

IBM Software

Market Report

The importance of workload automation according to the enterprise



Introduction – Workload Automation as “Gold Mining”

Since its inception, IBM Workload Automation has changed its look many times. It changed its extent and relevance within organizations, and passed through the hands of several teams with different skill levels.

Workload automation is the tool that actually does the heavy lifting in extracting and converting data from multiple sources into gold nuggets that can be consumed by different online applications.

Indeed, IBM Workload Automation automates and synchronizes all the steps in data processing, and therefore supports and streamlines the transformation from raw data to meaningful information.

In the light of this consideration, it becomes obvious how in today’s market, dominated by the explosion of social media, big data and analytics, and the consequent need to regain control of the increased complexity, workload automation is becoming more important and critical than ever.

Workload Automation enabling a competitive edge

Workload automation affects the core business of any organization, and in many cases it is responsible for the level of services and satisfaction that an organization can guarantee to their clients. Therefore, it represents a key enabler that can create a competitive edge and drive the organization to success in the market.

Enterprises and organization with a strategic and mature workload automation solution will offer reliability and responsiveness to their clients. They will be able not only to automate, but also optimize the background execution of workflows that run in support of business services, and finally to guarantee timely and effective business services.

Four main goals for Workload Automation

Enterprises and organizations that appreciate the importance of workload automation are seeking to exploit the product to its full potential. When done so, workload automation provides more than just operational efficiency, it enables clients to gain

Several metaphors have been used for workload automation along the years, such as conductor, train, and glue. However, one of the nicest definitions comes from a recent article published by Forrester (*Market Overview: The Top 10 Workload Automation Vendors, Q1 2014 – March 13rd 2014*).

control of complexity, reduces application management costs, lowers resource costs and delivers insight to the business, providing a basis to make intelligent decisions.

Four main goals are pre-requisite to exploit the tremendous potential of workload automation.

As the first goal, you need to accomplish automation through a single console, rather than a fragmented, siloed approach. Only with a centralized control you can get an end-to-end picture and understand how well your workflows are supporting your business goals.

Secondly, you need to expand the benefit of automation as the application landscape expands. When new applications enter the business, you need them to be deployed as part of the assembly line as soon as possible, in order to take advantage of new processes in a managed approach. Integration is key, both to centralize the government of activities underlying a business process, and to simplify the whole service management without switching context.

As another goal, it is important to reduce the human intervention required to control and respect Operating Level Agreements (OLAs) to a minimum level. OLAs represent the IT targets underpinning the delivery of business Service Level Agreements (SLAs). As an example, OLA may be represented by the batch window deadline. It must be met to allow – for example – banks to open in time (SLA).

Finally, you need to provide workload automation services and dashboards to new business users, empowered by the explosion of mobile, to access

their organization websites and applications, so that they can have a view of their services and perform basic tasks on their own.

Why IBM is uniquely positioned to accomplish those goals

IBM can proudly claim to hold the leadership position for IBM Workload Automation in the world's top financial institutions.

80% of the "Fortune 25 worldwide Banks (Accuity's list)" use IBM Workload Automation. And 70% of the "Fortune Top 10 US Banks (Forbes' list)" use IBM Workload Automation.

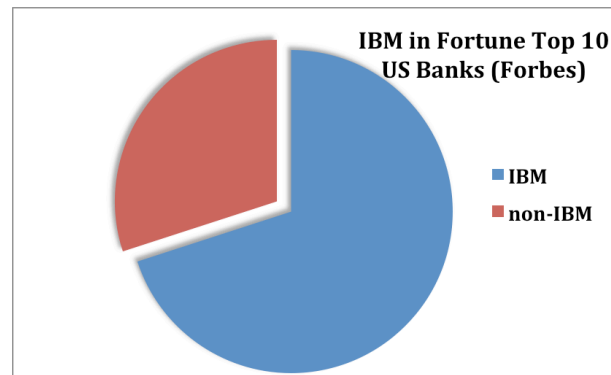
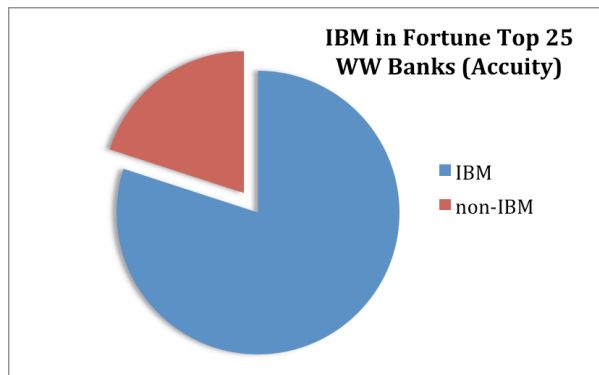


