

REPORT REPRINT

VMware feathers its Kubernetes nest with Tanzu Editions and cloud partnerships

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Introduction

VMware is setting itself up as a provider-agnostic companion for enterprise customers eager to reap the benefits of public clouds. New Tanzu editions – four bundles ranging from Basic to Enterprise – offer a roadmap of sorts for Kubernetes and cloud-native adoption. Co-engineered stacks for running VMware environments on Azure, Google, IBM and Oracle clouds work both ways, giving those clouds exposure to VMware's large (and largely on-premises) customer base, while helping the company scale its offering by delegating cloud management and support to the providers.

451 TAKE

VMware's ambitions for being a central player in the next generation of enterprise IT are coming into focus as it refines its roadmap, integrates its cloud-native acquisitions and forges partnerships across the provider landscape. The company arguably has the bully pulpit for bringing containerization and Kubernetes religion to the large portion of workloads that remain on-premises; it also has a vested interest in maintaining license revenue from VM-based environments. VMware realizes – as many of its enterprise customers do – that the actions it is taking now, during a pandemic-driven period of economic slowdown and uncertainty, will be critical to the shape and speed of its recovery. The refurbishment of its portfolio to support multiple public clouds and Kubernetes shows the company's determination to remain a dominant force, as infrastructure and VMs are supplanted by applications as the locus of IT operations.

Context

Since we last reported on VMware's Kubernetes and app modernization efforts, the company has continued on its path of supporting customers as they explore the frontiers of hybrid cloud deployment. In March, it integrated Kubernetes container orchestration into its vSphere 7 virtualization platform and released its Tanzu portfolio as a shared foundation for self-service provisioning and governance among developers and IT operations teams.

The Tanzu portfolio, which includes technologies acquired from Pivotal, Bitnami, Heptio and Wavefront, now consists of:

- VMware Tanzu Kubernetes Grid (a minimalist Kubernetes runtime)
- VMware Tanzu Mission Control (a platform for managing clusters across multiple vCenters and clouds)
- Tanzu Observability (based on Wavefront)
- Tanzu Service Mesh (based on Istio)
- Tanzu Build Service (which creates and maintains containers based on declarative image configurations)
- Tanzu Application Catalog (largely based on the Bitnami acquisition)
- Tanzu Data Services (a set of on-demand caching, messaging and database tools commonly used by developers)
- Tanzu Application Service (a rebrand of Pivotal Cloud Foundry services for automated provisioning)

In 451 Research's Voice of the Enterprise: Digital Pulse, Organizational Dynamics 2020 survey, IT decision makers reported specific skills shortages (40%) and overall staff shortages (38%) as the top challenges in delivering IT. When asked about specific areas of acute skills shortages, cloud platform expertise topped the list, followed by cloud-native functions/tools (see Figure 1 below).

Compared to these relatively new and rarefied (and ever-changing) knowledge domains, vSphere and vCenter experience are abundant (and in some cases entrenched) in enterprises. This puts VMware in a good position to scaffold customers' next phase of IT transformation, especially given the risk aversion likely to endure as companies navigate through and out of the pandemic economy.

VMware has more than 3,000 employees in its modern applications business, claims 500 Tanzu customers (with a rapid growth plan as vSphere users transition), and says it is reaching some five million developers through its Spring framework, Bitnami community and related offerings.

Areas of Acute IT Skills Shortages

Source: 451 Research's Voice of the Enterprise: Digital Pulse, Organizational Dynamics 2020

vSphere 7 with Tanzu and Tanzu Editions

Announced in mid-September, vSphere 7 with Tanzu is a lightweight offering designed to help customers access Kubernetes as a feature of vSphere. The VCF with Tanzu iteration, launched in March, is a heavier lift: it requires NSX-T for networking and is available only as part of VMware Cloud Foundation (VCF).

The new offering disaggregates the vSphere element from the VCF bundle, a premium full-stack product that includes vSphere itself, vSAN (storage) and NSX (networking) as well as Cluster API, a set of open source Kubernetes APIs (championed by VMware acquisition Heptio) for cluster lifecycle management across environments.

This effectively creates two ways of bringing Kubernetes under VMware management:

vSphere with Tanzu is generally better for smaller-scale deployments (with fewer than 25 clusters, say) and can be deployed quickly (within an hour), but networking, load balancing, storage and lifecycle management must be set up and cycled separately – this option lets vSphere users license parts of Tanzu rather than the whole portfolio. VMware points out that vSphere with Tanzu can handle deployments well beyond 25 clusters, however.

VCF with Tanzu is well suited for running Kubernetes workloads at scale, with integrated NSX for networking and load balancing (plus security isolation features), vSAN, or third-party external storage, and full-stack lifecycle management.

VMware says guidance for migrating from the first to the second implementation is in the works. The fundamental motivation for breaking off the vSphere with Tanzu piece is to make Kubernetes more accessible to the vSphere installed base that is containerizing workloads as part of larger modernization efforts.

Tanzu Editions is a set of tiered bundles for simplifying VMware's approach in this new market. The launch of Tanzu Kubernetes Grid and Tanzu Mission Control in March was an effort to unify a portfolio that incorporated technology from VMware and acquisitions including Pivotal, Wavefront, Bitnami and Heptio. By splitting the portfolio into four editions, the company is giving customers the ability to buy only the capabilities they need most, and to accommodate tooling already in use.

