Open Source Strategy for the Digital Enterprise

Deliver best-in-class automation with open source and BMC BladeLogic
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Executive Summary

Open source alternatives continue to make inroads in the enterprise, and this is particularly true for open source configuration automation tools like Chef™ and Puppet™. While these tools can be a good way to automate specific tasks, they weren’t designed to deliver complete data center automation capabilities. As a result, IT teams contend with significant automation limitations or highly cumbersome integration efforts.

BMC offers IT teams a compelling alternative. With BMC, these groups can still leverage their existing open source tools and code, while gaining comprehensive, enterprise-grade automation capabilities. As a result, organizations can get maximum utility from their investments and efforts, while fully capitalizing on the business gains promised by end-to-end data center automation.
INTRODUCTION

Open source versus commercial software. In the tech world, there may not be any other topic that can inflame such passionate arguments, criticisms, and rebuttals. On one hand, to hear an open source advocate, emerging open source tools will most definitely mean the end of proprietary software alternatives as we know them. On the other hand, proponents of commercial software offerings may feel they’d never go through the risk and effort of using open source in any significant way in their organizations.

In evaluating the merits of open source as a class of solutions, it is important to do so with an objective analysis, and to evaluate the claims made on any side of the debate. The reality is open source versus commercial isn’t really a choice that has to be made, either across the board or in a specific arena. Most organizations will benefit from a mix of open source and commercial solutions, and the right mix of technologies will necessarily vary from one organization to another.

In recent years, open source technologies have gained widespread adoption in a number of areas, including virtualization, supercomputing, operating systems, databases, web servers, and more. For IT teams in a range of organizations, the use of open source configuration automation tools like Chef and Puppet has grown increasingly common. These tools can be useful in automating a range of tasks, for example:

- A developer can use Chef to write an LWRP (a lightweight resource or provider) that adds or removes domains from a DNS server.
- An administrator can write a Puppet module that installs a software package manager or that builds a configuration file.

To help organizations identify their optimal approach, this paper examines open source configuration automation platforms and how they differ from BMC BladeLogic Server Automation.

Open source technologies gaining widespread adoption:

- Virtualization
- Supercomputing
- Operating Systems
- Databases
- Web servers
- and more

BMC BLADELOGIC SERVER AUTOMATION: BRIEF INTRODUCTION

BMC BladeLogic Server Automation provides a policy-based approach for IT administrators to manage their data centers with greater speed, quality, and consistency. BMC BladeLogic Server Automation enables customers to leverage proven, process-driven approaches for doing automated management, control, and enforcement of server configuration changes. By delivering comprehensive, integrated solutions not only for configuration management, but orchestration and IT service management, BMC represents a single vendor that can support customers’ end-to-end data center automation initiatives.

The solution offers broad support for all major operating systems on physical servers as well as leading virtualization and cloud platforms. The platform makes it easy for IT to install and configure server changes. Rich out-of-the-box content helps IT automate continuous compliance checks and remediation in support of regulatory requirements such as the Payment Card Industry Data Security Standard (PCI DSS) or security standards like DISA.

BACKGROUND: CONSIDERING OPEN SOURCE’S HISTORY AND FUTURE IN THE ENTERPRISE

In most enterprises, open source configuration automation tools have been implemented in a tactical fashion, introduced by individual administrators or small teams. These implementations therefore lack any coordination with the initiatives, plans, and efforts of high-level IT management and compliance officers. While individual developers and small teams will tend to have a more narrow focus on specific deliverables, these higher-level managers and executives will be concerned with the consistent adherence with policies across the organization. An administrator may be focused on expediting the next upgrade, but business leadership will be focused on aspects like global governance and “day two” operations like patch management.

When formulating technology strategies and plans, it is important to consider these different perspectives, and how to ensure they are aligned effectively.
Leadership will ultimately be well advised to identify whether open source alternatives make sense, even at a group level. While open source tools may offer specific capabilities that address a part of the automation picture, the reality is that BMC BladeLogic Server Automation addresses many of the same requirements, and a lot more. It is important to recognize that employing a number of point tools throughout the organization introduces a great deal of complexity and cost, even when the specific tools themselves may be free. Ultimately, the question to consider is whether the advantages a point tool may deliver in a specific arena outweigh all the advantages of having a unified platform that can address the needs of the entire organization—and so offer much higher levels of standardization, simplicity, and efficiency.

OPEN SOURCE LIMITATIONS, AND WHY THEY MATTER

Functional limitations
Open source configuration automation tools have emerged to address narrow requirements. While they may enable the execution of server automation, they don’t offer robust, enterprise-grade capabilities for doing complete data center automation.

These tools lack a user interface that is on par with the advanced applications being implemented in enterprises, and they lack many pre-packaged capabilities, instead relying on developers to code the functionality that may be needed in a specific organization. It is also important to recognize that these tools were architected and developed in a very UNIX-centric fashion. While this may be ok with organizations that have a focus on the UNIX® platform and a large staff of UNIX experts, this can be problematic for organizations that have staff with a mix of technical backgrounds and experience levels. Finally, given their open source heritage, managers can expect that open source tools will typically grow more complex over time, which can make them harder to manage as environments grow more mature.

Given their limited capabilities, open source platforms ultimately require the integration of multiple tools from a number of vendors to support full data center automation. This exposes the business to errors, finger pointing, product misalignment, and complexity. In addition, due to the programmatic nature and their complex integrations, organizations need to employ their most senior and costly administrative and development staff to implement and support the system on an ongoing basis.

