



VMware Launches VMware Cloud Foundation with Tanzu, Expands Tanzu Portfolio, and Updates Cloud Management

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IDC's Quick Take

On March 10, 2020, [VMware](#) formally announced the April general availability of VMware Cloud Foundation 4, powered by vSphere 7 with Kubernetes (formerly Project Pacific). It also announced immediate availability of a portfolio of new and rebranded Tanzu Kubernetes runtime and management services. In parallel, the company announced the April general availability of updated vRealize cloud management offerings, featuring consistent on-premises and SaaS functionality and integration with VMware Cloud Foundation 4 and vSphere 7 with Kubernetes.

Product Announcement Highlights

VMware's announcements centered on the theme of "application modernization in a multicloud world." They were made during a worldwide virtual event featuring CEO Pat Gelsinger, Executive Vice President Ray O'Farrell, COO for Products and Cloud Services Raghu Raghuram, and senior technology leaders Joe Beda and Kit Colbert.

Introducing VMware Cloud Foundation 4

Recognizing that modern applications contain dozens of independent, rapidly changing microservices, running across multiple clouds and technology footprints, VMware introduced VMware Cloud Foundation (VCF) 4, powered by vSphere 7 with Kubernetes (formerly code-named Project Pacific). The core Kubernetes technology available embedded within VCF and vSphere 7 is now branded as Tanzu Kubernetes Grid (TKG).

Heptio assets, which became Essential PKS, will transition to Tanzu Kubernetes Grid Plus, which includes the core Kubernetes distribution and support for the Velero, Sonobuoy, and Contour open source projects that Heptio chartered. Enterprise PKS, the Kubernetes product developed in conjunction with Pivotal, will receive continued investment, and PKS customers will receive entitlements to Tanzu Kubernetes Grid if they wish to migrate.

Full packaging and pricing details outlining differences between VCF 4 and vSphere 7 editions that do or do not include Tanzu Kubernetes Grid are not yet available. Tanzu Kubernetes Grid will also be available standalone in two editions (Standard and Plus, which includes support for Velero, Sonobuoy, and Contour) on a per-core licensing basis. Pricing has not been publicly released.

Tanzu Kubernetes and Multicloud Management Announcements

The company also announced the general availability of its full Kubernetes management and developer services portfolio, offered as part of the new Tanzu brand including:

- Tanzu Mission Control (Kubernetes management that can be extended across any Kubernetes distro using open standard Kubernetes APIs, regardless of where it runs)
- Tanzu Application Catalog (curated Bitnami catalog of developer container service building blocks for private cloud deployment)
- Tanzu Observability (rebranded Wavefront metrics observability service)
- Tanzu Application Services (rebranding of the Pivotal Application Service [PAS] developer platform including support for spring) (PAS currently uses the Cloud Foundry container system but is in alpha with a version that uses Kubernetes. The Pivotal branding for software and cloud offerings is being retired in favor of Tanzu, with the exception of Pivotal Labs, which continues to offer professional services.)

With the release of Tanzu Kubernetes management and developer services, developers and VMware administrators will gain shared and consistent visibility into Kubernetes clusters, namespaces, and pods, as well as related network and storage resources. VMs will be able to be managed with VMware Cloud Foundation Services, an integrated Kubernetes API surface to allow organizations to enable VMware infrastructure with container constructs such as namespaces. These new capabilities enable VM administrators to radically increase operational scale by consistently applying policies to logical groupings of resources and services without needing to apply cumbersome VM tags to each individual VM resource. Actions taken by developers using native Kubernetes to self-provision development resources will be immediately visible to VMware administrators as part of their vCenter inventory and be accessible by vRealize Automation, vRealize Operations, and vRealize Log Insight. This permits VM administrators to proactively manage infrastructure operations across multiple development teams and logical applications in multicloud environments.

VMware Cloud Foundation Services will include Tanzu Runtime Services to deliver core Kubernetes development services including an up-to-date distribution of Tanzu Kubernetes Grid. It also includes hybrid infrastructure services, powered by VMware vSphere 7, to provide full Kubernetes API access as well as the infrastructure-as-code automation APIs delivered by vRealize Automation to span VM-based applications and cloud-native applications deployed with containers.

April general availability of updates to the vRealize hybrid cloud and multicloud management portfolio for VM-based and container-based workload and infrastructure automation and operations management software and SaaS services were also made as part of the event. Specifically, VMware announced upcoming availability of consistent functionality and common code bases across on-premises and SaaS versions of vRealize products: vRealize Automation 8.1, vRealize Operations 8.1, and vRealize Log Insight 8.1. All vRealize on-premises and SaaS versions fully integrate with vSphere 7 with Kubernetes and VMware Cloud Foundation 4 and support Tanzu Mission Control.

Collectively, the general availability of these solutions brings VMware to an important turning point where its SaaS-based VM management platforms are positioned to become the focal point for ongoing development and innovation. The company remains committed to providing on-premises management options, but SaaS-based offerings will be able to roll out updates and new capabilities much more quickly. The company indicated (and 2019 financial results indicated) that it is seeing strong customer demand for SaaS-based options.

