



# VMware: The Counterintuitively Fastest Path to App Modernization

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# Table of Contents

- Executive Summary ..... 3
- VMware – Much More Than Just Virtualization ..... 3
- VMware’s Unique Approach ..... 4
- Refactor or Build New ..... 8
- Replatform ..... 10
- Rehost ..... 12
- Refactor and Replatform: Leveraging Services ..... 13
- Replace or Retire Apps: Increased Flexibility ..... 15
- Accelerating the Journey to a Better Future State ..... 15



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## Executive Summary

Businesses across all industries are looking to become software companies driving digital transformation efforts. They want to modernize their fleet of applications. Most have a desired future state in mind, which is typically composed of cloud-based, containerized, microservice-based applications created to run with DevOps processes, often across multiple clouds. While the vision is often well-defined, the path to the vision is not. There are huge technical, organizational, and operational hurdles to overcome and businesses find these challenges are often more difficult and time-consuming than originally expected.

VMware is here to help businesses with their application modernization efforts. Unlike traditional cloud vendors, we take a different approach that provides the following key benefits:

### QUICKEST TIME-TO-VALUE

The VMware approach enables the quickest time to value by breaking down the modernization journey into a series of short, discrete, and mostly automatable steps. This allows enterprises to realize immediate tangible business value while iteratively and quickly progressing towards their future vision.

### MAXIMUM CHOICE

VMware enables choice at all levels. We offer businesses broad infrastructure choice around the location where applications run, underlying infrastructure and hardware, and cloud provider. We also offer a wide array of choices for the application, including application architecture (traditional VM-based, container-based, microservice, etc.), public cloud services (e.g. Redshift, Cloud Spanner, and more, from any cloud), enterprise-vetted OSS packages, and both platform-as-a-service and container-as-a-service capabilities.

### LEAST DISRUPTIVE

Rather than forcing businesses to take large discontinuous “jumps” between states that are time-consuming and risky, VMware provides a consistent experience that allows them to make forward progress non-disruptively. We enable this by providing steppingstones that gently move a business towards its future state goals while preserving the flexibility to accommodate unforeseen changes.

## VMware – Much More Than Just Virtualization

Most customers are familiar with VMware as a provider of datacenter virtualization solutions generally, and with VMware vSphere in particular. However, we have moved far beyond compute virtualization. VMware Cloud Foundation™ is a full-stack (compute, storage, networking and management) hybrid cloud solution. The VMware Tanzu™ portfolio and Pivotal acquisition provide end-to-end capabilities for building, running, and managing modern applications. CloudHealth® by VMware provides multi-cloud cost optimization and governance and helps to drive operational changes in how companies develop software. VMware® Carbon Black Cloud is reinventing the security space by taking a cross capability, highly integrated approach to security. VMware NSX® SD-WAN



by VeloCloud™ is dramatically simplifying managed distributed and edge environments. VMware provides a holistic set of capabilities to help companies drive their application modernization journey.

## VMware's Unique Approach

VMware can deliver all the benefits listed above because we are doing cloud differently. Our cloud is not a public cloud like AWS or Azure. Instead we provide a powerful software infrastructure and management stack that can be layered on top of any type of physical infrastructure in any location and can run all types of applications—traditional and modern—in addition to a broad set of PaaS services. In other words, we are delivering not just cloud as a place, but cloud as an operating model, to any place or cloud that a business requires.

This approach is foundational in our architecture. Whereas the public clouds are vertically integrated silos, VMware utilizes a horizontal and flexible architecture, maximizing choice.

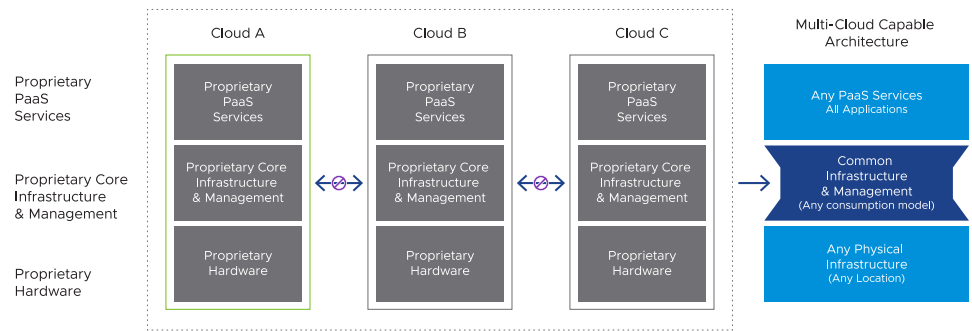


Figure 1. The challenge of siloed public clouds

This unique architectural approach enables low friction, non-disruptive, and largely automated transformation for businesses across three key areas:

