

Driving workload automation across the enterprise

Simplifying workload management in heterogeneous environments



Introduction

IT organizations everywhere are looking for easier and more cost-effective ways to accelerate and simplify end-to-end workload management across complex, heterogeneous infrastructures. In many cases, they are shifting more of the production workload from traditional data center infrastructures to the cloud. The success of this transition, however, depends on solutions that can automate the management of critical activities that support the business, such as batch processing. What's required is a single point of control and the ability to add new capabilities to the cloud environment with a minimum of manual intervention. For instance, administrators need the ability to quickly add new components and software packages to the IT environment without provisioning them manually from a terminal.

Administrators also need the ability to manage the unattended workload wherever it is running. Whether the job is running in the heterogeneous cloud, on a Microsoft Windows-based PC or on an IBM® System z® server, the workload automation solution needs to be able to find the job, understand its requirements and incorporate it into the existing workflow. Organizations with heterogeneous environments (which include cloud services and virtual servers) need to manage and automate workloads across the entire infrastructure with minimal overhead and human intervention.

Meeting service delivery goals

To keep up with the pace of business, IT administrators must constantly increase the workload under management—and today, those workloads have shorter and more critical time frames. Despite the greater demand, administrators still have to meet new workload requirements while controlling costs, optimizing existing assets and dynamically shifting workloads to maximize system utilization.

The IBM Tivoli® Workload Automation family of products helps IT deliver on these requirements. Within this family, the Tivoli Workload Scheduler products offer highly scalable, enterprise-level workload automation and seamless integration with specialized applications such as those from SAP and Oracle or those built on Java technology. An intuitive interface and graphical views empower development and operational teams to collaborate and quickly solve complex problems.

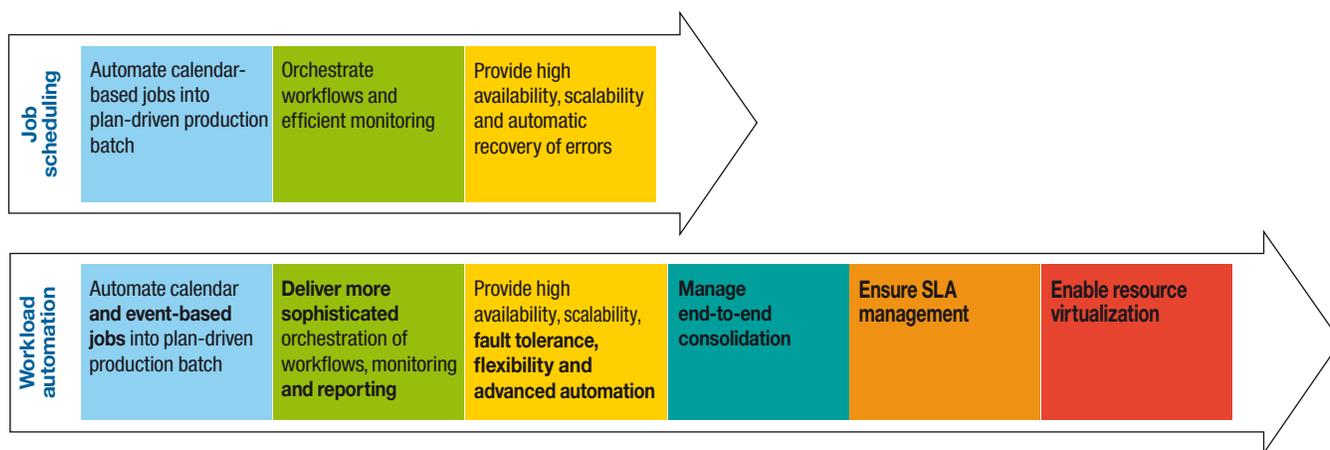
By delivering single-console management, real-time alerts, detailed reports and self-healing capabilities, Tivoli Workload Scheduler provides the software automation organizations need to manage dynamic workloads across the enterprise.

Achieving the benefits of workload automation

Job scheduling has been a part of the IT infrastructure since the early mainframe days. Since then, it has evolved to support a variety of architectures and operating systems. While job scheduling today meets several key enterprise needs, such as batch processing, event monitoring and automatic error recovery, enterprises have begun to adopt a new concept of workload automation for its expanded functionality.