Figure 1. 80% of the "Fortune Top 25 Worldwide Banks" and 70% of the "Top 10 US Banks" use IBM Workload Automation

IBM Workload Automation is also mentioned in the following eDiscoveryTimes article, as the most used among all workload automation vendors.

eDiscoveryTimes: IBM Tivoli, BMC and SMA Solutions Top Poll on IT Automation Software

<http://ediscoverytimes.com/tivoli-bmc-and-sma-solutions-top-poll-on-it-automation-software/>

We believe that the reason for success lies in how IBM uniquely satisfies the key workload automation requirements.

Highest flexibility in end-to-end configurations

Only with central management capabilities over end-to-end workflows, including complex job and resource dependency, as well as jobs triggered by human actions or external events, you can have a business centric management of your workload automation environment underpinning business flows and services.

Delivering an end-to-end experience has been one of the major investment themes for IBM Workload Automation for several years, with IBM now providing clients with an optimal solution for enterprise wide management in their business. Even more, the IBM Workload Automation solution has been continually enhanced, supporting synchronization of multiple end-to-end implementations through cross-engine dependencies and single monitoring views.

IBM Workload Automation offers the greatest flexibility in combining mainframe and distributed engines and agents to deliver end-to-end configurations. With IBM Workload Automation, clients can move workloads as needed across platforms, and place them where they are best served, with a minimum impact on the configuration changes.

IBM's end-to-end solution has a proven record of scalability and high availability. Thanks to this scalability record, IBM clients can run 400k daily jobs with a single engine, meaning clients have been able to replace multiple vendor products instances with one single IBM Workload Automation instance.

“As we introduce greater automation and control with Tivoli Workload Scheduler for z/OS, we will be able to manage a greater volume of production workload more efficiently and reliably”, says Cristina Taglioretti, Manager of Application Interface Development, Banca Popolare di Milano. [Click here to read the full article at http://www-03.ibm.com/software/businesscasestudies?synkey=N724260S64951T57](http://www-03.ibm.com/software/businesscasestudies?synkey=N724260S64951T57)

High availability can be achieved through several options, even between remote data centers, and again, clients can select their best model.

Other than end-to-end workloads, IBM Workload Automation automates and centralizes the management of workload-related information. Automatic ticketing, central management of historical job logs, central monitoring of workloads resources, are just some examples of the trend toward a centralized management of workload automation infrastructure.

End-to-end solutions have been built on top of a backbone with unique architectural strengths. For example, the choice to have the production plan as an object, rather than create it on the fly, has been the selection criteria for many competitor displacements. A French insurance company recognized that the physical plan minimizes the idle time (workload chains are built prior to plan execution) and speeds up the navigation along workload chains, increasing the capacity to complete the daily plan within the batch window.

Furthermore, the end-to-end solution features a common graphical user interface across distributed, mainframe and cloud environments.

Tie it all together with IBM Workload Automation

Big Data projects and Cloud adoption accelerate the need for workload automation to act as a business process integration hub. As new applications, the need for tying it all together with workload automation is strongly felt.

As an example, consider Big Data projects. Most of the time, they require huge amount of source data, derived from Systems of Engagement, to be transferred (through File Transfer application), stored into Big Data platform (like Hadoop), then extracted, transformed, loaded (through ETL application), before finally being presented in dashboards (through Business Intelligence applications). In the whole

flow, orchestration is needed to ensure that the output of any application becomes the input for another application at the right time, and the whole workflow can reliably proceed to the delivery of the final business service in a timely manner.

IBM Workload Automation is a perfect fit to act as a business process integration hub, since it provides a wide variety of out-of-the-box adaptors (plug-ins) to connect to Enterprise Resource Planning, Hadoop, Business Intelligence, Data Warehouse, and File Transfer tasks.

And when no native plug-ins are available, clients / business partners can quickly create their own through the IBM Workload Automation toolkit that provides expansion of the application landscape manageable under the IBM Workload Automation umbrella.

That’s not all. IBM Workload Automation allows combining multiple application objects into a single full stack of batch processing, and producing patterns with built-in expertise and experience. For example, the Big Data project workflow described above, including all the related resources (workstations, dependencies, rules), can be combined into a single pattern, which can be easily moved across different environments, shared with other teams, re-used.

Support Operating Level Agreements and minimize the human intervention

Business organizations are looking for ways to prioritize activities and deliver timely execution of mission critical workloads, along with the need to automate operations and reduce costs.

