



Reduce IT Costs by Simplifying and Improving Data Center Operations Management

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EXECUTIVE SUMMARY

If your IT organization is like most, you must achieve what may seem to be contradictory objectives: deliver higher levels of service and reduce costs. Many IT executives are discovering they can get the service results they desire at a lower cost if they focus on improving operational efficiency through an approach known as *service optimization*. Service optimization helps IT organizations increase availability, performance, and productivity while reducing costs. This approach involves identifying underperforming management processes within the data center — including processes for the database, operations, systems, storage, and capacity management — and then systematically making these processes more effective using a combination of best practices and intelligent automation.

IT workload automation plays an important role in service optimization by linking resources, applications, and batch processing to create a centralized, automated approach to job scheduling. With IT workload automation, IT organizations can make improvements in operational efficiency that result in substantial cost savings. In fact, BMC has found that, with IT workload automation, these organizations can double their return on investment within one year.

Many companies are already enjoying the benefits of IT workload automation. Dell implemented an IT workload automation solution that allowed the company to grow from processing 12,000 jobs a day to more than 85,000, while reducing overall staff. A large telecommunications company reduced the manual handling of exceptions from 147,000 on a quarterly basis down to 4,800, improving its ability to complete jobs in a timely manner and achieve service level agreement (SLA) deadlines. The company also reduced the headcount in the scheduling area from 180 down to 25, resulting in a savings of more than \$10 million.

What's keeping some IT organizations from implementing IT workload automation? One roadblock is that they often have many disparate systems and different methods for managing operations and workflow. And sometimes it's just difficult determining where to start. You're definitely not alone if your current data center is a delicate combination of components tenuously held together by the daily care of staff members who strive to be experts in the unique requirements of different systems. This situation causes a disjointed approach to scheduling that often results in overstaffing, increased downtime, and frequent delays of business deliverables. Yet many IT organizations are reluctant to change, simply because they don't know where to begin.

With the right guidance based on a proven methodology, and with a scheduling solution that provides IT workload automation, you can take a major step in achieving service optimization. You can improve service levels while cutting costs. This paper does the following:

- » Discusses how to get started with IT workload automation improvements
- » Describes what to look for in a scheduling solution to integrate with your current environment
- » Examines a methodology for measuring improvements in operational efficiency
- » Describes the resulting business benefits

INTRODUCTION

Many data centers face a similar problem. Years of adding new systems and applications have almost inevitably led to a mind-boggling combination of methods and systems for managing operations and workflow. This array of methods and systems typically requires repetitive manual intervention by staff. The result is high staff inefficiency, manual errors that add to that inefficiency, and decreased agility in responding to business requirements. The problem is compounded by the lack of an accurate view of the performance of workflows within IT operations.

In many IT infrastructures, multiple job and workload solutions often fail to talk to each other, are not integrated, and require multiple staff members to manage and maintain them. Using an IT workload automation solution can help you eliminate many of these inefficiencies and achieve service optimization benefits more quickly. At the same time, you can reduce the number of incidents and benefit from increased agility in supporting new business requirements.

IT workload automation, the next step in the evolution of job scheduling, supports a greater number of complex workloads and adds dynamic, intelligent, event-driven capabilities for modern technologies across multiple physical and virtual systems. According to Enterprise Management Associates, by automating workloads through a single scheduling solution, IT requires “fewer administrators to manage much larger workloads, in much less time, than they could do manually ... This results in average annual savings in staff costs alone of around \$750,000.”¹ As a result, staff members can focus on more value-added projects to help grow the business.

GETTING STARTED

You may see the wisdom of implementing an IT workload automation system to automate complex processes and help you achieve service optimization objectives. But you may be reluctant to change the way you currently perform scheduling because of the complexity of your job scheduling environment. Where do you begin? This section presents an approach to answering that question.

ASSESS CURRENT SITUATION

The first step is to conduct an assessment of your current state of operations and determine the results you wish to achieve. In looking at desired outcomes, begin with areas that are most strategic to the business. Many organizations focus on cost reduction, risk mitigation, and increased business agility.

