

# **Faster, Cheaper, Safer: Improving Agility, TCO, and Security with Agentless Job Scheduling**

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A White Paper Prepared for BMC Software  
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**ENTERPRISE MANAGEMENT  
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# Table of Contents

- Executive Summary ..... 1
- Introduction ..... 1
- The Current Standard – Agent-Based Scheduling..... 1
- The Revolution – Agentless Job Scheduling..... 1
  - How It Works..... 2
  - Benefits of Agentless Job Scheduling..... 2
  - Recommended Use Cases ..... 3
- EMA’s Perspective ..... 3
- About BMC Software..... 4

# Faster, Cheaper, Safer: Improving Agility, TCO, and Security with Agentless Job Scheduling

## Executive Summary

Enterprise job scheduling is a mature and mission-critical IT capability that supports some of the most important business processes throughout a modern enterprise. Areas like accounting, ordering, inventory, and procurement are all likely to rely on job scheduling technology. Most common job scheduling architectures involve deploying agent software on every system in the enterprise. However, depending on the parameters of the situation, these agents may be more expensive to install and maintain.

BMC Software is addressing these potential issues with a revolutionary solution – agentless job scheduling with BMC CONTROL-M. This solution provides a way to schedule, submit, and monitor jobs on almost any platform without installing a local agent using industry standard communication protocols. This makes deployment faster, more cost-effective, and secure; ensures a very broad range of compatible systems; and reduces Total Cost of Ownership (TCO). Importantly, BMC CONTROL-M offers a choice of agentless and agent-based capabilities, providing users with the best of both worlds to meet their enterprise production management requirements.

Enterprise Management Associates (EMA) believes that this solution is setting a new standard in job scheduling, providing enterprises with unrivalled flexibility and agility, and significant cost benefits. With both agent-based and agentless job scheduling, BMC CONTROL-M provides a flexible, secure, and functional solution to a significant enterprise problem.

## Introduction

Enterprise job scheduling is a mature and mission-critical element in most enterprises' infrastructure. It allows enterprises to execute complex, interdependent batches of high-volume IT processing, across multiple systems and applications, based on predefined process flows or specific events with minimal manual intervention. Whether it is settling financial transactions, processing customer orders, fulfilling inventory requirements, reporting on general ledger, backing up data, or a myriad of other business processes, job scheduling has a critical role in most enterprises.

Job scheduling has expanded from its inception as a single-platform solution, to an enterprise-wide system, with the most common architecture requiring scheduling agents to be installed throughout the enterprise. This agent-based approach can create security issues, impact compliance, and add to the total cost of ownership. New technology from BMC Software addresses these issues with agentless job scheduling – a revolution in job scheduling that provides highly functional and secure job scheduling capabilities without requiring an agent on each managed system.

This EMA white paper will explore some of the byproducts of agent-based job scheduling, review the implementation and benefits of agentless job scheduling, and provide recommendations for deploying job scheduling using both agent-based and agentless job scheduling.

## The Current Standard – Agent-Based Scheduling

The current standard for enterprise job schedulers is based on having dedicated agents on every system. These agents are lightweight in most cases, allowing scheduling servers (“the brain”) to execute, monitor and control jobs on the platforms that the agents are installed on. In addition, they also provide a set of scheduling utilities and APIs that are made available to local applications that require automation services and queries. This approach, which has proven to be successful in a variety of production environments and industries, can also present challenges specifically when targeting a large number of servers of different OS flavors and versions. These challenges include mass installations and maintenance of agents, network configuration and firewall ports, OS and application version compatibility, and the inability to access unmanaged systems.

While agents are based on effective technology with a proven track record, mass deployment of agents can raise the total cost of ownership and delay time to value of agent-based job scheduling solutions.

## The Revolution – Agentless Job Scheduling

BMC Software is addressing these problems with a new standard – agentless job scheduling.

# Faster, Cheaper, Safer: Improving Agility, TCO, and Security with Agentless Job Scheduling

## How It Works

Agentless job scheduling enables a remote server or controller to submit processes to execute on any connected system, without installing an agent on that system. BMC CONTROL-M does this by connecting across the network to the target system, submitting the desired process, and monitoring its status, using Windows Management Instrumentation (WMI) or Secure Shell (SSH). WMI is included with Microsoft Windows, and SSH is available for UNIX, Linux, Windows, IRIX, NCR, AS/400, Tandem, and VMS – often included with the base operating system.