By contrast, BMC:

- Offers a single-vendor solution for data center automation, providing capabilities for automating the management of servers, patches, applications, networks, and run books.
- Delivers a powerful and intuitive user interface that can be integrated with other BMC products, without any programming effort.
- Provides enterprise-class automation capabilities, seamless extensibility, and pre-packaged templates.
- Enables IT teams to more consistently and effectively address policies and security and compliance requirements across the entire organization.
- Features a powerful and easy-to-use interface, which means staff members with a broad range of skillsets, backgrounds, and experience can get started quickly and be productive with the solution.
- Represents a single vendor that stands behind comprehensive automation capabilities, including not just configuration management, but service management, orchestration, and more—reducing the risk of undetected errors, misaligned products, and incomplete integrations.

By leveraging these advantages, customers can minimize their risk of software failure, reduce manual effort, ensure consistent compliance, and have more peace of mind.

Compliance templates
Open source configuration automation tools fundamentally lack pre-defined policy templates for specific regulatory and security policies like Sarbanes-Oxley, PCI DSS, and so on. Instead, these alternatives require organizations to do extensive scripting to align with relevant mandates. Further, these tools’ limitations mean that IT teams have to integrate multiple vendor solutions in order to gain the capabilities required to do closed-loop automation.

The result is that it is time consuming to establish effective policies and ensure that they are in alignment with relevant mandates. In many organizations, hundreds or thousands of lines of code will be required to institute the needed policies, which can introduce errors, gaps, and inconsistency. This means that organizations face a higher likelihood that regulated systems will be out of compliance, which may result in breaches, failed audits, and other costly ramifications.
By contrast, BMC:

- Offers extensive, pre-packaged policy templates that enable efficient enterprise-wide compliance management.
- Delivers an intuitive interface that enables non-technical users to review compliance policies.
- Represents a single vendor that can provide closed-loop compliance capabilities, meaning customers work with one vendor and one support organization.

With these capabilities, BMC enables customers to more consistently, easily, and efficiently address relevant compliance requirements across the entire enterprise.

**Role-based access control**

Open source configuration automation platforms offer very rudimentary capabilities for managing access policies for console users. For example, administrators can’t assign roles to specific servers or server groups, but rather only for all servers in the environment. As a result, any administrator with permissions to one server will have the same permissions across all servers. Further, access controls can only be applied to console-based access rather than command-line access.

Given these limitations, IT teams can’t enforce controls in a granular fashion. This leaves the business increasingly exposed to breaches and failed compliance audits.

By contrast, BMC offers strong, highly granular roles and permissions, including capabilities for assigning permissions at the object level. This enables organizations to institute and enforce stronger policies that are closely aligned with security, compliance, and business requirements.

**HOW ORGANIZATIONS CAN USE OPEN SOURCE AND BMC**

As outlined earlier, there may be cases where organizations will want to leverage their existing open source code and investments, while at the same time instituting comprehensive, end-to-end automation across the enterprise. BMC BladeLogic Server Automation offers a number of options for organizations looking to take this hybrid approach.

With this solution, IT organizations can develop and continue to leverage the manifests, modules, recipes, and cookbooks developed in Puppet and Chef, and manage them in BladeLogic. To illustrate, consider the following scenario: An organization wants to stage a rollout of an application patch across 10,000 servers. Depending on their preferences and objectives, development teams can choose to build the patch as a Puppet module, a Chef recipe, or a BladeLogic BLpackage. They can then use BMC BladeLogic Server Automation to do all of the following:

- Prepare the job.
- Pre-stage the patch across all the organization’s globally distributed data centers.
- Manage required reviews and approvals.
- Execute the patch installation automatically as servers enter appropriate maintenance windows.
- Ensure any new servers automatically get the patch as part of the initial configuration.
Development and integration workflow details

When their organizations are looking to leverage both open source tools and BMC BladeLogic Server Automation, developers can choose from two different approaches:

- First, they can treat open source artifacts, such as Puppet manifests or Chef recipes, as BMC BladeLogic Server Automation objects. Chef artifacts can be brought into BMC BladeLogic Server Automation through the command line interface. Puppet artifacts can be imported into the BMC solution via the native console and the command line interface.
- Second, they can leverage BMC BladeLogic Server Automation’s native commands directly from within the open source artifact.

CONCLUSION

Today’s IT teams are contending with a number of significant challenges, with compliance requirements, budgetary constraints, and technological evolution all serving to intensify the demands. It is only by moving towards comprehensive, strategic, and unified data center automation that IT organizations will be equipped to meet all these demands. While open source configuration automation tools can play a role in addressing these objectives, they can’t deliver the complete, end-to-end automation that businesses require. With BMC BladeLogic Server Automation, IT teams can leverage their code and investments in open source, while gaining the comprehensive capabilities required to realize optimal data center automation implementations.
BMC delivers software solutions that help IT transform digital enterprises for the ultimate competitive business advantage. We have worked with thousands of leading companies to create and deliver powerful IT management services. From mainframe to cloud to mobile, we pair high-speed digital innovation with robust IT industrialization—allowing our customers to provide amazing user experiences with optimized IT performance, cost, compliance, and productivity. We believe that technology is the heart of every business, and that IT drives business to the digital age.

BMC – Bring IT to Life.

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