> COST REDUCTION

The next step is to examine your costs. Direct costs include those related to people, products (both license and maintenance), support, training, and upgrades. You should also look at other costs, such as determining the added burden of not performing IT workload automation. For example, failing to implement an IT workload automation solution could cause a six-month delay in the deployment of a new SAP application due to poor integration between the scheduling solution and SAP. How much would that delay cost you?

These other costs are not always straightforward and are often difficult to uncover because they may not appear on the balance sheet. They could, however, result in a far greater effect on the business than direct costs. For example, a delay in the deployment of a critical business application may cause the loss of thousands of customers in a short time, resulting in revenue loss that could be many times higher than the upfront direct costs of people and technology.

> RISK MITIGATION

To accurately assess risks, you must analyze information about the infrastructure, applications, and business processes affected by automation. Most scheduling solutions control the critical factors of all three of these elements.

Batch job failures can have varying effects, ranging in severity from insignificant to shutting down entire sections of the business. A configuration management database (CMDB) provides access to information that can help you analyze the parts of the business that are affected by batch outages and delays.

Although you may meet SLAs and not lose business when your systems are down, your company's reputation can be damaged because you aren't meeting business objectives. You may also face financial penalties. For example, a financial trading firm failing to complete customer transactions on time may be heavily fined, and the incident could make headlines.

Most companies have software and hardware deployment roadmaps that project six to twelve months forward. Carefully assess the requirements of new applications, servers, and operating systems to determine whether integration is possible given current deadlines. Assume that, in addition to your planned changes, you will probably be required to perform unplanned changes. Consequently, it's important to identify the gap between the current and desired ability of your scheduling solution to accommodate unplanned changes.

> BUSINESS AGILITY

One way to measure business agility is to assess the ability of your IT organization to effectively support business initiatives. For example, if a telecommunications company plans to launch a marketing promotion that is expected to triple the number of new customers on any given day, it's critical to ensure that the IT applications supporting the business can accommodate the heightened workload.

DETERMINE WHAT YOU WANT TO ACHIEVE AND HOW TO GET THERE

At this point, you should have a fair understanding of your organization's current state of affairs. Now you can begin work to determine the desired state and identify the changes that can be made to accomplish the desired outcomes, such as cost reduction, risk mitigation, and improved business agility. Table 1 presents some key questions to address in this endeavor.

CHECKLIST FOR IDENTIFYING DATA CENTER MANAGEMENT OBJECTIVES

What are your current and desired resource requirements for workload automation?

- » How many organizations or locations independently manage or operate your workload automation environment?
- » How many hardware and people resources are required to operate your workload automation environment?
- » How many different job scheduling solutions are currently in use in your various organizations or locations and in your overall environment?

What areas of efficiency do you intend to measure and improve? Identify targets for the following:

- » Reducing incidents (indicate ideal number of reductions and percentage)
- » Reducing the hardware resources you are consuming and using (identify the resources and their cost)
- » Increasing business availability (identify specific areas of availability and metrics)

What new capabilities would provide substantial benefit in managing your workload environment?

- » Integrated forecasting and what-if capabilities to improve change management planning and business impact analysis
- » Native batch version control with rollback capabilities, auditing, and reporting
- » Intelligent business service impact assessment and notification
- » Seamless agent and agentless batch support, lowering deployment and ongoing maintenance requirements
- » Broad application integration support, including Java, Web Services, and message-oriented middleware

Table 1. Self-Assessment Guidance

EVALUATE SOLUTIONS

Once you have assessed your current situation and established the desired outcomes, you can evaluate your existing scheduling solutions with respect to their ability to help you achieve those outcomes. You are also in a position to evaluate what new IT workload automation solutions you will need.

SELECTING THE SOLUTION

In selecting an IT workload automation solution, it's important to evaluate both the solution technology and the solution vendor. This section presents criteria you can use for that evaluation.

