ActiveBatch®

Customer IT Automation Success Story

Amec Engineers a New Automation Strategy for Dynamics AX, SQL Server and More

Company: Amec Foster Wheeler E&C Services
Industry: Environmental Consultancy and Engineering
Customer Site: Knutsford, Cheshire, United Kingdom

Brief Company Overview:
Amec is one of the world's leading engineering, project management and consultancy companies. Amec delivers profitable, safe and sustainable projects and services for customers in the oil and gas, mining, clean energy, environment and infrastructure markets, including sectors that play a vital role in the global and national economies and in people's everyday lives.

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- Consolidate multiple automation tools; gain a 360° view
- Automate processes that integrate Microsoft Dynamics AX with other systems
- No per-user licensing enhances overall scalability
- Automate build and release processes and increase productivity

A Disparate Collection of "Point" Scheduling Tools

As one of the leading engineering, consulting, and project management service companies in the world, Amec's ERP solution sits at a critical junction of business data as an application that manages key timekeeping, project management, and accounting data for a company that employs thousands of consultants worldwide. Driven by the real-time demands of the business, the ability of Amec's IT organization to automate and streamline the passing of data has grown increasingly important. It was for this reason and others that Amec identified the need to consolidate multiple scheduling tools into a single automation platform for the scheduling and execution of critical batch processes.

For Stephen Marchetti, Integration Architect at Amec, using a disparate collection of "point" scheduling tools, including Windows Task Scheduler, SQL Server Agent, and Oracle Stored Procedures, reached a tipping a point in 2009 and launched a project to identify an enterprise job scheduling solution. "We needed to consolidate," Marchetti says, "and gain all the operational advantages associated with having a single, enterprise-wide view of our batch processes."

Amec went to market to evaluate a series of workload automation solutions, including IBM Tivoli, Cisco Tidal, and Allen Systems Group (ASG) Zena. ActiveBatch was the value-added choice over the competitive offerings, primarily driven by its ease of use, ease of installation/upgrade and by the fact that Advanced Systems Concepts offered a more competitive licensing model compared to annual per-job or per-CPU pricing.

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Extensibility & Scalability

ActiveBatch was deployed in the autumn of 2009, and has since been rolled out to 15 developers while another 10 on the IT operations side access ActiveBatch for workload monitoring purposes. Marchetti says the extensibility of ActiveBatch from an end-user perspective was made possible since there is no per-user licensing for the software client.

For those 15 developers, building and managing workflows within ActiveBatch's Integrated Jobs Library has proven its advantages in simplifying the building of jobs over the collection of platform-specific scheduling tools that were previously used.

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For example, prior to ActiveBatch, Marchetti relied heavily on SQL Server Agent to schedule SSIS tasks, a critical component of Amec's data integration and warehousing initiatives. He has since converted to using the SSIS Job Step within the Integrated Jobs Library, which makes it easier to manage the configuration information passed into the SSIS packages. The IT department stores the configuration information in an XML file that is used to populate job variables within the SSIS Job Step. Those variables are passed along to the SSIS packages as required. "The ActiveBatch Job Step makes it much easier to manage these configurations than the built-in SSIS configuration mechanism, which is problematic to say the least," Marchetti says.

## Why Use Dynamics AX Utilities When You Can Drag-and-Drop?

One year after implementing ActiveBatch, Amec launched a project to consolidate the company's internal accounting, HR, project management, etc., into a single ERP system: Microsoft Dynamics AX. This would require integrating Dynamics AX with the company's existing business applications and processes via the automation of various batch processes, but Dynamics AX native scheduling was too limited. Rather than using another disparate scheduling tool, the decision was made to automate Dynamics AX with ActiveBatch.

To automate Dynamics AX, Amec licensed the ActiveBatch Extension for Dynamics AX, which adds a series of production-ready Dynamics AX Job Steps to the Integrated Jobs Library. Amec leverages the Dynamics AX Extension for two primary reasons.

The first is to automate a series of batch processes that integrate Dynamics AX with a multitude of other systems, including Amec's data warehouse, the company's imaging system that is used to collect scanned invoices, a series of transactional and payment processes that involve passing data to and from Dynamics AX, and other core business applications.

To automate these processes, which include loading daily exchange rates from a third-party data source, passing payroll data between applications, and uploading project management and consulting transactions into project management systems, Marchetti makes use of the *Run-BatchJob* and *GetBatchJobStatus* within the Dynamics AX Extension.