Each successive Tanzu Edition is a superset of the one before it:

Tanzu Basic (available now) aims to simplify on-premises Kubernetes operations by making Tanzu Kubernetes Grid (VMware's Kubernetes runtime) available to admins as part of the vSphere 7 control plane, enabling customers to provision clusters and VMs directly from vCenter.

Tanzu Standard (available now) brings in multi-cloud operations, adding features from Tanzu Mission Control and support for Prometheus and Grafana monitoring tools. The goal is to offer centralized management, policy and security for Kubernetes clusters whether on-premises, in the public cloud or at the edge. It can be implemented from within vSphere, VCF or public clouds.

Tanzu Advanced (slated for availability in late 2020 or early 2021) is designed to facilitate DevOps delivery and microservices development.

Tanzu Enterprise (slated for availability in late 2020 or early 2021) includes the whole Tanzu enchilada for organizations seeking to operate an automated application platform.

One issue with the jumble of acquisitions being integrated by VMware is that different parts of the portfolio used different billing units. By rationalizing the charging models across the various components in Tanzu Editions, VMware hopes to enable more aggressive pricing, simpler packaging, and an easier selling motion for itself and its partners.

Cloud partnerships and VMware Cloud Partner Navigator

Tanzu and app modernization represent one part of the two-pronged approach VMware is taking to moving up the stack. The other part of the equation is leveraging the market's familiarity with VMware's management tools and its cloud-agnosticism to create a unified platform for provisioning, securing and managing VMs and containers across environments: public or private, customer- or partner-managed, on-premises or off. All of these variations are based on the VCF stack, with the common denominator being vCenter for management.

The effort started three years ago with the joint announcement of VMware Cloud on AWS, VMware's 'first and preferred' cloud partner. This offering, which is a 100% cloud implementation, has continued to mature to meet customer use cases and requirements, and is now available in 17 regions. VMware Cloud on Dell EMC launched in 2019 to deliver an on-premises footprint for VMware Cloud services. Both VMware Cloud on AWS and VMware Cloud on Dell EMC are managed and supported by VMware site reliability engineers.

Even with its thousands of engineers, however, VMware can't possibly stretch itself thin enough to support all the workloads running on all the clouds. To scale its service and make its familiar vCenter UI available on other clouds, it has created 'solutions' in cooperation with all the major cloud providers. The newest of these is Azure VMware Solution, a Microsoft-operated service that runs on a full stack of prespecified hardware and software, seamlessly integrated with a number of Azure services including VM IaaS, Azure Backup, Azure DR and Azure Active Directory. Other options include Google Cloud VMware Engine, IBM Cloud for VMware Solutions, and Oracle Cloud VMware Solution.

Partnerships with managed service providers are another factor in helping VMware achieve the scale to realize its multi-cloud ambitions. At its recent virtual VMworld conference, the company launched VMware Cloud Partner Navigator, a SaaS portal to tie various cloud endpoints and cloud services together, giving end users access to self-service cloud infrastructure while allowing the provider a holistic view of environments under its watch. The goal is to make it easier for partners to connect to services on multiple clouds via a customizable dashboard; the company notes that customers are increasingly trying to move away from doing all of their own tooling.

Competition

For the Tanzu portfolio, VMware's near-term competition comes from SUSE's Rancher and Red Hat's OpenShift. Tanzu is priced to compete with Rancher. VMware believes OpenShift is somewhere between Tanzu Advanced and Enterprise in terms of capability and price. The company expects customers to use Tanzu Advanced with Kubernetes, a combination that it says is cheaper than OpenShift. Further out, Tanzu will compete with cloud service provider offerings such as Google Anthos and Microsoft Arc.

The breadth of VMware's multi-cloud offering means there are many points of competition. Again, Red Hat OpenShift is a key rival given its comprehensive portfolio and the wide availability of Red Hat images on public clouds. VMware is also competing with the hyperscalers themselves to attract containerized workloads, and at different points of the stack it will vie with Kubernetes-as-a-service vendors including Mirantis, SUSE (with Rancher) and Canonical.

All these companies are using Kubernetes to build out a hybrid/multi-cloud development and management layer that abstracts away the underlying servers. All are essentially moving the demarcation between infrastructure and other layers up a level, from the operating system to the application, thanks to standardization on Kubernetes for orchestration.

SWOT Analysis

STRENGTHS

VMware's incumbency in the enterprise and onboard engineering talent are big pluses in its endeavor to make Kubernetes enterprise-consumable, and its co-engineering with the major public cloud providers gives credence to its hybrid/multi-cloud claims.

WEAKNESSES

Ease of adoption/use among multiple development teams (for an enterprise) or end customers (for an MSP) can create a world of complexity and potential technical debt. VMware must ensure that customers have access to the skills needed to scale self-managed deployments in an automated way.

OPPORTUNITIES

MSP and SI partners can be key to evangelizing the benefits of VMware's approach to heterogeneous deployments with cloud-native components. A program with a high bar for validating third-party Tanzu partners could be worth the investment.

THREATS

The company is pursuing a rich opportunity in competition with cloud providers, systems vendors and software suppliers – many of which, like VMware, have a large base of existing customers to keep happy, but some of which don't.