



VMware Tanzu Application Platform Released to General Availability

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IDC's Quick Take

VMware is taking an expanded approach to Kubernetes by providing complete application build and deployment capabilities focused on the developer persona, and, at the same time, providing the requisite capabilities for enterprise operations, DevOps, and DevSecOps personas. With this approach, VMware set its sights on a significant target market consisting of its install base of customers on VMs that have yet to move to Kubernetes and also on any customer looking for best practices for cloud-native development and deployment.

Product Announcement Highlights

In early January, VMware [announced general availability of the Tanzu Application Platform](#), a solution that simplifies the work of developers and operators, with the aim of increasing agility and accelerating software delivery on Kubernetes. The solution enables developers to forego the need to edit a series of YAMLS to use Kubernetes and, instead, focus on the coding that provides innovation and differentiation for their organization. At the same time, the solution enables DevOps and platform teams with the ability to define the process and guardrails by which applications are taken from code to production.

Tanzu Application Platform provides developers and DevOps teams with a path to production in public cloud environments and on-premises Kubernetes clusters, enabling cross-cloud and multi-cloud deployment strategies. It does this by clearly separating use cases for DevOps and platform teams as compared to developers. DevOps and platform teams have the workflows and features available to them to define the steps of the path to production.

VMware states that Tanzu Application Platform is application aware. This means that developers can focus on writing code using their preferred programming language while the platform then identifies the critical components the application requires and injects them into the file system. This includes services for continuous integration, automated container image builds, Knative for serverless, serverless plug-ins, API routing, and image scanning and signing. All of the aforementioned capabilities are part of what distinguishes Tanzu Application Platform (TAP) from the existing Tanzu Application Service (TAS) offering.

IDC's Point of View

VMware's launch of Tanzu Application Platform comes on the second anniversary of VMware's launch of the Tanzu portfolio. A large portion of the Tanzu technology originates from VMware's December 2019 acquisition of Pivotal and its PaaS and cloud platform technologies. TAP addresses the need for developers to make productive use of Kubernetes containers, for all the benefits they provide, and particularly for addressing multi-cloud or cross-cloud strategies.

IDC research shows that people want more fully managed Kubernetes services. In IDC's [Container Infrastructure Software Survey](#) (December 2021), container users report an 11 percentage point

increase in using fully managed services for deploying Kubernetes in the public cloud as compared with two years ago. Another supporting data point comes from a [study in IDCs Future of Digital Innovation](#) program, where only 22% of digital-native companies prefer to buy standard infrastructure cloud services (IaaS) and manage/operate their own infrastructure technology stack, with the remaining nearly 80% preferring to consume infrastructure orchestration and management tools (e.g., Kubernetes) as a service and/or preferring to buy application services when possible (e.g., database as a service, application software as a service).

The preference for consumption of Kubernetes as a service in part reflects the fact that Kubernetes has grown from an emerging technology to one that is starting to enter the mainstream. Recognizing the desire to make Kubernetes accessible to a wider swath of developers has resulted in software and cloud vendors delivering increasingly abstracted Kubernetes solutions. The vendor list includes AWS, Microsoft, IBM, IBM Red Hat (OpenShift), Google, and VMware, where VMware's Tanzu portfolio offerings with Kubernetes capabilities include Tanzu Application Services, Tanzu Kubernetes Grid, Tanzu Data Services, [Tanzu Community Edition](#) and, now, Tanzu Application Platform.

Kubernetes is quickly becoming the target platform for new cloud-native applications and, increasingly, a destination for legacy applications that are moving to next-generation infrastructure for long-term operation or a landing pad for modernization efforts. Given VMware's large install base of enterprise customers that are still on VMs, there is a large market opportunity for someone to help them move to Kubernetes, and VMware wants to be the one to help them do so. One challenge that VMware will face is helping prospective customers know when to use what product, helping them get over any confusion hurdles that may send them elsewhere.

Tanzu Application Platform is in some ways a sequel to Tanzu Application Service, VMware's existing Cloud Foundry-based PaaS. Tanzu Application Service is based on a Cloud Foundry-developed container format and orchestrator, and VMware originally had planned for TAS to be rebuilt on Kubernetes. That plan was cancelled and VMware decided to build a new platform instead that would be able to reflect the changes in PaaS trends since Cloud Foundry began.

The design point for TAP was to be opinionated in certain areas that would be needed to create abstractions and a smooth developer experience but also allow for other areas to be customized. While TAS will continue to be supported for the foreseeable future, TAP will be the road map to the future as customers wanted a platform that would align with Kubernetes. VMware has yet to talk extensively about the practicality of migrating workloads from TAS to TAP, and it may very well be that most TAS workloads will live out their life cycle on that platform. But clearly VMware wants to present a viable path forward for TAS customers, many of which are already using Kubernetes.