ActiveBatch Integrated Jobs Library Job Steps for Microsoft Dynamics AX
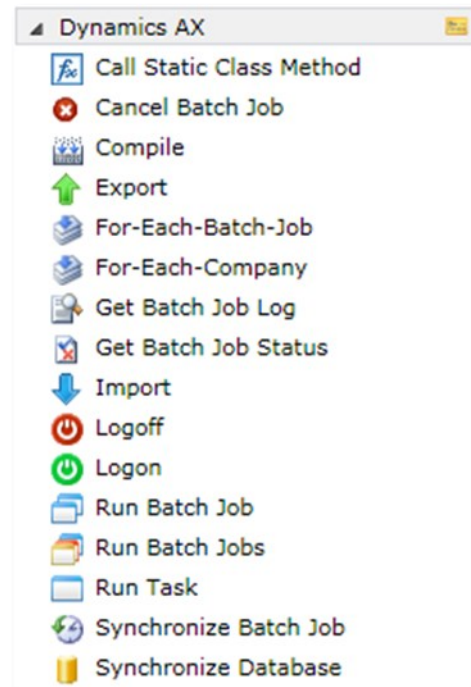
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Enhancing Dynamics AX with Event Automation

To dynamically manage the Dynamics AX Jobs, Marchetti uses ActiveBatch's event automation architecture, which allows those jobs to be triggered and managed based on IT or business events. For example, the ActiveBatch workflow that integrates the imaging system with Dynamics AX takes the scanned invoices, which are uploaded to a network folder, and automatically uploads them into the Accounts Payable module of Dynamics AX for processing. Other processes are triggered on file triggers, such as receiving a through file, or on-demand by exposing a web service that is triggered by a user via selection of a menu item within Dynamics AX.

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The other half of the Dynamics AX implementation involves the automation of various build and release processes that update DEV, QA, and PROD environments. Marchetti leverages a series of other Job Steps within the Dynamics AX Extension, such as *Compile*, *Import*, *Export* and *Synchronize Database*, to automate these software customization processes. Marchetti is able to designate fields such as the database name, Dynamics AX Model type, or Application Object Server from auto-populating dropdown menus and pass variables between Job Steps within the workflow, dramatically simplifying the update process between Production and Development environ-

ments. "For example, we've built a data refresh process within ActiveBatch that automatically takes production code and installs it into another targeted environment to ensure developers are working with the latest build," Marchetti says.

The Benefits

These production-ready Job Steps have eliminated the heavy lifting associated with writing command line utilities. For example, the Import Job Step replaced eight separate utilities. "We took that entire plan and replaced it with one drag-and-drop Job Step," Marchetti says. "The problem with using utilities such as Import, Compile, and Database Synchronize is they're very difficult to manage and get results back from. It's not just run it and read a log file to view the results; it's much more complex than that. With ActiveBatch, we've replaced all that complexity and made the execution of these utilities far more reliable as well."

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Overall, the consolidation of multiple scheduling solutions has since provided the IT department with a single automation solution and all the operational benefits that come from having a central point of control and monitoring. Marchetti says reliability and workload completion rates have improved significantly by no longer relying on less reliable tools such as Task Scheduler, SQL Server Agent, or custom scripts, and by being able to schedule workloads around datacenter maintenance windows. "Unifying a disparate collection of scheduling means we don't forget to reschedule a Windows Task Scheduler job on a remote machine that gets taken down for an OS patch," Marchetti says. "This was a big problem prior to ActiveBatch."

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And when there is a problem, ActiveBatch's alerts and notifications provide Marchetti and the IT team with an immediate email notification as opposed to waiting to find out the job has failed after the fact. "We can deal with the problem in real-time, fix it, and have the job successfully complete on time as opposed to letting it sit around in a failed state," Marchetti says. For example, ActiveBatch's runtime monitoring capability, which allows ActiveBatch to proactively monitor a job's progress and terminate that job if it is running longer than expected or based against historical average runtimes for that job, means Marchetti can proactively troubleshoot issues. "I'll receive notifications on a job's progress and if it's running over its expected runtime, and if it is, I'll troubleshoot any potential issues to ensure it runs successfully."

Completion Rates Reach 99.8%

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Overall, since implementing ActiveBatch Marchetti says he's seen job completion rates improve to 99.8%. "That's the advantage associated with consolidating multiple automation tools into a single solution," Marchetti says. "It provides us with that 360-degree view of our scheduling and simplifies the management and monitoring of all the individual processes that comprise it."

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