IDC's Point of View

Customer adoption of Tanzu is critical to VMware maintaining its leadership role as a strategic enterprise infrastructure supplier in the era of containers, microservices, and modern applications. Most of VMware's competitors, such as Red Hat's OpenShift, are building Kubernetes-based platforms that can run on any infrastructure (any hypervisor, bare metal, or cloud) to create a consistent platform that overlays on top of everything. Much of the attention for Tanzu Kubernetes Grid is focused on its native integration with vSphere, but TKG can also run in non-vSphere environments such as the public cloud. Tanzu Kubernetes Grid is a minimalist Kubernetes distribution aligned with open source that is highly portable, so this will help expand VMware's container platform strategy beyond vSphere.

Tanzu Mission Control will also be able to manage non-VMware Kubernetes clusters, including the native Kubernetes public cloud services offered by every major cloud provider. Accepting that a hybrid world will be a mix of VMware and native public cloud services, VMware is investing in management consistency as a strategic control point across different Kubernetes platforms to insulate customers from underlying multicloud differences and operational complexities.

The introduction of large-scale, logical constructs for unified VM and container management shared by developers and VM administrators is an important enabler of VMware's strategy to address not just infrastructure management but full-stack, modern application management as the company moves to position around full-stack, multicloud, and hybrid cloud operations and automation. Under Tanzu, VMware's management framework expands to encompass the full stack of infrastructure and application services.

Enterprise container footprints, although small today, are forecast to grow rapidly, and VMware has a significant opportunity to differentiate against competitors if it can successfully attach Kubernetes to the large, existing installed base of vSphere. To be successful, VMware will need to figure out how to avoid licensing friction as customers gradually enable their vSphere deployments with Kubernetes. It appears that not all vSphere versions will come with Tanzu Kubernetes Grid and that there will be an upcharge for the Kubernetes-enabled editions, which means customers will only purchase the Kubernetes-enabled versions as needed.

The company will also need to proactively help customers expand the role of VM administrators to include Kubernetes and promote collaboration across dev, LOB, and infrastructure and operations (I&O) teams to ensure that all teams see clear value in having enterprise I&O teams support container environments at production scale.

Many VMware competitors are also expanding their stacks into the PaaS layers to offer a full-stack solution. Developers and DevOps are newer audiences for VMware, so the company faces the task of not only building these layers but getting in front of new buying centers. VMware will seek to leverage Pivotal assets including Pivotal Labs to validate its position but is going to have to expand its strategy well beyond the Pivotal assets and build out a strong ecosystem of application-oriented partnerships to fill in the gaps.

IT Executive Recommendations

Enterprise I&O leaders should use these announcements to review plans related to the evolution of VM administrator roles and strategies for managing large-scale, multicloud container environments. IDC's

research shows that the escalation of application dependencies across multiple microservices and clouds requires a much more automated, policy-driven, AI/ML-enabled approach to life-cycle operations. Notably for production environments, management and governance capabilities are needed to enable scale, reduce security risks, and increase business outcomes.

Most enterprise I&O teams are transforming as they adjust to agile, DevOps, and SRE best practices and methodologies, particularly as they learn how to manage the growing adoption of microservices, and adjust to the operational complexity resulting from the use of multiple clouds. Developer teams are increasingly frustrated by the amount of non-programming responsibilities they are asked to shoulder. By proactively engaging with DevOps, SREs, and centers of excellence teams, I&O teams can help their organizations to rebalance roles and responsibilities and increase overall operational agility, even as application environments become more dynamic and complex.

Key considerations for IT buyers include:

- Enterprise I&O teams should consider the impacts of VMware's multicloud vision as it relates to evolving enterprise cloud and application management strategies. Enterprise should conduct a gap analysis on skills and training that will be required to manage classic and modern estates in a consistent and unified manner.
- From a technology point of view, embedding Kubernetes into vSphere has broad accessibility and manageability advantages. VMware certainly has the intention and potential to enable its vSphere install base with Kubernetes. However, the cost and availability of this technology is a key consideration to market accessibility. Packaging and pricing details are still unclear, so customers need to demand these details from VMware to calculate TCO and ROI to compare against alternatives.
- The reality is that enterprises are going to be running a mix of containers and VMs for the foreseeable future. The integration of containers at the hypervisor level is a unique VMware differentiator and may have broad implications on organizational structure, processes, and roles. These impacts should be key considerations as customers evaluate container strategies.
- VMware has deep strengths in infrastructure and operations but is early in its journey to support the needs of the full application stack, including PaaS, DevOps, and developer tools. With the recent acquisitions of companies such as Bitnami and the reintegration of Pivotal, VMware will certainly be building out these areas. This is a diverse and fragmented market where it is difficult for one vendor to provide everything, so partnerships will be key. IT decision makers should evaluate the strength and trajectory of VMware's ecosystem going forward.
- I&O executives transforming their organizations should learn how their internal software development partners are planning to modernize application development processes and understand what those evolving processes will require from the infrastructure. They should also align on the role and task ownership of management and governance as this will play a critical role in driving product selection.

Subscriptions Covered:

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