

# VMware Application Modernization on Sovereign Cloud

Kubernetes platform for highly regulated and disconnected environments

## THE CHALLENGES FOR REGULATED INDUSTRIES

A recent survey found that

- 62% of customers state they need a cloud option that provides data sovereignty with complete jurisdictional control and authority over data.
- 60% need a cloud operated by certified staff that typically are citizens with security clearances.
- 58% need a cloud with air-gapped infrastructure or regions (Availability Zones (AZs)) on sovereign soil.<sup>3</sup>

**VMware Tanzu solution** on sovereign cloud includes a hosted and/ or managed offering that can be operated as a fully disconnected version of VMware Tanzu products, including the tools and open- source technologies that organizations need to deploy and consistently operate a scalable Kubernetes environment.

## Overview

All organizations are having to do more with less these days. Given the ever-increasing cost pressures, alongside dwindling resources, and increasing talent retention issues, organizations need the most current technologies to help them to adapt and deliver value.

Business demand for sovereign services is likewise accelerating across the world. According to a recent report, 70% of businesses believe financial and environmental regulations that they believe will become more of a threat<sup>1</sup> to their ability to innovate. Kubernetes is one such innovation that brings vast benefits for operational efficiency, but if not done correctly can expose organizations to more compliance risks.

According to a recent VMware survey, 99% of respondents who are running Kubernetes in production saw clear benefits with the top three benefits being improved resource utilization, easier application upgrades, and faster development cycles.<sup>2</sup> But for highly regulated organizations, who need these transformative technologies, there is added pressure.

To meet the needs of our joint customers who need to continue to digitally transform their applications, while remaining compliant with regulations, restrictions, and geographical control requirements, VMware sovereign cloud partners now offer VMware Tanzu<sup>®</sup> available for isolated and disconnected environments.

## What is sovereign-ready VMware application modernization?

VMware Tanzu provides the capabilities and services for building, running, and managing modern applications on any infrastructure. When deployed on sovereign cloud, VMware Tanzu, delivers a highly scalable, enterprise-grade Kubernetes solution for regulated and highly sensitive markets that need to maintain strict regulatory compliance and residency for a nation's data. Customers can run and manage their applications consistently on a secure, scalable infrastructure bolstered by a conformant Kubernetes runtime everywhere.

<sup>1</sup> 451 Research, *Macroeconomic Outlook, Business Trends, 2022 Outlook*

<sup>2</sup> VMware *State of Kubernetes Report 2022*

<sup>3</sup> IDC global survey of regulated industries "Deploying the Right Data to the Right Cloud in Regulated Industries" 2021

## BENEFITS OF VMWARE TANZU ON SOVEREIGN CLOUD

Regulated industries that need to comply with regional data security, residency requirements, while innovating for greater value, can experience the benefits of VMware Tanzu in a compliant environment.

### No Internet connection dependency

– for those customers that operate in sensitive industries, Tanzu is now available without a dependency on internet access for deployment. VMware Tanzu, when on sovereign clouds enables organizations to operate a non-SaaS service so that they can maintain independence from any web connectivity.

### On premises version of current

**VMware Tanzu products** that are airgap capable and independent of any hyperscaler. This maintains the sovereignty of the environment in which it runs. This ensures sovereignty of the data, environment, and personnel in which it runs.

**Kubernetes that runs everywhere:** Deploy an enterprise-ready Kubernetes runtime to power the delivery of modern applications across on-premises, public clouds, sovereign clouds and at the edge with *Tanzu Kubernetes Grid*.

**Modern data layer:** Break down data monoliths with on-demand caching, messaging, and database software for modern applications with *VMware Data Solutions*.

**Unified, global multicluster operation:** Centrally manage and secure Kubernetes infrastructure and modern apps across teams and clouds with *Tanzu Mission Control\**.

## Key features of VMware Tanzu on sovereign clouds

### Sovereign-ready VMware Tanzu Kubernetes Grid

*VMware Tanzu Kubernetes Grid* is for organizations that want to operate a consistent, enterprise-ready Kubernetes runtime that offers simplified installation, automated multi-cluster operations and integrated platform services. For sovereign clouds, Tanzu Kubernetes Grid includes open-source components such as Fluent Bit, Prometheus, Grafana, and Contour that offer monitoring and ingress capabilities. Organizations can observe and adapt based on open-source metrics, traces and logs which display where



Kubernetes cluster failures may arise, and better ensure traffic is safe and allowed. Talk to your sovereign cloud provider about your requirements and deployment scenarios, and whether you require Tanzu Kubernetes Grid within a dedicated or multi-tenant shared environment.