- **Applications:** Traditional → Modern
- **Operations:** IT Ops → DevOps
- **Location:** Datacenter only → Mix of datacenter, cloud, and edge

Changes across these areas comprise the future state targeted by businesses, which are often manifested in multi-year roadmaps and architecture diagrams. The common



approach is to attempt to go right to that future state by attempting to “jump” directly there:

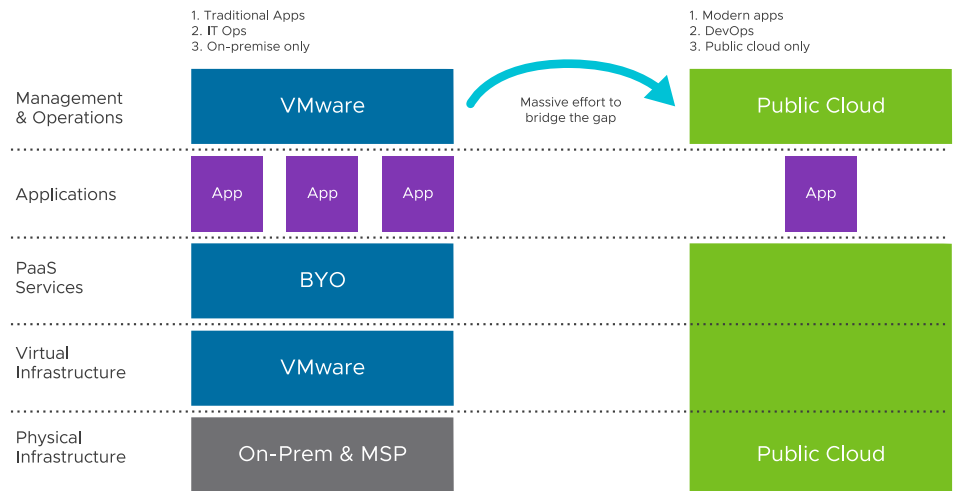
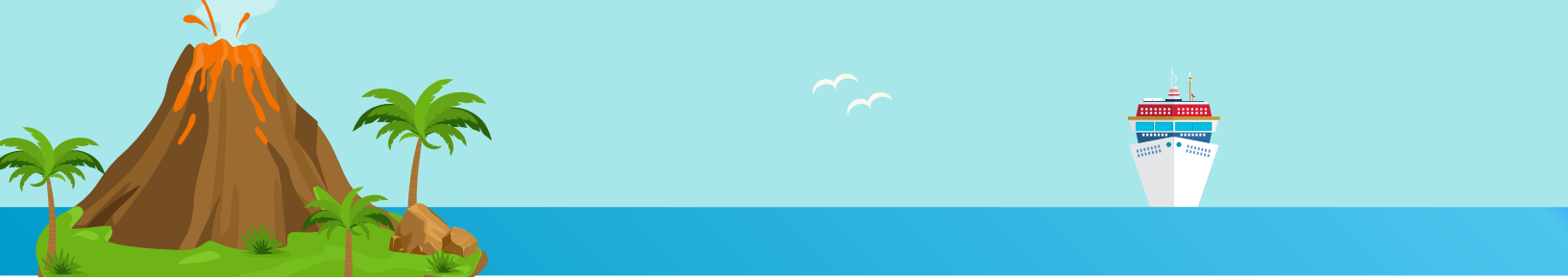


Figure 2. Typical approach for moving to the public cloud

The strategy is to force the desired changes to happen quickly by swapping out the entire stack all in one go. Rather than evolving the current teams and processes, this approach creates new teams and processes for the new stack, which ideally are aligned to the future state. The belief is that this approach is faster, easier, and cheaper than trying to change the existing system.

However, there are many downsides with this approach:

- 1. “All or nothing” set of options:** In this model, an application or application component is either completely in the old world or completely in the new world. This means that unless all the requisite effort is put in, that application or application component will still be in the old world and the business will have nothing to show for its efforts.
- 2. Inflexibility and lack of options:** Due to the all or nothing nature of this transition, it means that when new business priorities come up (such as an acquisition or decision to launch a new product) work slows down or stops on the transformation without any value being realized by the business.
- 3. Steep learning curve:** The fact that the new world is completely different from the old world means that the learning curve for developers and operations teams is very steep. This causes errors and other issues for both dev and ops, as well as the creation of new silos.