Mission critical workloads might be, for example, any services, whether in-house, contracted or outsourced, subject to Operating Level Agreements (OLAs). OLAs are particularly valuable in real-time and time related activities, and their failure may become a failure in the service delivery chain; with

potentially disastrous impact and the loss of millions of dollars in minutes.

Enterprises are making huge investments to ensure that SLAs are guaranteed and they desire autonomic workload management solutions of the underlying OLAs to free up time and resources.

IBM Workload Automation provides an out-of-the box feature, called Workload Service Assurance that provides critical workload assistance, monitoring workloads to determine at any time the critical activities to production OLAs, taking corrective

actions for risky deadlines and enabling proactive human reactions to prevent critical delays.

IBM Workload Automation is the only product that adopts promotion algorithms, and dynamically prioritizes risky critical jobs to recover the delay and put the workload back on track. It provides a dashboard of all critical jobs and an immediate and easy understanding of their risk to miss the deadline. This is represented with the risk level, a critical job attribute unique to IBM, which IBM has patented. The risk level helps to prioritize the human intervention and fix potential risk situations

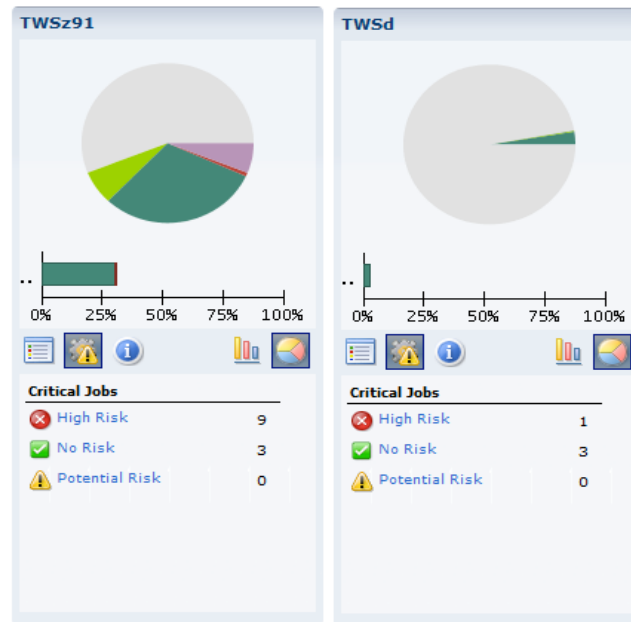


Figure 2. Dynamic Workload Console dashboards, with critical jobs and their risk level.

IBM Workload Service Assurance has been an important selection criterion for clients replacing other vendors for IBM. The Manager of Application

Interface Development in Banca Popolare di Milano, Cristina Taglioretti, says:

“Even minor delays or errors in processing transactions can have a major impact on operations and service levels. For example, if certain nightly batch runs are not completed on time, we cannot open our branches or serve customers. We wanted to shrink the batch window even as the volume of work grew, to automate operations and to gain a single dynamic view of all scheduled activities.”

And she concludes:

“At the moment, if a job terminates abnormally our operations team is only alerted to this hours after the fact and must go back and restart the job manually, causing significant delays. With IBM Workload Scheduler for z/OS, we are alerted to any issues far in advance. In one click the operator can discover and drill down to the job in question, helping fix the problem faster. This will help us keep scheduling on track to meet our targets, ensuring that all jobs are completed within the batch window and avoiding impact on business activities.”

Workload Automation offered to the Line of Business

According to Gartner, in the last years, the new technologies — including mobile, analytics, big data, social and cloud — have reached a tipping point with business executives, so that they realize that there is no choice but to increase technology's potential in the enterprise. In other words, new technologies are encouraging organizations to change approach, and lines of business users are looking at technology with new expectations for responsiveness, features, ease of use, and availability.

IBM Workload Automation is ready to face this challenge. In the last few years, it has exposed automation services through self-service catalog and dashboards. Business users are therefore able, in an autonomous fashion without further pressing the IT staff, to trigger and monitor simple business automation tasks selected from a catalog. The self-service catalog is also available on mobile, and its services are offered as user friendly icons in a natural language. Similarly, business users who want to have health-checks on the underlying automation in their business can use dashboards, also available via mobile.

Cloud and IBM Workload Automation

As Cloud computing is such an important theme in today's technology marketplace, it is worth addressing this specifically, to understand how it has affected IBM Workload Automation evolution and likely impacts for the future.

