor costs. Should additional cuts be required, the staff can continue to meet batch scheduling requirements because of the high level of automation, the elimination of errors and increased productivity. The staff estimates that error reduction and productivity increases will result in \$18,000 in savings during the first two years after implementation and \$38,000 annually in subsequent years.

ALERTING ENABLES PROACTIVE RESPONSE

While BMC Control-M is enabling SPS to streamline and automate scheduling, BMC Batch Impact Manager is allowing the staff to be proactive in responding to issues that could delay batch processing. This advanced solution tracks the status of all jobs in critical batch processes and notifies the staff of impending problems.

According to Johnson, the complex batch schedule encompasses many interrelated pieces. The migration of a new student throughout the system, for example, involves approximately 70 steps. The steps must be coordinated across multiple systems so that the right data is delivered to each system in the right order, everything is backed up and all steps are completed in time to bring up online systems in the morning.

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APRIL JOHNSON
SENIOR ENGINEER/PROJECT MANAGER

"When one part of the schedule slips, it directly affects the rest of the schedule." Johnson said. "In the past, when we had a problem, we would have to suspend the entire schedule. All systems would stay down until we found the cause of the problem. BMC Batch Impact Manager tells us if a problem is coming so we can suspend parts of the system and do mitigations instead of stopping everything. It's an early warning system that lets us intervene in time to complete all the jobs within the batch window."

CUSTOMER'S FINAL WORDS

According to Ratchford, a major contributor to the success of the BMC solutions is the partnership between SPS, BMC and CFS Consulting. "A partnership is more than a sale," he concluded. "There are a lot of great products out there, but a successful technology implementation is the result of good products backed by service, support and the integrity of the company that creates and sells the solutions. BMC didn't lead with the idea that they had a product to sell us. The model was one of listening to our problems and working to find a way to solve them. As a result, we developed a true partnership based on trust. I place great value on that relationship."

ABOUT SEATTLE PUBLIC SCHOOLS

Seattle Public Schools is the largest K-12 school system in the state of Washington, serving more than 46,000 students in 88 schools. The school system is committed to providing an excellent education for every student. The system offers rigorous learning opportunities enhanced by strong support from families, volunteers and community partners.

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