

Platform Engineering Delivered Infrastructure as Code (IaC)

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PLATFORM ENGINEERING orchestrates Infrastructure as Code (IaC) to achieve a golden path to DevOps productivity and reliability for achieving business goals. With the integration of IaC with platform engineering, infrastructure provisioning, deployment, and management can become simpler, more consistent, and automated.

The combination applies to CI/CD and internal operations management and extends across cloud environments as well as on-premises. It is typically offered to the user through a self-service abstraction layer. When successfully implemented with tools like Terraform and Ansible, benefits are achieved anywhere infrastructure in the organization is deployed and managed with just a few lines of code.

In a 2024 Techstrong Research poll of security, cloud and DevOps professionals, the practitioner community expressed enthusiasm for how the platform engineering and IaC combination serves as an essential extension of DevOps. The analysis evaluates the alignment of platform engineering's capabilities with the speed and flexibility of Infrastructure as Code can impact the rate of adoption, existing challenges and potential successes.

Key Takeaways

1. Uniformity of infrastructure configuration and management is achieved thanks to the availability of a self-service platform.
2. Benefits accrue for infrastructure management across all environments, freeing developers to focus solely on application development rather than provisioning infrastructure.
3. The streamlined and consistent execution of infrastructure tasks boosts scaling efficiency and productivity via a self-service platform accessible organization-wide.
4. Automation of repetitive tasks is key and is also one of several benefits.
5. Platform engineering, while newer than IaC, should further accelerate the adoption of both.

TECHSTRONG RESEARCH ANALYST VIEW

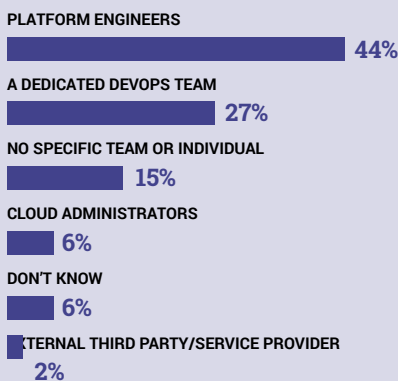
The integration of IaC with platform engineering offers a consistent self-service infrastructure, or platforms, allowing for the rapid provisioning of infrastructure across all environments, across both the cloud and on-premises. As platform engineering involves the creation of self-service platforms, standardized configurations and security improvements, IaC is able to deliver with speed, consistency and repeatability. Without this level of discipline, IaC has the potential to become unwieldy resulting in the opposite of standardized, reusable configurations.

Utilizing a self-service platform for managing cloud resources and system configurations can improve productivity and resource efficiency across the organization. Application developers can focus more on their core task of developing applications and much less time setting up and maintaining infrastructure.



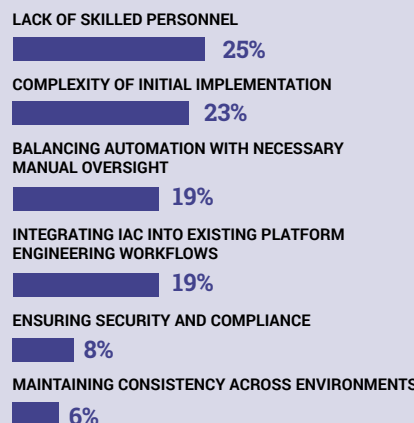
Who in your organization is primarily responsible for integrating Infrastructure as Code (IaC) with platform engineering practices?

44% of platform engineers are responsible for integrating IaC with platform engineering practices. This may be due to platform engineering choosing IaC to meet its needs, leaving the hands-on integration to the DevOps team (27%). Alternatively, organizations with cloud-centric operations may assign this task to the cloud admin (6%).



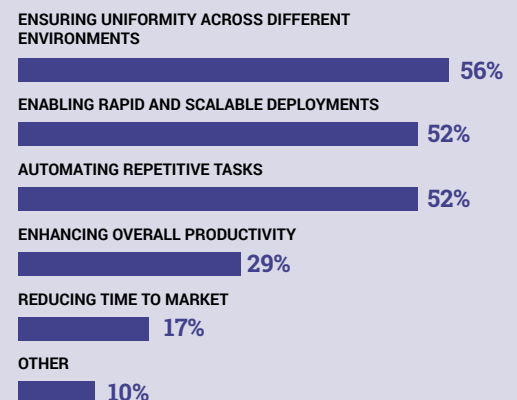
What is the biggest challenge your organization faces in combining IaC with platform engineering?

Challenges include a lack of available talent (25%) and implementation complexity (23%), the foremost roadblocks to adoption. Balancing automation with manual control (19%) is also a common concern, highlighting the risk of over-reliance for every use case. Security and compliance (8%) are not primary concerns, indicating confidence in the potential offered by platform engineering and IaC in these areas.



Which benefits of Infrastructure as Code have been most impactful in your platform engineering efforts?

The perceived benefits of how IaC instrumentalizes platform engineering correlate with the touted advantages: the majority said the benefits include ensuring uniformity and consistency among environments (56%), enabling rapid and scaled deployments (52%), and automating tedious and redundant tasks (29%).

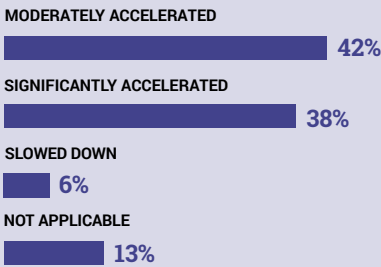


Techstrong Research recommends taking an intentional approach to assigning IaC to platform engineering to ensure the desired outcomes are achieved. Short-term efficiency may be a priority, but it can't be at the expense of developers' and operators' experiences. Objectives and measures may need to be adjusted as platform engineering achieves levels of maturity in managing IaC.

Thanks to the disciplines of platform engineering, application development cadences can be improved, allowing more resources to be devoted to creating and enhancing application features and reducing technical debt. Despite remaining challenges in implementation skills and complexity, standardized configurations offered via self-service platforms realize the promise of platform engineering's potential for delivering significant benefits for DevOps in most organizations.

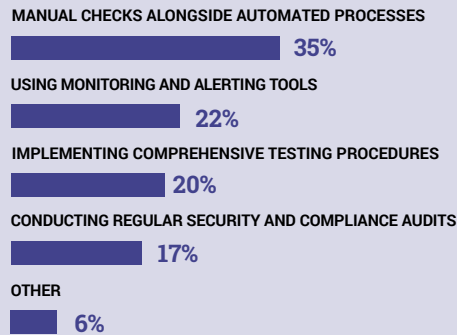
How has the adoption of IaC influence your organization's development and testing process?

Improvements to the development process were overwhelmingly appreciated, as 38% reported a significant acceleration and 42% witnessed a positive, albeit moderate, acceleration in the developer and testing process. Perhaps the slim minority of 6% that observed a slowdown in their software production pipeline struggled with technical challenges that proper engineering and tools could potentially resolve.



What methods has your organization employed to balance automation with oversight in IaC implementation?

A significant number of respondents (35%) rely on manual methods to verify or review the accuracy of IaC automation. Many of these may be spot checks versus manual checks of large numbers of executions. Monitoring, testing, and audits are relatively similar in terms of usage percentage.



How does your organization measure the success and efficiency of its Infrastructure as Code initiatives within platform engineering?

Time savings (25%) and feedback from platform engineering "customers" (22%) serve at the top of success measurements. This indicates a good balance of efficiencies and recognition that others in the organization must also benefit by IaC and Platform Engineering.