With workload automation, IT can benefit from several capabilities, such as end-to-end consolidation, service level agreement (SLA) management and resource virtualization. In addition, administrators can create policies to monitor performance thresholds for certain services. They can look across all events and see when metrics are below acceptable levels and automate corrective responses to those events. With potentially thousands of applications and services running on any given day, IT administrators cannot handle them all manually. The same is true with batch jobs—IT needs to make sure they perform as expected and finish on time. Workload automation can help IT meet SLAs by providing the needed management functionality that job scheduling doesn't offer.

The enterprise shift from job scheduling to workload automation



Organizations are increasingly adopting workload automation to improve business flexibility, SLA management, resource virtualization and cost control.

In addition, an end-to-end workload automation approach is critical in large, heterogeneous environments where IT and business operations have become increasingly interdependent. In these types of complex infrastructures, even minor issues can have repercussions across multiple areas. For instance, a slow-performing application can result in lost revenue or diminished customer satisfaction. With an end-to-end view of the infrastructure, IT can better allocate resources, optimize underutilized assets and ensure the proper functioning of all enterprise operations.

Scheduling across heterogeneous environments

A large North American software company needed to reduce the cost of its software job scheduling and automation operations. Because the company wanted a common look and feel across all its scheduling products for use in managing two separate scheduling environments, it chose Tivoli Workload Scheduler software. Using Tivoli's Dynamic Workload Console, the company can:

- Use the same interface to schedule workloads in both the mainframe and distributed environments
- Manage and control workflows intuitively, through easy-to-use graphical views
- Rerun or restart jobs without incurring additional costs

Staying focused on business services

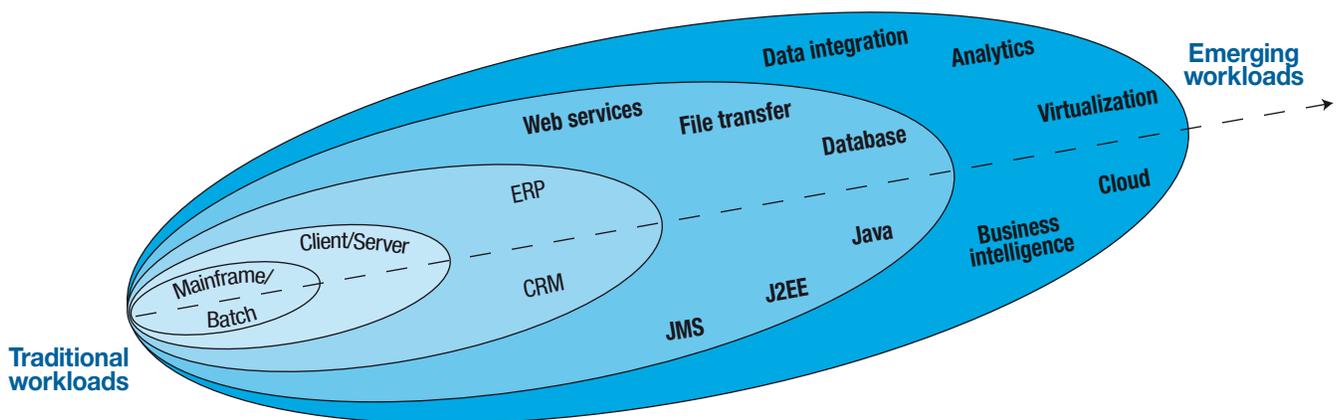
Until recently, enterprise operations tended to govern themselves in relative isolation. Human resources, for example, cared little about the warehouse. Similarly, marketing paid little attention to procurement. Today, enterprise “fiefdoms” and their dedicated technology have been all but disbanded as organizations have restructured their operations to ensure that IT aligns with the needs of the business. As a result, IT organizations have increasingly adopted a service-oriented architecture (SOA) to deliver greater business agility and respond faster and more cost effectively to changing market conditions. SOA enables businesses to effectively dismantle application and operational silos and ensure the delivery of critical business services, such as order entry and accounts receivable, across multiple divisions in the enterprise.