Because there is no special installation required on the target system, implementation is very fast. New agentless systems can be accessed automatically, with default settings, using auto-discovery. It is secure, because the standards-based approach, using WMI or SSH, means there is no need for root or administrator authentication, or for additional firewall openings.

## Benefits of Agentless Job Scheduling

Agentless job scheduling has many clear benefits, including:

- Simple and rapid deployment and maintenance, with zero-footprint, enabling rapid out-of-the-box deployment which reduces TCO
- Immediate compatibility with new platforms ensuring IT can offer first day support for any new platform or application
- Ongoing compatibility with legacy and out-of-support systems allowing IT to defer unnecessary upgrade costs
- Complete audit and control for ad-hoc submission and fire-call access, even on unmanaged boxes, improving security and compliance

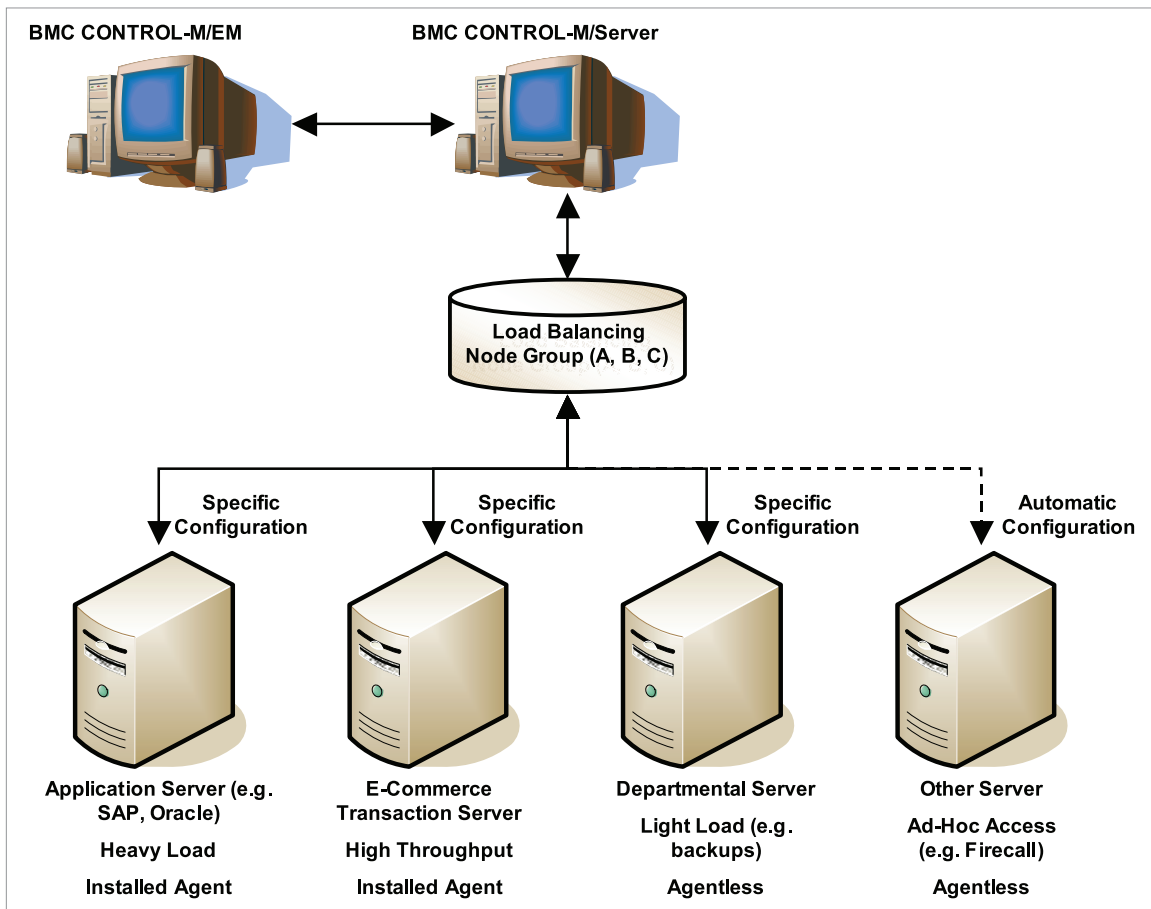


Figure 1 – Example of BMC CONTROL-M Hybrid Agent/Agentless Job Scheduling Architecture

