IT Central Station
Unbiased reviews from the tech community

Selecting a Workload Automation Tool: Real Users Weigh In

BASED ON ACTUAL USER EXPERIENCES AND OPINIONS

IT Central Station: Reviews of IT Products From Real Users

Abstract

Workload automation is a very established category in IT. Setting up tasks to run automatically has been done for decades in computing. However, change is constant so there are always new opportunities to improve processes, IT staff productivity and operational efficiency. This paper reviews some of the selection criteria for the new generation of workload automation tools as expressed by IT professionals on IT Central Station. Based on their real life experiences, these users describe what they depend on and look for to get the most advantage from workload automation tools.

Contents

Introduction 1

A Brief Overview of Workload Automation 1

Workload Automation Challenges 2

Selection Criteria for Worklad Automation Tools 3

- Ease of Use and Training 3
- Stability 3
- Scalability 4
- Flexibility and Scripting 5
- Working Across Environments 5
- Flexibile Architecture 6
- Security and Compliance 6
- Self-Healing 6
- Reporting, Alerting and SLA Monitoring 6

Conclusion 7

Introduction

The scheduling of jobs is among the oldest tasks in the history of computing. From stacking punch cards in a “glass room” to using command line code on a green screen to tee up VMS batches on a VAX, what we now call “workload automation” is certainly not a new phenomenon. Yet, like so many areas of IT, little ever stands still with workload automation. Today’s workload automation challenges include managing hundreds (if not thousands) of jobs across multiple platform types and geographies.

As IT grows more complex, the pressure is on to make workload automation more efficient. Getting workload automation right involves organizational factors, processes and tools. This paper focuses on the tools. It explores how IT professionals choose the right workload automation tools to meet the evolving needs of their organizations. Based on reviews from users of workload automation tools published on IT Central Station, the paper focuses on ease of use, stability, scalability, integration, adaptability and scripting/non-scripting capabilities.

A Brief Overview of Workload Automation

Workload automation involves the orchestration and automation of business applications that are paramount in delivering mission-essential services for your organization. These include critical production and system maintenance processes, deployment and updating of software applications, batch processing of large data sets and so forth. Workload Automation enables organizations to scale to navigate market shifts quickly, confidently deliver on SLAs and save on operating expense (OPEX). It is given the responsibility to arrange and manage the integration of traditional IT processing across different operating system platforms in real-time.

Modern job schedulers, i.e. Workload Automation tools, deliver a graphical user interface with a single point of control for defining and monitoring distributed computer networks and background executions. Capabilities typically include helping define workflows and dependencies, automatic submission of executions, monitoring of executions, reporting on executions and errors in executions, and job priority setting and queuing.

Workload Automation Challenges

The management of automated workloads has been constantly evolving for decades. The pace of change, however, has accelerated. IT managers are facing a number of new challenges that they must address with improved tools. These include the following:

Keeping up with a growing number of jobs. The pure volume of workloads has grown over time, fed by increased volumes of data, faster software development cycles, the adoption of more diverse platform types and mergers and acquisitions that place more systems under IT department control.

Working across a changing enterprise architecture. Organizations today contain even more intricate mixes of legacy, cloud and distributed systems. While multiple generations of mainframe, client/server, and hybrid cloud workloads may operate on their own, they need to coexist with a wide range of modern platforms and device types.

Staying on top of increasingly complex workloads. The jobs themselves seem to be getting more complicated, too. Workloads that need to be managed in real time are growing more involved, heterogeneous, and volatile.

Balancing self-service with security and compliance policies. It is preferable if people across the organization can schedule automated jobs via role-based views and self-service request management. Combined with workload analysis, a self-service approach can improve the productivity of individual developers, business analysts, and IT staff. However, the practice needs to be aware of security and compliance policies. If something goes wrong, administrators will want to know who did what, when and how.

Adhering to Service Level Agreements (SLAs). The workload automation team is typically bound by SLAs. Dependencies of individual jobs on one another and their collective impact on service delivery can affect overall performance and have crucial business impacts. As workloads and architectures grow more complex, SLA management can be a challenge.

Retaining knowledge and personnel. Workload automation can be highly specialized, especially when it involves older systems. It can be challenging to retain organizational knowledge along with the people who know how to use it. Automating workloads can help lower overall cost of operations by enabling IT and business generalists to do work that formerly required specialists and custom scripts/code.

Selection Criteria for Workload Automation Tools

It takes the right tools to address today's workload automation challenges. IT Central Station features reviews of workload automation tools by real users. These reviews highlight the selection criteria that IT professionals articulate for workload automation tools.

Certain criteria fall into the "must have" category. These include features like a single "command center" for all job workflows, a comprehensive SDK, dashboards and smart notifications. Workload automation tools also need to be business-focused, according to expert users. While workloads may tap into deep technology, they affect the day-to-day operations of business-facing systems. The best workload automation tools enable IT managers to be aware of job scheduling's impact on business.