4. **Slow:** Because so much effort is required to refactor, rearchitect, retool, retrain and so forth, it can significantly slow progress. Migration to the new stack cannot be broadly parallelized because so much manual effort is needed to complete the transition.
5. **Straddling two different worlds:** While the goal may be to move everything over to the right side, the reality is that this transformation will take years (if it ever completes at all!). This will require many teams to straddle both the old stack and the new stack, again slowing progress.
6. **Single cloud centric:** Perhaps most importantly, even if the organization masters a single public cloud, most organizations are already using multiple public clouds. As more and more applications become multi-cloud in nature, the need for teams to work across multiple public clouds is increasing. This trend further exacerbates all of the previously stated challenges associated with today's current approach to leveraging the public cloud.

In the end, while this approach is well-intentioned, its disruptive nature is typically not optimal for all the reasons just listed. VMware offers an alternative approach to enable a non-disruptive evolution that we believe will be easier, faster, cheaper, and have higher success rates.

How does VMware accomplish this? It goes back to our unique architectural approach. Consider the way VMware's product architecture has evolved over the past few years:

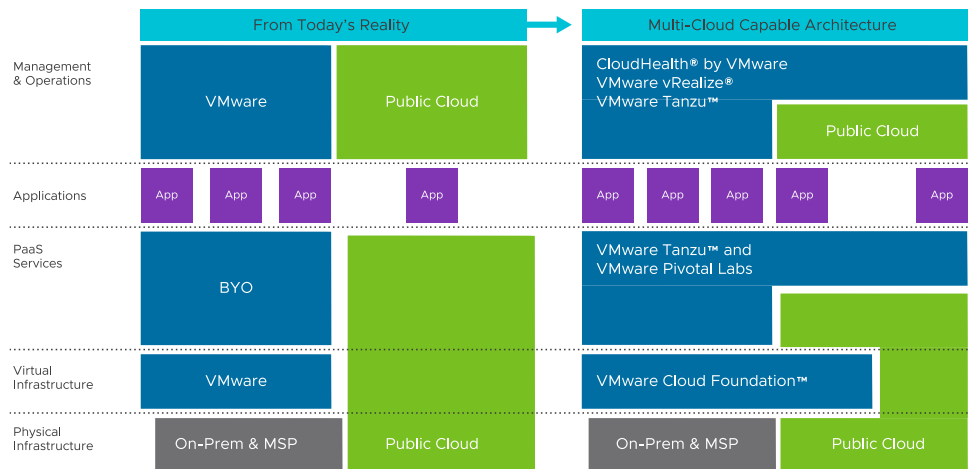


Figure 3. VMware's unique architecture for multi-cloud use



Briefly, let's focus on a few key properties of VMware's architectural approach:

#### MULTI-CLOUD

As noted above, VMware is creating a new kind of cloud. This is a cloud that spans all other clouds at many levels of the stack—management and operations to PaaS services, to infrastructure, to networking. From an architectural perspective, VMware's cloud is natively multi-cloud.

#### KUBERNETES

VMware has fully embraced Kubernetes throughout the stack. vSphere 7 with Kubernetes represents the biggest evolution of our core infrastructure offering. VMware Cloud Foundation makes Kubernetes a native part of VMware infrastructure. This means all applications can now be run and managed with Kubernetes.

#### APPLICATION MOBILITY

Because VMware's offerings are supported across all public clouds as well as on-prem, businesses have unprecedented freedom as to where to locate applications. Businesses can move applications to be closer to users or data (e.g. edge computing) or they can put them in the public cloud close to differentiated services (e.g. Amazon Dynamo or Google Cloud Spanner).

#### CONSISTENCY

VMware solutions are consistent at many different levels of the stack. For example, CloudHealth provides cost and reporting consistency across clouds and on-prem vSphere. VMware Tanzu provides consistent Kubernetes and PaaS environments and management. VMware Cloud Foundation provides runtime consistency. VMware NSX® provides network capability and management consistency across clouds and on-prem vSphere.

All these properties are crucial as businesses have dozens to hundreds to thousands of applications that they want to rationalize and modernize.

#### APPLICATION MODERNIZATION AND MULTI-CLOUD

This application rationalization process typically has five possible outcomes:

- **Refactor:** The application is rewritten, typically to a microservices architecture
- **Replatform:** Usually from VMs to containers and public cloud infrastructure
- **Rehost:** Migrate "as-is" to the Cloud
- **Replace:** Usually with SaaS
- **Retire**

While, in a perfect world, businesses may want to refactor all their applications, the reality is that this isn't feasible due to the time and effort required. Instead, businesses need to evaluate each application and understand its future needs. Many can simply be rehosted to take advantage of modern cloud infrastructure and others can be replatformed to leverage the Kubernetes ecosystem. A few of the most business-critical will be refactored to a modern, distributed application, enabling greater engagement with customers. The reality is that each business will likely be doing all of the above across the breadth of its application portfolio.