# Faster, Cheaper, Safer: Improving Agility, TCO, and Security with Agentless Job Scheduling

However, agentless job scheduling does not entirely replace agent-based job scheduling, which continues to have specific benefits. For example, initiating remote calls can fractionally delay or limit the volume of job submissions, so where high performance, high volume, and fast throughput is essential, dedicated agents provide better support. A dedicated server-agent environment often maintains a persistent connection, providing better visibility for continual monitoring of critical path processing. Proprietary agents can also provide additional non-standard function calls, delivering a wider range of functionality and greater flexibility than the standards-based WMI and SSH. In addition, non-stable networks would be a more suitable fit for agent-based technology as SSH and WMI do not support terminated sessions nor do they provide consistency when the session is lost.

## Recommended Use Cases

Agentless job scheduling is ideal for many use cases, such as:

- Systems that are running just a small to moderate number of jobs (e.g. backups)
- Systems that are not directly under IT control – such as departmental application servers
- Where IT needs to provide fast application deployment to meet unexpected business demands
- Unmanaged systems that need unexpected ad-hoc processing – especially emergency fire-call access
- Smaller and medium-sized enterprises with fewer servers and jobs requiring less attention to scalability

Agent-based job scheduling is also ideal for many use cases, such as:

- Systems that are running a large volume of jobs (e.g. for complex application integration)
- Systems that require fast throughput, such as large enterprise servers (especially mainframes)
- Dedicated batch transaction processing engines (e.g. e-commerce back-end processing)

- Mission-critical batch that must be constantly monitored for potential business impact
- Where proprietary functionality is required (e.g. for packaged applications like SAP or Oracle)

The best solution, therefore, is to provide a choice of agent-based job scheduling for some systems, and agentless for others. BMC CONTROL-M provides enterprises with the flexibility and agility to mix and match between agent-based or agentless job scheduling. Both modes integrate with the standard BMC CONTROL-M architecture, so agentless deployment is transparent to existing CONTROL-M customers. This architecture will even support advanced features such as load balancing across agent-based and agentless systems

## EMA's Perspective

As an existing standard, agent-based job scheduling has proven to be highly reliable, functional, and capable of handling very high volumes, and retains a valuable place in an enterprise architecture. However, the overhead and byproducts of agents may be significant for some sites, and until now no enterprise-scale solution was able to address those issues without significant customization. With this new capability, BMC CONTROL-M is setting a new standard in job scheduling, providing enterprises with unrivalled flexibility and agility to deploy enterprise-class agent-based and agentless scheduling “out-of-the-box.” Using standards-based remote access protocols ensures fast deployment and interoperability for a very wide range of platforms. It also addresses significant issues in security and compliance by ensuring there are no clear text passwords exposed in network traffic, no undocumented holes in firewalls, and fire-call access can be secured even on normally unmanaged platforms. Enterprises will be able to support new platforms and applications much faster, improving time to value and increasing revenue opportunities from new business initiatives. Maintenance and management expenses will decrease, as the agentless deployment will require less platform-specific training and management effort. Enterprises will also be able to support old platforms for longer, delaying additional upgrade expenses and squeezing every dollar out of existing investments.

BMC Software is raising the bar over their competitors with this initiative, and providing a solution that will benefit any enterprise, large or small. Now with the

# Faster, Cheaper, Safer: Improving Agility, TCO, and Security with Agentless Job Scheduling

choice of both agent-based and agentless job scheduling, BMC CONTROL-M provides strong benefits with a flexible, secure, and functional solution to a significant enterprise problem.

## About BMC Software

BMC Software, Inc. [NYSE:BMC] is a leading provider of enterprise management solutions that empower companies to manage their IT infrastructure from a business perspective. Delivering Business Service Management, BMC Software solutions span enterprise systems, applications, databases, and service management. Founded in 1980, BMC Software has offices worldwide and fiscal 2005 revenues of more than \$1.46 billion. For more information about BMC Software, visit [www.bmc.com](http://www.bmc.com).

### **About Enterprise Management Associates, Inc.**

Enterprise Management Associates is an advisory and research firm providing market insight to solution providers and technology guidance to Fortune 1000 companies. The EMA team is composed of industry respected analysts who deliver strategic awareness about computing and communications infrastructure. Coupling this team of experts with an ever-expanding knowledge repository gives EMA clients an unparalleled advantage against their competition. The firm has published hundreds of articles and books on technology management topics and is frequently requested to share their observations at management forums worldwide.

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