Let's use the example of a Big Data and workload automation scenario. As mentioned before in this paper, Big Data produced by systems of engagement – for example – customer data derived from social media and the web requiring analytics, can lead to requirements for IBM Workload Automation, as the business process integration hub. Coupled with this, Big Data can also alter the established concepts of design and provisioning of the supporting infrastructure, and lead to the Cloud, as an opportunity to effectively cost manage this vast computing challenge without having to expand the IT footprint.

This poses both new challenges to IBM Workload Automation, but more importantly it offers new opportunities.

On one side, IBM Workload Automation is being called upon to manage applications that span the virtual and physical, the public cloud and the private cloud. However, by taking advantage of Cloud, clients can implement an IBM Workload Automation solution with lower fixed costs. This can be achieved by either: 1) moving workloads to be ran over elastic Cloud resources, to serve workload peaks or prevent SLA breaches; 2) hosting the IBM Workload Automation server into the Cloud, while keeping the data in the local data center, to save deployment and administration costs.

IBM Workload Automation well responds to this new challenge, as it aggregates and controls workloads running on physical, virtual, and cloud environments. It also features a flexible pay-per-use licensing model that avoids fixed license costs for small workloads and lets you grow with the needs of your business.

Elastic Workload Automation

Leveraging its brokering capability – that allows placing workloads where they best fit, according to user-defined policies – IBM Workload Automation can move workloads into cloud resources, to serve temporary workloads or workload peaks and changing SLAs.

For example, in order to automate applications which are heavily used over a short period of time – such as a concert ticketing system – IBM Workload Automation can allocate Cloud resources to run the workloads upon, and return those resources back into the Cloud when no longer needed. This can be accomplished thanks to the integration of IBM Workload Automation with IBM Cloud Orchestrator, an IBM product that provides cloud management for IT services.

With the same mechanism, IBM Workload Automation can allocate Cloud resources on-demand, to manage workload peaks – for example, quarterly processes – or fix risky SLAs. The elastic nature of Cloud resources fulfills these scenarios, and allows the resources to be available in real-time based on

business need, and then returned to the pool once that business need has been satisfied.

Software as a Service (SaaS) Workload Automation

Since February 2014, IBM Workload Automation provides a “Software as a Service” (SaaS) offering. This new delivery model offers automation capability to manage distributed systems and applications on consumption based pricing model. Because the server is hosted by IBM Softlayer, the largest cloud computing infrastructure provider, IBM Workload Automation SaaS guarantees security, privacy, and reliability. The SaaS offering allows you saving all infrastructural effort needed for installation, deployment, upgrade, and backup management. You are only left with the easier task to administer local agents, which run your workloads and communicate with the server through an outbound gateway connection.

The SaaS offering does not pretend to replace, but rather it complements and enriches the traditional “on-premise” offering. It offers Workload Automation services to small data centers, or any data center director and Line of Business (LoB) who want to have fast and easy access to process automation solutions, without having to rely upon the IT for new deployments, or special configurations and settings. It delivers quick time to value and low fixed costs as an IBM Workload Automation environment is set up in minutes and automatically kept up-to-date with the latest maintenance level.

IBM Workload Automation SaaS also benefits the traditional IT organizations, in that it offers live demos and free trials for on premise product features. Everyone can access Service Engage – the IBM website where SaaS applications are made available – and get a ready-to-use test environment for on-premise features, in a few easy steps.

IBM Workload Automation SaaS provides a rich Application Catalog, with a variety of pre-defined applications, spanning Enterprise Resource Planning (ERP), Big Data, Business Intelligence, DataWarehouse, Extract-Transformation-Load, and File Transfers applications. All those applications are available in a self-service fashion, through friendly import wizard to just click upon.

As part of this Application Catalog, automation solutions aimed to fulfill specific business scenarios are also provided. For example, the new “Retail Line of Business Pattern” combines IBM Netezza, IBM InfoSphere Cognos and Sterling Direct:Connect into a single application, that enables the final user to collect data from remote locations, centrally process, and finally produce aggregated reports.

With the Application Catalog we have entered into the new generation of applications through pre-configured applications, with built-in expertise and experience, available at minimum deployment cost. LoB users can adopt those applications through a natural language they can understand, and meet their business objectives faster and easier.

Thanks to IBM’s continuous delivery development process, the Application Catalog is continuously enriched, and kept up with the quick business changes.

Of course, SaaS users who want to create their own customized and tailored services can do that through the “traditional” Dynamic Workload Console, available through Service Engage – no need for installation and deployment.

But the interface that better tailor application developer Line of Business is represented by the Application Lab, that allows them to build and manage sample processes that are not available as pre-configured processes.

