

# Dell's SMART Approach to Workload Automation

## Executive Summary

A short time ago, Dell, like many other companies, embarked on a broad initiative to integrate and upgrade its IT services to better satisfy business needs. As part of this initiative, Dell addressed a job scheduling solution that had failed to keep pace with

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ITIL<sup>1</sup> integration. In enterprises around the world, stale job scheduling software lingers for fear of the costs and risks of conversion. Dell's experience yields the following lessons in the successful conversion and exploitation of workload automation software:

1. Choose software with a proven track record for rapid and uneventful conversions.
2. Choose a vendor with a proven track record for superior customer service.
3. Choose a solution supporting enterprise-wide frameworks that align IT services with business needs – the primary tenet of IT Service Management (ITSM).
4. Choose products that permit a modular approach so that the company can selectively target automation areas while also controlling the duration, ROI, and scope of projects.

Because Dell followed these fundamental rules, their success today extends beyond a smooth conversion into efficient, scalable, integrated, event-driven, workload automation (WLA) architecture that addresses the service concerns of both business and IT. To accomplish this, Dell chose BMC's CONTROL-M.

## Introduction

In previous papers, the ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) team has proposed a high-level modular methodology for implementation of WLA – a mature evolution of job scheduling that:

- 1) Automates complex IT processing with a business service focus,
- 2) Supports event-driven workloads across multiple platforms, and
- 3) Integrates diverse applications, architectures and systems.

The path to WLA starts with a consolidation of job scheduling across all enterprise platforms but reaches maturity as the enterprise addresses five modular “focus areas”:

- **Application Integration** – integrating application processing within a consolidated WLA system and across data center boundaries, ERP suites, Web Service deployments, Software as a Service (SaaS), and file transfer systems.
- **End-to-End Workflow Mapping** – identifying and grouping enterprise-wide workflow components by business application.

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<sup>1</sup> ITIL – Information Technology Infrastructure Library - comprehensive documentation of best practice for IT Service Management.

- **Enterprise Visibility and Management** – relating interconnected workloads with business objectives.
- **Service-Driven Management** – connecting WLA with ITSM disciplines such as event monitoring, performance monitoring, change management, and problem tracking.
- **Dynamic and Agile Workflow** – integrating WLA solutions with management tools for monitoring, provisioning, and orchestration in order to allocate computing resources as required.

An organization may implement one focus area across the entire enterprise or it may implement any number of focus areas for a single application or business unit. This modularity provides a SMART (Simple, Measurable, Achievable, Realistic, Timely) approach to WLA deployment that will increase the likelihood of success.

## About the Company

Founded in 1984, Dell, a company with 82,700 employees, 80 locations, and \$62 billion in FY2007 revenues, is a global leader in the design, manufacture and sales of desktop PCs, laptops, servers, networking products and storage devices.

EMA interviewed Chip Sturdevant, a Dell systems engineer for 11 years who architects and supports a variety of Infrastructure Management tools (monitoring, discovery, validation, CMDB), including job scheduling. Chip told a story that is consistent with Dell's longstanding process leadership, wherein IT sought to simplify and automate its scheduling in order to improve productivity, responsiveness, and quality.

## The Problem

Five years ago, job scheduling at Dell was manual, time-driven, and jointly managed by IT and various business partners. The bulk of Dell's servers ran Windows (about 20,000) and Linux (3,500); however, other platform/OS types were scattered throughout the enterprise. David K. Fisher, the system engineer who managed tools at Dell, embarked on a project to evaluate job scheduling alternatives that would centralize control, increase efficiency, and improve reliability. Concurrent with Dell's search for a robust job scheduling

solution, the company architected an enterprise-wide ITSM strategy. The existing job scheduling product did not integrate with the ITSM strategy so its replacement was inevitable. The urgency of the project accelerated when the old product began suffering repeated technical failures together with a perceived degradation of vendor support.

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## The Solution

Dell chose BMC's CONTROL-M solution for workload automation. Although Dell's selection criteria focused on fixing the problems inherent in the previous scheduler, the choice of CONTROL-M brought benefits that would far exceed the replacement requirements.

## Solution Choice

Dell needed an ITSM-compliant solution that could address the rapidly growing workloads of its diverse and globally dispersed environment without the reliability issues of its old solution. Specifically, the company named the following as requirements:

- Reliability, Stability, and Customer Service – Dell understood, based on recent experience, the pitfalls of unreliable software and unresponsive vendors.
- Scalability and Flexibility – Dell wanted a product that could keep pace with the business while also allowing more concurrency of user access and job execution.
- Windows and Linux – The product had to work well with the vast majority of Dell's servers.
- Ease of Installation – Quick, simple, and intuitive with minimal training.
- Ease of Conversion – Dell wanted a fast and easy conversion for their 12,000 job schedules.
- SQL Server Support – The previous product required an Oracle database, but Dell had largely standardized onto SQL Server. As part of the conversion, Dell wanted the ability to use their standard for the schedule repository.
- ITSM Integration – The enterprise was in the midst of a strategic ITSM implementation and required a seamless integration with its workload automation solution.
- Layered Architecture – The previous product failed to accommodate the geographical dispersion of its 13,000 locations. A layered architecture would give the company scalability, high-performance, and failure resilience.

Dell decided to implement BMC CONTROL-M based on the listed requirements but greatly benefited from the simplicity of integration with its recently acquired companion ITSM products (Remedy, Event Manager, and Batch Impact Manager) from BMC.

## Solution Effectiveness

With CONTROL-M, Dell satisfied its basic requirements of workload consolidation, scalability, superior vendor partnership, and ITSM integration. Moreover, because of its modularity, ease of use, and interfaces, CONTROL-M enabled rapid integration between change management, event management, workload automation, problem management and impact management. Though Dell set out to solve a nagging problem, the company achieved much more in terms of efficiency, availability, and visibility of its IT processes.

