Evolution of Workload Automation

The landscape for operations and development is becoming increasingly dynamic and the burdens placed on IT professionals are only set to increase. Over the last few years, with the upheaval brought on by the pandemic and the impact on the global workforce, the pace of change and the stresses placed on IT operations and developments teams to respond has accelerated further. It's estimated that most businesses have experienced decades worth of digital transformation and change initiatives in an 18-month span. That is a lot for any one business to handle.

When coupled with the pace of digital transformation driven by the need to modernize infrastructure – whether that is new hardware or software – improved processes are required to make changes both safely and securely.

Against this backdrop, the role of batch processing continues to play a vital role and is as important to the business as online transaction processing, with batch jobs performing critical database updates that enable online transactions. This highlights that the ability to handle batch scheduling process, to evolve it and to have it adapt to wider business demands is key for many large enterprises. To ensure smooth execution of the overall batch process that underpins mission critical applications, an increasingly vital component is the development of checked, error-free Job Control Language (JCL).

As organizations turn to batch scheduling and automation they can be faced with a multitude of challenges. Let's take a look at some of those challenges and the technologies that could be a solution.

Batch Scheduling Automation and DevOps Challenges

In this section, we'll cover what Futurum Research see as the common challenges that organizations face in programming batch scheduling which include:

Maintaining coding standards at an enterprise level. Organizations are tasked with ensuring that JCL standards are maintained across a DevOps team that is increasingly based remotely and has higher levels of staff attrition than has previously been the norm. As such, many are struggling to ensure JCL syntax is error-free at scale both at a developer and an enterprise-level.

Managing the integration of JCL with the overall DevOps landscape. Increasingly the batch schedule is no longer an island in the DevOps landscape. Large enterprises are more connected and application silos are collapsing to better serve the business needs. With this in mind, the development of JCL needs to better align with overall DevOps processes tools and approaches – a process that can be tricky.

Integrating JCL checking technologies with the likes of other technologies to deliver enhanced DevOps processes. The landscape for JCL checking has changed dramatically over the last 5 years as open source has taken hold in the wider IT infrastructure, including the mainframe. As little as 5 years ago, open-source approaches such as Zowe™ would have been unprecedented on the mainframe bringing unique challenges to teams that have operated within established processes and frameworks for decades. When coupled with enterprise-wide automation toolsets such as Red Hat®Ansible® the pressures on DevOps to adapt are ever-increasing.

Finding the right talent with the right skillsets. The onset of the Covid-19 pandemic brought skills into sharper focus for many organizations. As teams moved to remote operations and skills shortages placed pressure on DevOps team, organizations had to ensure that key business approaches not only maintained but enhanced more rapidly and with fewer errors.

Meeting business SLA commitments. Against macroeconomic headwinds and increased digital transformation, the need to ensure operations continue to operate 24 hours a day, seven days a week, 365 days a year, remains paramount. Customer expectations remain for near faultless operations meaning that the bar remains high for DevOps teams as they look to modernize IT infrastructure.

Today, media and entertainment companies need to recognize that they are serving an audience of one—not just one household, but one single person at a time. Each individual audience expects fully personalized content and streaming experiences that are easy, available 24/7, and seamless across all platforms—TV, mobile, and computer. It's a huge challenge, but luckily, there are tools available to meet it.

Addressing the Client Need

There's no doubt that the ever-changing DevOps and IT landscape have presented new client needs. When we zoom in on the role of JCL checkers in the overall DevOps landscape we are seeing 3 key themes emerging:

1. The need to adopt 'shift left' approaches to finding and correcting errors earlier in the process
2. The ever-present need to ensure business SLA commitments are met
3. Improve time to value for modernization efforts

These three client needs are increasingly interconnected and present unique challenges for DevOps teams that were not previously the case.

IBM's Value Proposition

These challenges and emerging requirements led us at Futurum Research to evaluate the overall batch scheduling and programming market. We believe that IBM's JCL Expert meets the many key criteria emerging for IT executives looking to make decisions to optimize their IT infrastructure. Particularly those organizations looking to overcome the complexity of managing JCL at enterprise scale and where enterprise batch schedules can have hundreds of thousands of jobs that are mission-critical.

After reviewing IBM's JCL Expert, we've identified the following as key benefits that would address the client need:

Wider integration with Zowe™ and Red Hat®Ansible®. Mainframe development is no longer an island, integrations into Open Source toolchains and processes are vital. Integration with Zowe and Ansible are therefore paramount.

Integration with the wider DevOps pipeline landscape. Developers need to be able to do their job and code, rather than worry about the target platform, therefore the ability to remove friction and empower developers is a primary concern when evaluating tools.

Ability to scale and ensure enterprise standards are maintained. With batch schedules reaching thousands of jobs the need for a JCL checking tool to scale accordingly is a vital concern. When you couple this with ensuring standards are maintained Futurum research believes tooling requirements in this space are critical.

Faster delivery of new product/features to be competitive. The speed of business innovation and transformation is breakneck, developer tools need to keep pace and not get in the way of the need for enhanced developer productivity.

Meeting business SLA commitments by reducing errors and delays in processing. Businesses are increasingly 'online' and always on, the concept of batch has been replaced with real-time batch and tools need to be able to accommodate this dynamic.

Improve staff JCL skill levels. As the fight for talents impacts DevOps teams and their ability to hire/train/retain talent the tools the teams use must operate in conjunction with the staff evolution landscape.

Conclusions and Recommendations

As Futurum Research evaluates the overall DevOps landscape the role of batch scheduling, and in particular JCL checking is oftentimes overlooked. We believe that organizations looking to accelerate mainframe transformation, ensure business SLA's and react to ever-changing business requirements cannot overlook JCL development. We advocate for a holistic approach to JCL checking that ensures wider integration with wider development approaches such as Ansible on a wider IT infrastructure perspective and approaches such as Zowe from a mainframe perspective. As organizations consider how to evolve their DevOps toolchains and approaches, we feel closer consideration of JCL checking technology is warranted.