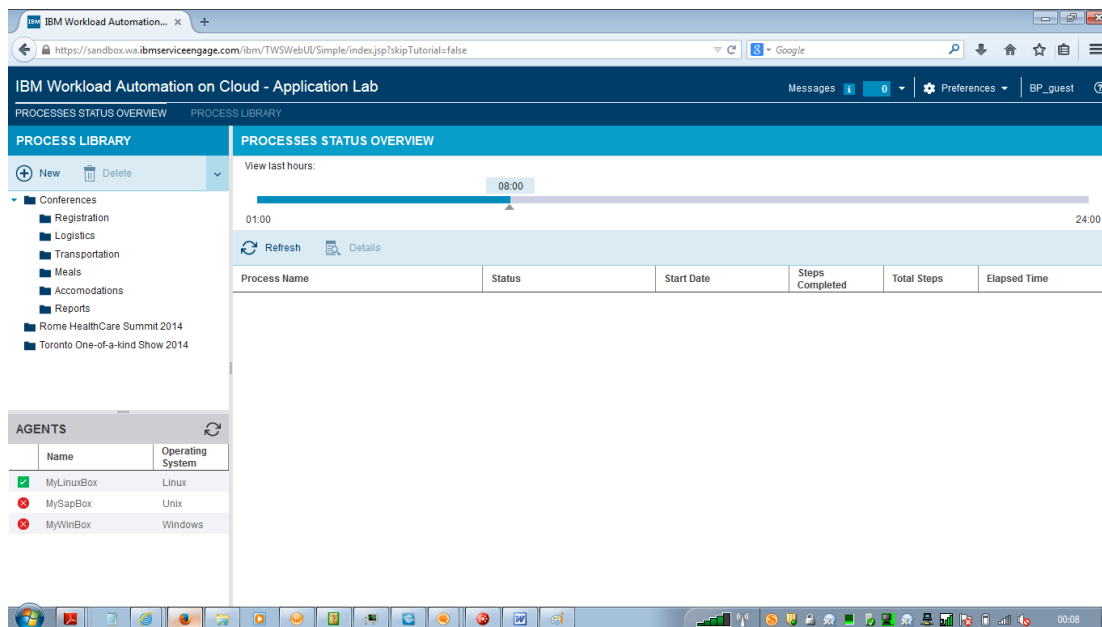


Figure 3. IBM Workload Automation SaaS Application Lab

Since we are talking about application developer Line of Business, it is worth mentioning IBM's flagship cloud application and infrastructure environment: Bluemix. IBM Bluemix is an open-standard, cloud-based platform for building, managing, and running apps of all types, such as web, mobile, big data, and smart devices, with no need to deploy the resources and infrastructure.

IBM Workload Automation SaaS is now an instant resource available in the Bluemix platform, to allow application developer to write applications with scheduling services, for example, a web application that needs daily pruning of logs, performing backup and other maintenance tasks.

Conclusions

o IBM Workload Automation is a critical asset for all enterprises and organizations. In absence of that, they would incur into huge costs to run the workloads underlying their business services, while coping with time constraints and complex workload and resource dependencies.

o The more you exploit the potential of a powerful IBM Workload Automation solution, the more you can save costs, meet business objectives and create a competitive advantage.

o IBM Workload Automation is uniquely positioned to create a competitive edge in your organization. It responds to the latest requirements created by the explosion of workloads derived by mobile clients, big data and analytics, and implementations of virtualization and cloud.

o IBM Workload Automation uniquely integrates with tools and applications, to offer a centralized management of workloads and workload-related information, and put reliability and consistency into new complex projects, like Big Data projects. It uniquely helps you meet critical Service Level Agreements, offers automation capability to Line of Business, and leverages Cloud technology, in an effort to reduce fixed costs and deliver business agility.

o IBM Workload Automation is well positioned to face new challenges, like for example the emerging trend to get predictive over the huge amount of data to prevent incidents and optimize the Workload Automation environment.

o IBM has a rich tradition of Service Management, has always put special focus and investment on IBM Workload Automation solutions and will continue to do so, in the effort to help clients transforming their data centers and operations into efficient and optimized environments.

For more information

To learn more about IBM Workload Automation, please contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/products/en/ibm-workload-automation

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Author:



Flora Tramontano

Contributors:



Arcangelo Di Balsamo



Timothy Richer



Jerry Saulman



Alexandra Thurel



Matthew Whitbourne



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IBM Corporation
Software Group
Route 100
Somers, NY 10589

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