## Solution Deployment

Dell staff, with the assistance of BMC, converted 12,000 job schedules in about one month. The product deployment across all of Dell's global regions took about 3 or 4 months. This is important to note since case studies about implementation and customer service are often more reliable than vendor claims. In addition to the ease of implementation, Dell gave BMC top grades for vendor support. For four months, BMC kept a technician on-site full-time answering questions, resolving issues, and assisting with technical tasks.

## Vendor Support

BMC assigned a Technical Account Manager (TAM) to Dell in order to assure a smooth and successful implementation. Dell reported that the TAM managed the deployment by rapidly coordinating experts in a cross-product response to each applicable Dell trouble ticket. Dell also reported that ongoing support has been responsive and effective.

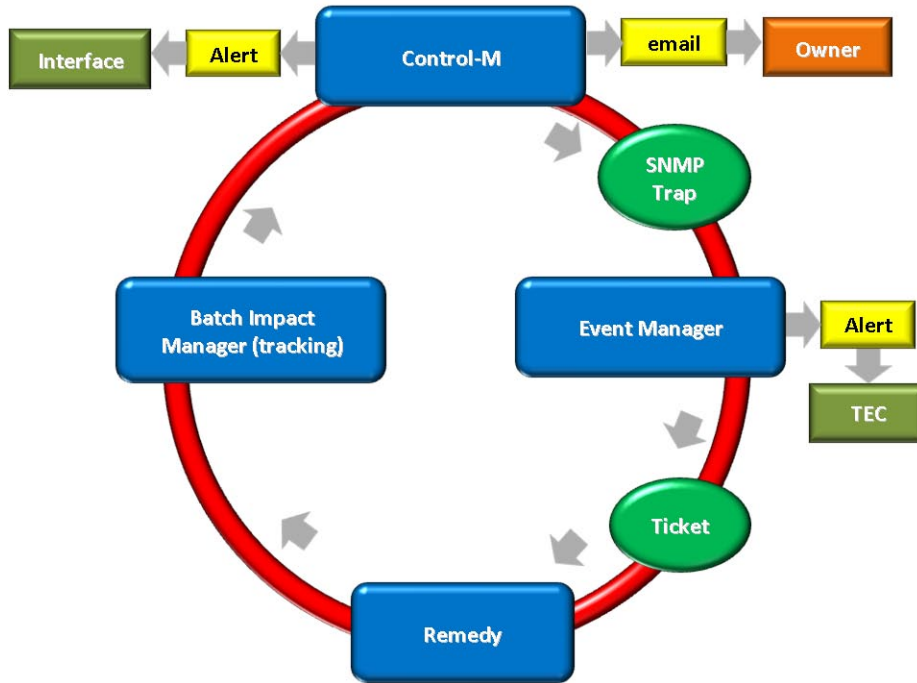


Figure 1. Dell's Workload Event Flow.

## The Results

The uneventful conversion and rollout of a massive job scheduling system elicits a collective sigh of relief from most companies. However, the real story lies beyond the rollout. With BMC CONTROL-M, Dell has expanded its schedule from 12,000 jobs to more than 85,000 while significantly reducing staff. Business partners no longer dedicate personnel for monitoring. The core scheduling staff has shrunk to four people. Outages became infrequent and brief. Dell found that it could extend its workload automation to any platform and any application with only minor effort.

The key to Dell's continued WLA success is modularity. Though still on the path to what EMA views as a fully automated workload, Dell is able to choose its next steps and size those steps for success. Dell can boast the following accomplishments:

- **Application Integration** – Dell has consolidated all enterprise job scheduling across all platforms and all business partners into an efficient central management function. The net impact is a large reduction in staffing requirements. With BMC's

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comprehensive catalog of interfaces, Dell has been able to incrementally achieve Application Integration.

- **Service Driven Management** – Dell has migrated from a completely time-driven to mostly event-driven job scheduling. They have done this with a series of manageable steps and, in so doing, have moved closer to Service-Driven Management.
- **End-to-End Workflow Mapping** – Figure 1 shows a flow of workload events that automates business impact analysis, alerting, e-mails, and trouble tickets. Impact analysis is not possible without mapping CMDB Configuration Items (CIs) to business service levels. Dell has made large strides toward end-to-end workflow mapping in large part because BMC allows a piecemeal approach.
- **Enterprise Visibility and Management** – The flow of workload events (as shown in Figure 1) bridges the gap between technology silos and broader enterprise visibility and partly reveals how CONTROL-M fits into BMC's broader vision of Business Service Management.

With the modularity of BMC's architecture, Dell has been able to take manageable and cost-effective steps toward fulfillment in each WLA focus area. As a result, some focus areas (e.g., Application Integration) are comprehensive while others (like Dynamic and Agile Workflows) are still in development.

## EMA Perspective

EMA understands and sympathizes with the reticence to replace labor-intensive and poorly integrated job schedulers with a comprehensive workload automation solution. The task seems large; the risk seems unnecessary; the pain seems bearable and budgets are so tight. EMA advises that this is exactly the right time for WLA – because with the right vendor and right products, the task is easy, the risk is small, and the rewards are enormous. Workload automation, as outlined in this and previous papers, brings efficiency,

agility, and cost savings at just the time when budgets are forcing painful cutbacks. WLA makes sense right now because a modular approach to workload automation is like a piggy bank that yields cash no matter how many times you shake it. A well-constructed, well-integrated, and well-supported WLA solution enables a company to corral complex enterprise-wide IT processes with a series of measured, cost-effective, low-risk initiatives. Sometimes the solution really matches the hype.

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