

# Simplified, Secure & Seamlessly Efficient: Trends Shifting The Developer Landscape

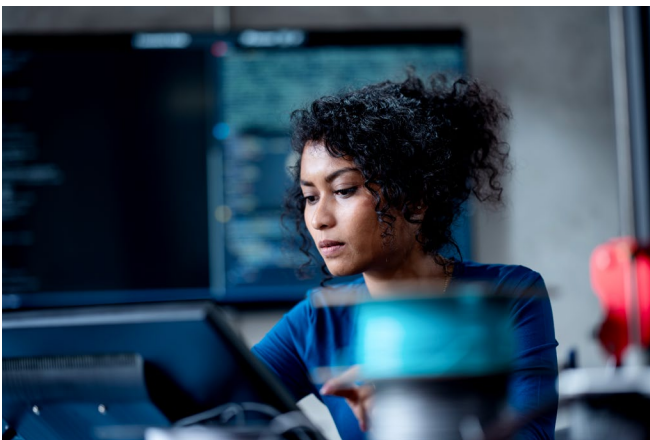


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Originally Published on [Forbes.com](https://www.forbes.com) Dec 12, 2024, 10:33am EST

By Deborah Orr

AI-powered tools and cloud-native application methods are enabling more agile development and accelerating new possibilities. But with new tools, come new hurdles: Without the right infrastructure, these technologies can overwhelm developers tasked with innovating within complex, mission-critical enterprise systems.



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A survey of over 400 C-suite executives, business line leaders and other IT decision-makers across industries conducted by Forbes in partnership with Amazon Web Services (AWS) reveals that accelerating technology development and implementation for faster time-to-market is one of the most important drivers in their tech transformation. However, forty-three percent of respondents believe developers are overworked and at risk of burnout.

“For large enterprises ... the technology stack is very wide and very deep [and] developers are overwhelmed by the amount of frameworks and choices [out there],” says Adib Saikali, distinguished software engineer at VMWare Tanzu, an application development and deployment platform and an AWS partner.

Streamlined platform engineering is vital to ease developer workloads and improve enterprise app development, deployment and security. The heaviest lift will happen in the cloud. Cloud-native development is expected to grow exponentially, with 77% of executives predicting significant increases over the next three years.

Ahead, we explore key trends and challenges shaping the developer experience and what enterprises need to drive results, from seamless cloud-native architecture to streamlined tools to overcoming security and compliance hurdles.

## Going Cloud-Native: Improving Developers' Ability To Deliver Business Value

Cloud-native deployment is revolutionizing app development, empowering developers with greater business insight. “I define cloud as an operating model and not [just] a place where an application runs,” says Saikali. Moving to cloud platform-based environments is one of the initiatives that will have the greatest impacts on developer productivity, according to 75% of surveyed executives, and 79% say

developers' job satisfaction has increased with the use of cloud-based platforms.

Executives anticipate a continued shift of enterprise applications and data to the cloud: Forty-six percent plan to run most of their enterprise applications in the cloud three years from now, up from only 23% currently.

With a traditional model, a developer builds an application and passes it to separate teams for production, who often use entirely different tools. This compartmentalized approach could leave development teams without access to the application's environment or insights into whether it meets business requirements.

A cloud-native approach accelerates the feedback loop between developer and end user. Cloud-native applications use microservices—discrete, reusable components that integrate into any cloud environment. Microservices work together to orchestrate the application while being independently scalable, improvable and faster to iterate than traditional monolithic systems.

Forty-five percent of respondents say their organizations are already using microservices architecture to integrate artificial intelligence and machine learning capabilities into existing and new enterprise applications. And nearly three-quarters of surveyed executives believe that improved integration of cloud-native services will impact developers' ability to deliver business value.

With a cloud-native model, a developer can add a feature to an app with the press of a button—and ask the business user for immediate feedback while it's still top of mind, creating a develop-operate-optimize loop. "This is absolutely insanely critical for AI," Saikali says.