However, meeting the SLAs that support these cross-organizational business processes depends on several factors, such as cost, bandwidth and server performance. In addition, end

users must be able to access applications and services from where they make the most sense, whether in the cloud, on a PC or on a System z server. But providing the automation and flexibility needed to support these services is a tremendous challenge in complex, heterogeneous environments with huge legacy systems and applications.

To deliver better business service performance across the enterprise, IT organizations have evolved how they manage workloads. In recent years, they have shifted from traditional, back-end and transaction-focused systems to more web-based and virtual management approaches that enable greater workforce mobility and business flexibility. While traditional systems still play a significant role in workload management, IT organizations are increasingly moving heterogeneous applications and data to virtual and cloud environments—all with new control and automation requirements.

The evolution of workload management



To help simplify workload management for both distributed and mainframe environments, Tivoli Workload Scheduler offers centralized, end-to-end automation across the workload spectrum.

Simplifying workload automation and scheduling

To help fast-growing enterprises better manage complex IT environments, the Tivoli Workload Automation family of products simplifies workload management across multiple applications and systems including mainframe, distributed and high-performance grid computing environments, providing interfaces that allow SOA to drive workload automation and allow workload automation to control SOA workloads in a closed-loop fashion.

In addition, the Tivoli Workload Automation family can help administrators deliver services that are in compliance with a wide range of legal mandates such as the Sarbanes-Oxley Act (SOX), that meet service level objectives, that support the company's internal best practices and that deliver service information to the management chain. Acting as a central point of control, Tivoli Workload Automation solutions can simplify and enhance management processes with the precision and flexibility necessary to meet rigorous governance requirements.

Organizations can dynamically trigger and dispatch workloads to the best available resources, responding in real time to changing business demands. Together, the products help to optimize resource utilization, reduce IT management costs and integrate the entire workload automation environment under the Tivoli Dynamic Workload Console.

As part of this product family, Tivoli Workload Scheduler makes it easier for organizations to evolve from job scheduling to end-to-end workload automation. Tivoli Workload Scheduler offers

a solid, scalable and efficient workload automation solution that can manage a variety of heterogeneous environments. Its capabilities enable organizations to:

- Manage the workload of new applications with specific integration requirements
- Automatically adapt scheduling environments, through elastic provisioning of additional servers, to meet workload SLAs
- Get detailed reports on workloads in batch mode
- View workflows and identify potential bottlenecks by precisely calculating timing according to average job duration
- Use “what-if” analysis to understand the consequences of changes to flows and dependencies
- Streamline dynamic automation of end-to-end workloads
- Manage workloads in mixed mainframe and distributed environments, including cloud and System z environments
- Automatically distribute workloads to static or dynamic pools of server machines depending on workload requirements and user policies
- Combine jobs from different networks into one list that administrators can monitor from a single screen
- Use a streamlined interface to access and manage workloads from mobile devices anywhere

With Tivoli Workload Scheduler, organizations can solve some of their biggest workload management challenges. With flexible, end-to-end workload automation, IT can improve service delivery, increase productivity across mainframe, distributed and cloud environments and modernize batch processing with a new, extensible application framework—all without requiring new skill sets. The result is a smooth, cost-effective transition to workload automation that helps control costs and improve service availability across the enterprise.

For more information

To learn more about the IBM Tivoli Workload Automation family of products, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/tivoli/products/workloadautomation

About Tivoli software from IBM

Tivoli software from IBM helps organizations efficiently and effectively manage IT resources, tasks and processes to meet ever-shifting business requirements and deliver flexible and responsive IT service management, while helping to reduce costs. The Tivoli portfolio spans software for security, compliance, storage, performance, availability, configuration, operations and IT lifecycle management, and is backed by world-class IBM services, support and research.

Additionally, IBM Global Financing can help you acquire the IT solutions that your business needs in the most cost-effective and strategic way possible. We'll partner with credit qualified clients to customize an IT financing solution to suit your business goals, enable effective cash management, and improve your total cost of ownership. IBM Global Financing is your smartest choice to fund critical IT investments and propel your business forward.

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