### Sovereign-ready VMware Data Solutions

Regionally delivered sovereign clouds are essential for protection of critical data. VMware Data Solutions are also available on VMware sovereign clouds for compliant and conformant data management for highly regulated and sensitive industries. Customers have access to a self-service UI and API for lifecycle management of these services so they can tune their instances for optimal performance of their applications. Currently available products on VMware sovereign clouds include *VMware RabbitMQ*, and preview\* of *VMware SQL*. With VMware Data Solutions, organizations that are subject to a

corporate and/or national policy mandate to improve data privacy and economic innovation will be able to consume VMware Data Solutions with confidence that they will be compliant.

### Sovereign-ready VMware Tanzu Mission Control Preview

VMware is working to add support for private deployments of *VMware Tanzu Mission Control*, a global Kubernetes cluster management plane. Customers and partners who must operate in highly regulated environments, on-premises, or within sovereign jurisdictions will benefit from full Kubernetes visibility in a single control plane while retaining full control over their network connectivity. Sovereign-ready Tanzu Mission Control will also enable customers to operate a non-SaaS product so that they take advantage of managing Kubernetes at scale in a consistent, secure, and flexible way while remaining compliant and secure. Tanzu Mission control offers centralized policy management and automated disaster recovery, including application mobility between clusters.

### Sovereign-ready VMware Tanzu Application Platform

Sovereign-ready *VMware Tanzu Application Platform* provides development teams with the tools and services they need they need to get their code to production faster and more securely. Tanzu Application Platform has air-gapped installation for enhanced security and compliance in sovereign cloud environments. Developer productivity has been enhanced with the addition of Dynamic API spec registration using the Backstage API plugin to securely automate the publishing, consuming, and collaborating on APIs for software development. A new, centralized vulnerability monitoring dashboard will aid app teams with their pre-deployment security checks and secure app deployments. Tanzu Application Platform has added support for RedHat Openshift, Jenkins, and Carbon to expand the footprint of ecosystem integrations.

### Why choose VMware Tanzu on sovereign cloud?

Repatriation of modern application workloads is an emphasis for sensitive industries, especially with regulated and public-sector industries that may need to bring data and innovation back in house for compliance. Being able to repatriate or deploy applications and data locally through Tanzu on sovereign clouds can mean many benefits for these organizations, including:

**Predictability:** Customers can maintain their current development environment, skillsets, and tools, and not have to worry about significantly modifying their processes or procedures for their application deployments.

**Data compliance:** Sovereign clouds can provide the necessary guarantees to tenant data sovereignty requirements and ensure that they can meet jurisdictional regulations surrounding data access and control.

**Scalability:** Customers can leverage the sovereign cloud environment infrastructure capabilities to deploy their applications at scale, knowing that their provider has a trusted

SDDC designed and deployed through validated VMware best practices to meet their elastic workload needs.

**Minimum downtime:** Customers can take advantage of competitive SLAs from sovereign cloud providers for data availability and durability, since VMware's well-defined SDDC architecture principles and best practices will ensure data integrity for their deployed workloads.

**Flexible and responsive local service:** Modern application services using Tanzu offered through sovereign cloud providers are supported by staff that meet sovereign cloud requirements, including but not limited to meeting nationality, industry-specific or government-based jurisdictional mandates.

**Proven expertise:** Customers want to work with sovereign cloud partners that have a trusted, proven track record of service offerings and a deep understanding of national sovereignty or compliance regulations. Sovereign cloud partners offering Tanzu as an expanded service offering to their portfolios are best positioned to meet customers where they are to consolidate and expand their application footprints within the sovereign cloud requirements demanded from their business and customers.

## Summary

With regulatory, economic and talent pressures, Kubernetes adoption creates a clear path for regulated organizations to deliver additional value. With VMware Tanzu on sovereign cloud, organizations can now reduce the compliance burden while continuing to bring innovations forward. Regulated industries and government organizations that require locality and true data sovereignty will now benefit from VMware's application modernization platform. This combined solution offers a cloud-smart approach for development and operations of Kubernetes within sovereign regulations and restrictions for application and data management frameworks.

To learn more visit <https://cloudsolutions.vmware.com/services/sovereign-cloud.html>

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