CONSOLIDATED TOOLCHAINS DELIVER BETTER AND SAFER SOFTWARE

John Jeremiah, product marketing leader for GitLab, discusses how a consolidated toolchain management approach improves value and time to delivery.

A toolchain is a set of programming tools used to perform a complex software development task or to create a software product. What are the challenges of extended toolchains and the benefits of a consolidated toolchain?

We recently partnered with Forrester to study this. We found that 34 percent of organizations are running at least two toolchains; 27 percent are running three to five; and almost a third are running between six and 10 toolchains. All of this creates a complexity problem. In 40 percent of cases, developers are managing their own toolchains, which takes time away from building mission-essential solutions. In addition, there are often insufficient skills or resources to manage the toolchains; it's difficult to ensure security across them; and poor visibility makes it challenging to find things and know the current status of work. In the study, organizations that had implemented a consolidated, more manageable toolchain saw improved quality, security and developer productivity. Organizations also viewed consolidated toolchains as a way to enable multi-cloud deployments, where they're not locked into a single cloud provider.

How does a concurrent DevOps strategy drive efficiencies and enable speed to mission?

The biggest challenge with complex toolchains is they create silos between teams. Traditionally, development is a linear process with multiple tools and multiple handoffs. With each handoff, there is another login, another user interface to learn and another environment to protect. Data is isolated in different tools, which impacts visibility and reporting. Finally, teams are harder to manage and access. Concurrent DevOps simplifies toolchains and the way developers work by eliminating the friction caused by silos and handoffs. It gives teams the visibility and speed of execution they need to achieve their mission and objectives.

What capabilities should the modern software factory have?

It starts with a consistent view that enables collaboration between development, operations and security teams. These teams need the capability to work in parallel, without waiting for other tasks to be completed before they start. The modern factory also has common, consistently applied controls across the development life cycle and a single data store for reporting and visibility. It enables rapid feedback to developers so they can quickly learn about and correct defects and vulnerabilities. It also supports the full development life cycle — planning, coding, testing, packaging, deploying and monitoring. Finally, it supports built-in automation to enable continuous integration and delivery so developers can improve software quality without sacrificing velocity.

How can state and local agencies ensure their applications meet security, compliance and governance requirements?

Common controls for authentication and access across the entire life cycle are very important for the security of the development process itself. Then you need clear visibility into code ownership and accountability to demonstrate compliance and governance. Finally, security must be tested and accounted for every time a developer makes a code change, so you need integrated security scanning that looks at the code as well as containers and licenses. This saves teams from introducing vulnerabilities they'll have to deal with later.

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