

IBM + HASHICORP

DELIVERING INFRASTRUCTURE AUTOMATION AT SCALE

SUMMARY

Cloud computing continues to deliver transformative capabilities for organizations of all sizes. Its ability to scale resources based on demand, improve accessibility, reduce infrastructure costs, and enable quick deployment of applications is without question. However, the continued growth and adoption of cloud-native applications, as well as multi-cloud and hybrid cloud infrastructure deployments, present challenges for enterprises.

For starters, developers are often forced to spend less time creating value-added features in lieu of prescriptive coding to ensure the highest levels of security. Furthermore, cloud tool sprawl in the absence of fully integrated solutions tends to reduce productivity, delay time-to-market and slow innovation. This all leads to the adoption of manual processes that create higher operational costs, diminishing the value of technology investments. The use of disaggregated cloud and on-premises infrastructure also expands threat surfaces and reduces network and security operator visibility, weakening cyberattack defenses.

In this context, enterprises face mounting pressure to strengthen infrastructure and security controls while reducing operational complexity. Consequently, IT stakeholders demand highly automated and integrated platforms that streamline deployment and management processes while enabling digital transformation at scale.

Moor Insights & Strategy believes that IBM's acquisition of HashiCorp leaves IBM well positioned to address these demands by simplifying infrastructure operational control, lowering costs, and hardening security through higher degrees of automation and the ability to support the application of next-generation AI operations aimed at optimizing business outcomes.

MANAGING CLOUD INFRASTRUCTURE COMPLEXITY

Managing cloud infrastructure is a daunting task, given the number of cloud service providers, heterogeneous architectures, and a proliferation of tools designed to stitch together deployment and ongoing operational functionality. IBM's recent acquisition of HashiCorp aims to simplify cloud infrastructure management through higher levels of

integration and automation, resulting in the creation of consistent and predictable workflows across hybrid and multi-cloud environments. HashiCorp has a solid history of delivering these capabilities and, in the process, mitigating risk, reducing cost, and accelerating time-to-value for cloud-native applications and services.

The impact of automation is powerful. It can dramatically reduce costs and improve return on investment by removing human intervention from the loop. Automation also lowers risk and improves business outcomes by eliminating tedious tasks prone to error. Additionally, automation accelerates cloud-native application developer productivity, freeing these professionals to spend more time innovating versus coding to guardrails. Many infrastructure providers claim end-to-end automation capabilities, but few deliver on automation's true promise. MI&S believes that IBM Red Hat's depth in hybrid cloud and automation, buoyed by HashiCorp's significant infrastructure lifecycle management and security capabilities, leaves the company poised to deliver what enterprises demand.

SECURITY CONSIDERATIONS

Despite their immense value, multi-cloud and hybrid infrastructure deployments expand threat surfaces substantially. Indeed, the continued acceleration of multi-cloud services for best-of-breed functionality, as well as virtualization and containerization for operational agility, makes underlying infrastructures significantly more vulnerable to attack. Compounding these challenges are bad actors that are becoming more sophisticated, weaponizing tools such as generative AI to augment ransomware and wide-scale denial-of-service attacks.

To keep pace, enterprises must deploy tech stacks that integrate automation and security functionality in a holistic fashion. In doing so, IT operations can be simplified through a single pane of glass — providing dramatic improvements in observability, network availability, resiliency, developer operations, and security relative to layered point solutions. MI&S believes that the combination of IBM and HashiCorp has the potential to deliver what enterprises require in a fully integrated cloud application and security platform.

BETTER TOGETHER — TERRAFORM AND ANSIBLE

IBM and HashiCorp bring highly complementary strengths to bear with respect to hybrid cloud infrastructure deployment, ongoing management, and security. From a lifecycle management perspective, HashiCorp's Terraform stands out as one of the most popular

open source day-zero/day-one infrastructure-as-code tools that simplifies code complexity, provisioning, and the decommissioning of infrastructure at application end-of-life. It allows developers to identify a desired end state for cloud or on-premises infrastructure as well as generate plans to reach targeted goals and provision underlying infrastructure. On the other hand, IBM's Red Hat Ansible Automation Platform is designed to scale day-one/day-two automation deployment across different domains and use cases, as well as train AI models with playbooks and rulebooks and enforce consistent security policies. Three examples of the highly complementary nature of Terraform and Ansible are:

- Cost optimization realized through a single source of truth. Ansible can reference Terraform state files as inventory to run day-one and day-two automation.
- Risk mitigation realized through product integrations, such as the ability for Terraform to call an Ansible workflow at the end of a provisioning cycle.
- Improved time-to-value realized through the creation of combined workflows, such as Ansible calling Terraform provisioning schemes directly.

PLATFORM INTEGRATION VALUE

Combining the IBM and HashiCorp portfolios also has the potential to further strengthen enterprise security posture beyond cross-domain security policy management. The adoption of containerization has revolutionized the way developers can test and deploy cloud-native applications across different operational environments. However, it often comes at the risk of secret exposure when manual secret rotation practices are employed across Kubernetes clusters. MI&S believes that Red Hat can strengthen the integration of OpenShift with HashiCorp Vault to address this concern through automatic rotation of secrets, centralized control, and streamlined cross-cluster permission management.

Furthermore, IBM's stated commitment to maintain Vault's agnostic secrets-synching capability — coupled with data encryption and centralized identity management through IBM Guardium and Verify — provide customers with deployment flexibility. There is also great potential to leverage IBM's existing automation platform, including connecting platform engineering teams with additional cost prediction and optimization insights powered by IBM's Turbonomic and Cloudability offerings.

MI&S believes that the combination of IBM and HashiCorp has the potential to significantly improve infrastructure lifecycle management through high degrees of automation while simplifying and hardening security operations. The depth of each

company's portfolio is significant, and the opportunity to further strengthen functionality through integration and a blended engineering effort is clear. Ultimately, developers and their organizations stand to benefit as a result.

CALL TO ACTION

Automation unlocks the ability to facilitate cloud-native application development and deployment, as well as manage the underlying multi-cloud and hybrid cloud infrastructure elements. However, many automation platforms today are incomplete and expose enterprises to unacceptable risk through developer productivity limitations, higher operational costs, poor visibility, and weakened security posture.

MI&S believes that IBM's acquisition of HashiCorp can address these challenges and, in the process, deliver infrastructure automation at scale. The expected deeper integration of HashiCorp's Terraform and IBM's Red Hat Ansible Automation Platform is positioned to optimize cost, mitigate risk, and improve time-to-value while giving enterprises the flexibility to continue using HashiCorp's tools, including Vault, on a standalone basis.

To learn more about IBM's acquisition of HashiCorp, visit <https://www.ibm.com/products/hashicorp>.

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