VMware has positioned TAP as a portable application platform that can run on any compliant Kubernetes distribution, including the various public cloud Kubernetes services. Competitively, the market for container software is already well beyond simply providing Kubernetes distros. Most commercial Kubernetes products have developer-oriented tools and platforms attached to them in varying degrees. Customers that have bought into those platforms are highly likely to have also bought into that platform's developer vision or have their own custom platform that they layer on top of Kubernetes. And in the public cloud, the entire public cloud service catalog is essentially the developer platform that can be accessed on top of the core Kubernetes services. In the public cloud, however, the diverging sentiments on portability versus speed of development have still not been settled. Many

enterprises prioritize portability but realize they must give up on using some cloud services that may speed development but also create lock-in. Other enterprises have gone all in on a certain cloud and are following that cloud's innovation path but have traded portability for that. VMware is betting that the increasing adoption of hybrid and multicloud will create enough painful complexity to give rise to a significant market segment of enterprises that will want to abstract away that complexity by using a consistent platform like TAP across environments. The reality today is that Kubernetes in enterprises can be disjointed and inconsistent, particularly between on-premises and public cloud. They are often run by different teams, have different workload priorities, and have very different sets of tooling and experiences. The common thread of Kubernetes between these environments is certainly beneficial in many ways, but there is also still a large amount of nontrivial divergence between them all that can cause operational and development headaches.

VMware Tanzu Application Platform features a bevy of products and services that empower customers to not only migrate legacy applications from their existing deployment environment but also modernize and transform them. For example, the Tanzu Application Platform provides customers with a portfolio of application transformation, DevSecOps transformation, and cloud infrastructure transformation products. VMware's application transformation products empower customers to leverage microservices and APIs while its DevSecOps transformation products automate build, management, and update processes. Meanwhile, VMware's cloud infrastructure transformation products empower developers to create cloud-based capabilities and architectures that are suitable for modern clouds and edge infrastructures.

Tanzu Application Platform also features application assessment tooling that provides IT leaders with insight into the complexity of modernizing individual applications within a larger portfolio of applications. These insights include guidance about the optimal modernization pathway for the application, identification of security-related vulnerabilities, and information about challenges and opportunities specific to the modernization process. The conjunction of VMware Tanzu's application assessment tooling with its portfolio of application, DevSecOps, and cloud infrastructure products provides developers with an impressive set of tooling for bringing modern development patterns, architectures, and tools to legacy applications.

The depth and breadth of Tanzu Application Platform products renders it a market leader in the space of application modernization and transformation tools. Developers have an opportunity to not only obtain insight into the application modernization process for a portfolio of applications but also have the ability to leverage tools that tactically implement microservices architectures, APIs, DevSecOps tooling, and cloud-native patterns and architectures. That said, VMware can improve the automation of refactoring and application modernization by integrating more artificial intelligence and machine learning technologies into its portfolio of application transformation tools. The deepened use of machine learning to automate refactoring has the potential to accelerate refactoring-related development and empower developers to focus on higher-value tasks associated with the modernization and transformation of applications.

All of the vendor activity has largely focused at the Kubernetes layer. With Tanzu Application Platform, VMware is taking a disciplined approach to tackling the DevSecOps problems faced by the personas of operations, DevOps, and developers. The differentiating features for application developers include the application templating and other application build pipelines the solution provides. This is what VMware means when it says the solution is application aware: it abstracts the calling of and building of the

necessary files developers need to bring an application to production — providing speed, quality, and security benefits.

Tanzu Application Platform is built using a handful of open source technologies, including several that VMware leads in the public communities. These include Backstage (user-friendly GUI for building self-service developer portals), Spring (long-standing enterprise standard for Java development; VMware is the steward), Cloud Native Buildpacks (CNBs) (pioneered by Pivotal, which is now part of VMware, and Heroku, which is now part of Salesforce; CNBs turn source code into container images; VMware manages two open source projects that implement CNBs: kpack and Paketo), Carvel (Kubernetes-centric project that provides composable tools that aid application development, configuration, and deployment to Kubernetes; started by VMware), and Cartographer (create supply chains that define continuous integration and continuous deployment [CI/CD] in one place, with security and reusability as core motivations; launched by VMware in fall of 2021).

Another benefit of the Tanzu Application Platform is the availability of predefined "application accelerators" that empower developers to customize preexisting application templates to accelerate the development of net-new applications. Application accelerators are designed to help developers with the "inner loop" of development and can be supplemented by Tanzu Developer Tools for VS Code, Tanzu's integration with the popular VS Code IDE. Tanzu Developer Tools for VS Code features live reload functionality that enables developers to understand the effect of code updates they are making to their application without rebuilding the container on which the application is deployed, each time. Meanwhile, Live View for VMware Tanzu provides developers with insight into the running of containerized applications. All this means that developers working on the Tanzu Application Platform have at their disposal a rich portfolio of developer tools that they can use to rapidly develop, iterate, and observe applications they are developing.

VMware executives are right to point to VMware's overall strategy to reach developers. While not marketed as a free, quick-to-start-using solution, VMware is tackling other key needs of developers with Tanzu Application Platform: speed and skills. By packaging the application components necessary to build production deployable applications in a highly abstracted way, the solution enables speed. By providing those application components for the programming languages they are accustomed to and meeting them in the CLI's where they are at, VMware is addressing the developer skills issue, one of the biggest topics in the industry today. Enabling developers to focus the use of their skills on the application code and features that bring differentiated value to their organizations is where software vendors need to be to win the hearts, minds, and budgets of customers.

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