Ease of Use and Training

The pressure to help team members get more done results in an emphasis on ease of use and training for workload automation tools. According to a Batch Scheduling Specialist at a large insurance company, one of the most valuable features of his workload automation tool was its, "Ease of using the scheduling feature of [the solution]." He added, "It streamlined our scheduling and cut down our overall run time."

A Senior Associate at a financial services firm with 1000+ employees explained that, to him, the most valuable feature is the ease of coding up schedules to run jobs in both the mainframe and distributed environments. A Mainframe System Administrator II at a financial services firm with 1000+ employees praised his workload automation tools, "Ease of use, and the use of scheduling. Our company processes approximately 200,000 jobs a day through this product."

Training is essential for best results, according to a Senior Systems Engineer at a large consultancy. He noted, "One piece of advice I can give is training. You need to have some sort of a background in this in order to use this product effectively. If you're not trained up, you're not going to be successful with it." A Sr. Analyst/Technology Infrastructure at a utility added, "I'm old-school, I learned it the old way. I actually want to go back and implement and start doing things the new way. As I need to train people, it's going to make them easier for them and just make the learning curve much shorter."

Stability

Workload automation tools need to run 24 hours a day, 7 days a week, every day of the year. For this reason, IT managers place a premium on highly stable tools. The Mainframe System Administrator II whose organization handles 200,000 jobs a day put it this way, "[It's a] stable solution that uses scheduling to meet SLAs. It keeps product data flowing and jobs running without downtime... The product is very stable and stays up."

The Sr. Analyst/Technology Infrastructure at the utility described his workload automation tool by saying, “It’s been an extremely stable product. For all of the upgrades that I’ve ever done with the product, I don’t think I’ve ever had a problem that was just from the product itself. There were maybe a couple things that I introduced myself, but they were easily explained and easily fixable.”

Stability emerges as a key factor in tool selection. A Development Manager at a manufacturing company with 1000+ employees said, “Stability is actually why we selected this solution , for being able to support high availability. Otherwise, we wouldn’t go to a single instance of it across the company.” Putting stability into context, a Sr. Architect at a financial services firm with 1000+ employees commented, “It’s extremely stable. We put in the Canadian systems about three years ago, and we have not had an incident in the three years that has kept us down for more than a couple of hours.”

Scalability

The volume of workloads and the extensive nature of organizations under the responsibility of IT demand a high degree of scalability in a workload automation tool. An Assistant Vice President at a financial services firm with 1000+ employees praised his solution’s scalability, saying, “We can leverage multiple servers with ease.”

A Sr. Analyst Developer at a media company stressed that flexibility in scaling was what mattered, explaining, “From a scalability perspective, I enjoy the fact that, when we scale our networks – we have our servers that actually perform the work out in disparate parts of the company – we don’t have to bring the whole infrastructure in. The application server layer of the product line really allows you to centralize the control, without having to have direct, direct contact to every single component out there. It’s a nice tiered approach. I see it that the scalability is in line with where I see our company going.”

A Scheduling Support at a financial services firm with 1000+ employees described the potential of his workload automation tool to scale by noting, “No problems with scalability. That’s actually one of the competitive advantages with this product - the scalability and its ability to do the throughput we need without having any delays. We have scaled as far as we can grow. I’ve been talking to other companies that are much larger. I’m confident it could scale if we had a tenfold growth and we’d still be okay.”

The Sr. Architect at the financial services firm added, “It’s our impression that we’re probably one of the larger installations in the world. We have two instances controlling our Canada operation; it’s really Canada and the rest of the world. It was suggested that we spin up the second instance, but we really haven’t seen a good reason for doing that, other than we keep some of the competing lines of business separated. Other than that, it seems to scale really well and we can keep going with it.”

Flexibility and Scripting

Flexibility matters with workload scheduling. A Director at a financial services firm with 1000+ employees was pleased with his workload automation tool because, "The advanced GUI has the flexibility to schedule jobs on various business needs." The Senior Associate at the financial services firm suggested that users, "Take the time to learn how to use the GUI and learn how to code the schedules," adding, "There are a lot of different ways to code schedules."

IT Central Station workload automation tool users seem to have a love/hate relationship with scripting. It's best to reduce or eliminate the need for custom scripts and ad hoc code as it avoids relying on one or two job scheduling specialists. Reduced scripting empowers IT, developers, and business analysts to directly automate and optimize complex business flows and processing priorities in real time. For those who do consider manual coding indispensable, the comments of The Senior Associate at a the financial services firm offer some perspective. He said, "The most valuable feature is the ease of coding up schedules to run jobs in both the mainframe and distributed environments." A Manager at a tech services company with 1000+ employees explained, "The flexibility of being able to schedule the timing and frequency of different automation scripts makes it easier for us to meet our customers' business requirements."

People who don't want to code, or can't code, can benefit from solutions that still allow them to schedule workloads. An AutoSys Administrator/Engineer at a tech services company commented, "One of the things that I have found out is that I'm the one that's using most of the job types, because I've taken away the need for writing or scripting processes. When somebody knows the database and knows how to write SQL code, or they know how to write a stored procedure, they don't need to know how to write scripting in order to run their scripts." He added, "When you don't have to teach people how to script or how to write different codes because of the way they connect to stuff, you're saving money, because you're able to put stuff into a production environment in a much faster solution."