## The Developer's Dilemma: Easing Workloads As New Technologies Arise

Development teams must balance two opposing forces: the need for faster development and deployment versus maintaining secure, complex enterprise systems. While enterprises prioritize security and stability, developers and businesses seek agile, flexible solutions that scale efficiently.

Proven technologies can help achieve these contrary goals—microservices and AI, for example—but any technical solution

must be a social solution as well, says Saikali. "We've seen waves of process-driven and technical-driven silver bullets. If you only went to cloud, if you only adopted AI, if you only use [containers], your problems would go away," he says. "I believe that the solutions are always social-technical, and you need a platform that is designed to enable a particular type of human behavior."

Development teams are already stretched thin, with high turnover rates. Recruitment is a major hurdle, with 50% of respondents struggling to find skilled developers, while 49% cite turnover as a significant issue. Part of that is due to the need for near-constant upskilling, says Christopher Cyrus, Tanzu Spring GTM lead.

"Every time something big happens, like with containers or with AI/ML, you have to re-educate a huge population of developers to be proficient in that motion. How can we shorten that window?"

A trusted app development platform reduces boilerplate code, easing workloads and flattening the learning curve while enabling work with AI models for an app's next iteration, he says. The Tanzu Spring framework and cloud-native platform simplify application development, ensuring it remains current, compliant and secure throughout its lifecycle.

## Overcoming Security And Compliance Challenges In Cloud-Native Development

Security is a constant challenge, with developers racing to address new threats. For 40% of surveyed executives, security is the top challenge in cloud-based transformation, while 44% cite ensuring data security and compliance as developers' biggest concerns in cloud-native environments. Many developers lack exposure to key security knowledge, for example, leaving them unsure if their configurations are correct. "[Security is] absolutely critical, but it also requires very deep domain expertise," says Saikali.

Saikali notes that traditional approaches using spreadsheet checklists for security and compliance only address known risks at the time of creation. With the Spring Boot Governance Starter, he says organizations can automate security checks and validate application configurations against industry standards, like the 140 series of Federal Information Processing Standards (FIPS) in banking or HIPAA privacy rules in healthcare.

“The apps won’t even launch if they fail the checks or [are] in warn mode,” says Saikali. Developers can add their own organization-specific security configurations and move toward real-time, continuous security and away from “regulation by spreadsheet.”

Running applications on a trusted cloud platform enhances security further, says Cyrus. Over a third of respondents named enhanced security as a top benefit of their organization’s migration to cloud platforms. “Most organizations have [finite resources] to monitor for security,” he says. “At major cloud providers, there are trained personnel watching it all the time because that’s their job.”

Cloud-native development can also improve security by making it easier to push out updates and patches—a key element of technology transformation, according to 79% of respondents. “Modernizing your applications is always good for security because stale code will have a flaw in it somewhere,” says Cyrus. “If it’s not being refreshed, you run the risk of being attacked.”

Shifting development to a cloud-native architecture can advance security, speed to deployment and give development teams more direct visibility into how their work helps the business. By running Tanzu Spring on a cloud platform provider like AWS, developers gain access to a scalable, flexible infrastructure paired with a developer-friendly platform for building and deploying cloud-native applications.

“Whether [it’s] increasing revenue or decreasing the cost of the deployment of an application ... this technology allows you the most diverse path to get there,” says Cyrus. “The benefit is that you make something very complex accessible to a large population.”



**Amazon Web Services**

VMware Tanzu Spring on AWS empowers developers to build enterprise-grade applications with speed, efficiency, and a focus on security and compliance. Part of the Tanzu portfolio, Spring provides a lightweight framework for creating cloud-native Java applications that are performant, scalable, and reliable. With comprehensive support for microservices, reactive programming, and cloud deployment, Tanzu Spring accelerates your development lifecycle while maintaining enterprise-grade security and reliability. Its extensive ecosystem of tools and libraries enables rapid application development, seamless integration, and robust testing capabilities. Experience the perfect balance of developer productivity and enterprise readiness with VMware Tanzu Spring - the trusted choice for modern Java application development.