TECHNOLOGY CRITERIA

An effective solution should have the following characteristics:

- » Offer robust, scalable support of all common applications and computing platforms, including mainframes, if you have them
- » Integrate all aspects of production workloads into a single focal point
- » Provide centralized access for all workload schedules and output
- » Support a comprehensive and consolidated enterprise view
- » Process "translations" between applications and platforms in a completely automated and transparent manner

The solution should enable you to increase your IT Infrastructure Library® (ITIL®) maturity level by providing support that allows you to do the following:

- » Manage batch and workload automation incidents based on business priorities
- » Forecast the impact of configuration changes on critical batch processes
- » Reduce risks through job version control, auditing, and reporting
- » Reduce the overall software footprint across the enterprise
- » Receive proactive early warning of potential service problems in the batch production environment

To simplify and improve data center operations management, look for an IT workload automation solution that can orchestrate and optimize dispersed and disparate management processes across the enterprise from a single console. This capability enables you to centrally monitor and manage workload elements, so you can cut across silos to reduce production workload disruption and speed up recovery times.

The solution must make it easy to automate the handling of multiple applications on a variety of platforms and permit applications to trigger processes across different platforms. Avoid systems that require staff to perform manual intervention. Remember, the goal is to reduce or eliminate the large numbers of inefficiencies that result from the manual support of job scheduling.

VENDOR CRITERIA

In evaluating IT workload automation vendors, look for one that has expertise in implementing the best-practice processes outlined in ITIL. These processes permit you to manage IT based on business priorities, and that is key to effective Business Service Management (BSM). BSM is a comprehensive approach and unified platform for running IT. Industry analysts agree that IT organizations that adopt ITIL and BSM principles can achieve improved service quality while operating with increased efficiency.

If your IT infrastructure includes mainframes, it is important that the vendor have expertise and experience in both distributed systems and mainframes. That's because many IT workloads involve close interoperation of mainframes and distributed systems. In addition, look for a vendor that provides a full solution, one that includes help in planning, implementing, and deriving the maximum value from your IT workload automation solution.

Be sure to establish the specific efficiency measures you will use to track the success of your efforts. One of the keys in measuring operational efficiency improvements is to derive objective, quantitative metrics. As a starting point, consider the following categories of metrics for measuring operational efficiency improvements:

- » Increased business availability
- » Reduced risk
- » Improved productivity
- » Increased performance of IT resources
- » Reduced staff requirements for routine work

The challenges faced by your organization are unique to your business and your particular operational model. As a result, some of the metrics you establish will be unique to your situation. You may want to consider tracking the following metrics because they apply to most organizations:

- » Shortened time to market and lower deployment costs for new applications
- » Reduced execution time for batch processing
- » Reduced reliance on customization to support workload integration
- » Improved mean time to resolution (MTTR) for batch workload exceptions
- » Reduced penalties incurred due to disruptions to the batch portion of business services
- » Lower costs related to fewer failed or delayed file transfers
- » Fewer staff required to support workload automation activities

REAPING THE BENEFITS

Simplifying and improving the management of data center operations can substantially reduce costs in a number of ways. Here are some examples:

- » Providing the ability to reduce the overall complexity of batch-related workloads can lead to significant savings in resources.
- » Lowering the manual effort required to provide integration between and among systems and applications can speed the delivery and improve the quality of services that meet new business requirements.
- » Providing the ability to reduce the staff requirements to manage data center operations through the use of a common interface to centrally manage the workload automation requirements of multiple, disparate systems and data centers.
- » Making it possible to shrink the MTTR and the number of errors in the batch workload environment through the use of a single, intuitive interface and automated recovery capabilities.