Working Across Environments

The heterogeneous nature of most large enterprises makes it imperative that workload automation tools work across multiple environments. For some organizations, their IT assets resemble a museum of computing with working exhibits, spanning zOS mainframes, iOS/Unix mini-computers and distributed systems including numerous generations of the Windows Linux stacks. Workload automation has to work efficiently amidst all of these environments.

The Senior Associate at the financial services firm explained how important this is. He said, "The most valuable feature [of our workload automation tool] is the ease of coding up schedules to run jobs in both the mainframe and distributed environments...Prior to installing ESP, we had to use two products: one for mainframe and one for distributed."

A Consultant at a large financial services firm concurred, adding, "It's a very good scheduling product if you have a combination of mainframe and distributed environments that have batch operations and repetitive tasks running on them." An IT Manager at a logistics company with 1000+ employees was pleased that his workload automation tool, "Extracts and externalizes data without having to be reengineered, which keeps the mainframe people happy."

Flexibile Architecture

Workload automation tools need to be flexible enough to integrate with diverse workloads such as enterprise resource planning (ERP), cloud computing infrastructure and "big data" resources. The Sr. Architect at the financial services firm commented on this aspect of his workload automation tool. He said, "What we really like is that it's an enterprise solution and it really allows us to do the 'normal work' [across] the different operating systems and platforms, but it also allows us to manage and control our ERP systems, and [big data analytics] things like Informatica and Hadoop, and all those good things that are coming down the line, in the way of big data and things like that."

Security and Compliance

Any change to a system can potentially affect security and compliance. Workload automation tools thus have to conform to security policies. Even if there are hundreds of jobs running every hour, there needs to be an audit trail and the ability to enforce controls and countermeasures. An Enterprise IT Management Consultant at a tech services company likes his workload automation tool's granular security, which enables self-service role-based access. With this capability, he is able to ensure that only individuals in specific roles can run jobs that touch on security policy.

A Systems Analyst at a utility finds the security features in his workload automation tool to be "top notch." He contrasted his earlier solution with his present one, saying, "The most valuable feature for us is security. We now have extra job types, so instead of three, we have 55... [with the previous toolset], anyone within the company could get in and do whatever they wanted if they had access...[but now] we can put them in an AD group and then assign security based on the AD group, so it's great."

Self-Healing

A system that runs thousands of jobs will encounter faults that halt the completion of some portion of those jobs. The best workload automation tools can address this problem by being self-healing. The Sr. Analyst Developer at the media company explained, "What we found over time is that the product is self-healing, regarding when there were issues, connectivity issues, between the scheduler and the machines that actually perform the work. If there were issues, you don't have to worry about making sure everything re-syncs up. The system is programmed and designed to catch up with itself, pick up latent data, and give you accurate results."

Reporting, Alerting and SLA Monitoring

A worthwhile workload automation tool will provide extensive reporting and alerting capabilities. The Scheduling Support person at the financial services firm likes the fact that his workload automation tool lets him monitor complex workloads, see batch flow status and deal with problems before they become bigger issues. He commented, "As an example, we had a stuck file watcher we weren't aware of. Due to the alerts, we were able to reach out and get the file in time to still make our batch commitments. This happened instead of missing an SLA." The Mainframe System Administrator II at the

financial services firm made a similar remark, saying, “The solution helps us meet our SLAs. It helps us keep the product data flowing and the jobs running without down time.”

The Senior Systems Engineer at the consultancy noted, “The reporting facility of the [workload automation tool] product helps me to identify problematic jobs in the environment.” An Autosys Administrator at a tech services company added, “The benefits are that it’s automated, reporting facilities are terrific. When there is, let’s say, a failure of a job, it’s very, very easy to report that incident, that event, and we can certainly notify the appropriate personnel who need to be notified of that, very, very quickly.”

Conclusion

Workload automation is constantly undergoing change. New business expectations, mergers and new platforms and workloads exert pressure on IT managers to automate ever-expanding volumes of complex workloads. Getting workload automation right involves people, processes and tools. The automation is so intensely technological in nature, however, that the choice of tool can make a big difference in the success of the overall workload automation effort.

Users of workload automation tools writing on IT Central Station describe a number of essential criteria they value in selecting the right workload automation tool. They expect their tools to be stable and highly scalable. Tools must be flexible and work across multiple platforms and workloads, e.g. mainframes, big data, cloud and so forth. Scripting capabilities are a “must have” but so is the ability to schedule jobs without having to know coding.

They expect security and compliance to be built in to the product, such as with role-based privileges for job execution. And, they want their workload automation tools to have sophisticated alerting and reporting features so they can be aware of how they are doing with SLA management. Ultimately, every organization has to find the right fit between its unique architecture and business requirements and the workload automation tool that will serve them best. The criteria described in this paper, however, should be useful because they offer potential buyers of workload automation tools a range of insights gleaned from real world experience.