The resulting business benefits are compelling and include the ability to do the following:

- » Reduce the time to market and the deployment costs for new applications by as much as 30 percent
- » Shrink the execution time for the batch window by 20 to 30 percent and the MTTR for batch workload exceptions
- » Eliminate reliance on local customization or homegrown tools to support workload integration
- » Achieve consistent SLA attainment and avoid costly penalties by minimizing disruptions to the batch portion of business services
- » Reduce the overhead associated with change management activities related to batch elements
- » Reduce system CPU consumption by eliminating the need to read SMF records and maintain operating system hooks to support the job scheduling environment
- » Reduce the management, monitoring, recovery time, and costs related to file transfers
- » Enable 24x7 availability for the batch workload

A REAL-WORLD EXAMPLE

Dell embarked on a broad initiative to integrate and upgrade its IT services to better satisfy business needs and to improve job scheduling by using an IT workload automation solution. In implementing the solution, the company was able to achieve major improvements, such as the following:

- » **Application integration** — Consolidating all enterprise job scheduling across all platforms and all business partners into an efficient central management function
- » **Service-driven management** — Migrating from completely time-driven to mostly event-driven job scheduling
- » **End-to-end workflow mapping** — Mapping workload events to automate business impact analysis, alerts, e-mails, and trouble tickets
- » **Enterprise visibility and management** — Managing the flow of workload events to bridge the gap between technology silos and broader enterprise visibility

As a result, Dell has expanded its schedule from 12,000 daily jobs to more than 85,000 — with fewer scheduling staff.² Business partners no longer need to dedicate personnel for monitoring. Outages are now infrequent and brief. Dell has found that it can extend its workload automation to any platform and any application with only minor effort. Dell's success today extends beyond a smooth conversion into an efficient, scalable, integrated, event-driven workload automation architecture that addresses the service concerns of both the business and IT.

CONCLUSION

A disjointed approach to scheduling often results in overstaffing, increased downtime, and frequent delays of business deliverables. The resulting inefficiencies drive up costs and lessen the ability of IT to respond to the needs of the business. Service optimization through IT workload automation helps address this challenge.

Many IT organizations are already realizing the compelling benefits of implementing IT workload automation. They have reduced costs, improved service, and reduced data center complexity, achieving the benefits of service optimization. A survey of BMC customers by Enterprise Management Associates validates the benefits: "On a purely financial basis, this technology (BMC CONTROL-M) delivers savings in staff costs alone of hundreds of thousands of dollars annually, not to mention the many intangible benefits including reduced complexity, efficient resource utilization, higher availability, better security, and improved IT agility."³

With the right IT workload automation solution from the right vendor, you can embark on an IT workload automation initiative and enjoy similar benefits. Not only will you realize a rapid return on your investment, but you'll also increase the business value of your IT organization. BMC Software has successfully migrated more than 2,000 companies to its IT workload automation solution, BMC CONTROL-M. For more information, visit www.bmc.com/solutions/msm-main/mfmanagement.html.

END NOTES

1. *SMART Steps Toward Consolidated Workload Automation*, Enterprise Management Associates, June 2008.
2. *Dell's SMART Approach to Workload Automation*, Enterprise Management Associates, 2008.
3. *Ibid.*

Business runs on IT. IT runs on BMC Software.

Business thrives when IT runs smarter, faster, and stronger. That's why the most demanding IT organizations in the world rely on BMC Software across both distributed and mainframe environments. Recognized as the leader in Business Service Management, BMC offers a comprehensive approach and unified platform that helps IT organizations cut cost, reduce risk, and drive business profit. For the four fiscal quarters ended June 30, 2009, BMC revenue was approximately \$1.88 billion.

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John McKenny is BMC Software's vice president of Worldwide Marketing for Mainframe Service Management (MSM), where he leads global teams responsible for the product strategy, direction, and marketing activities for BMC's three MSM brands: CONTROL-M&D, Database Management, and MAINVIEW. McKenny joined BMC in 1995 as a member of the DB2 research and development team. He has also served as a director in research and development and as senior director of marketing and product management for MSM. Prior to joining BMC, McKenny spent 15 years in various IT roles, including two years as a batch scheduling technician.