**VMWARE IS THE FASTEST PATH TO MODERN APPLICATIONS**

VMware amplifies developer velocity by making it easier to build with secured containers and microservices, and then automating the process of pushing their code to production. With VMware Tanzu, organizations can build new apps on any cloud for any cloud.

**QUICKEST TIME-TO-VALUE**

*VMware Tanzu™ Application Service™* automates the application build, deploy and run pipeline. Microservices, APIs and data models are all turnkey aspects of the Spring development framework, speeding development of modern applications.

**MAXIMUM CHOICE**

*VMware Tanzu™ Application Catalog™* provides developers with a curated catalog of the broadest choice of ready-made, customized container images they can use to more rapidly build applications.

**LEAST DISRUPTIVE**

The *VMware Pivotal Labs* team has completed 2,000+ projects for customers and can guide teams through platform design and deployment, through to actual application development to embedding development patterns into the organization, helping them avoid pitfalls and realize all the benefits of modernization applications.

As businesses rationalize their applications, various considerations for that application may necessitate a certain cloud as its destination. Some applications, such as those from Microsoft, may run best on Azure, while others may want to take advantage of Google Cloud Platform’s AI capabilities. Still others may be replaced with SaaS applications that run in only one cloud. Typically, these decisions are made by each application team based on their application’s individual needs. This naturally leads to multi-cloud proliferation. Because of this, multi-cloud is a reality for every business as they rationalize and modernize applications.

Businesses are faced with all five types of application rationalization running across many different clouds. VMware can help with all of these different combinations.

**Refactor or Build New**

A refactor approach means that one or more of the application components are rewritten (or sometimes the entire application!). The programming language may change, the application architecture will likely change, and the build process will almost certainly change. We combine this section with Build New (building from scratch) because the underlying goals are the same: write new application code using modern techniques, services, and application architectures.

In order to help businesses more readily build new applications or refactor them while doing so simply and securely, VMware introduced the VMware Tanzu family of products:

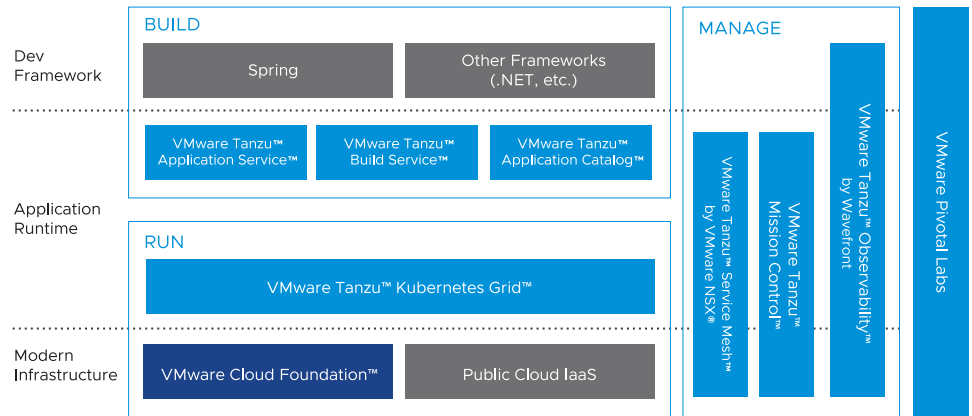
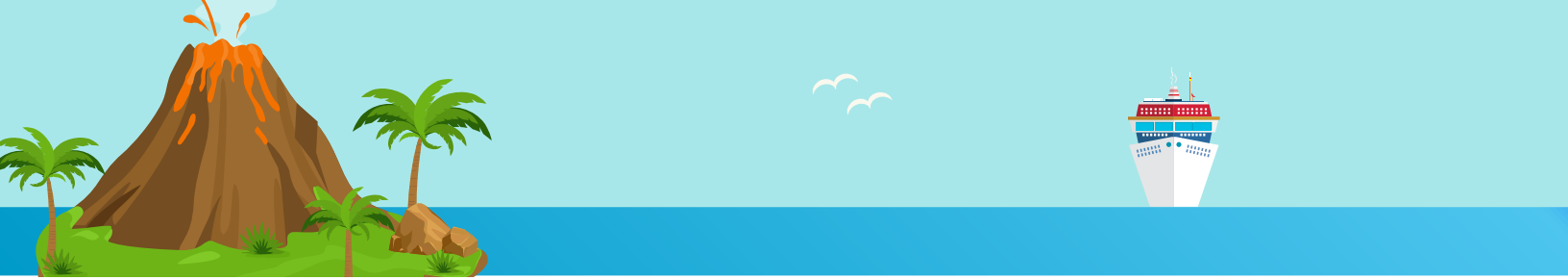


Figure 4. VMware Tanzu™ and VMware Pivotal Labs

As mentioned above, the key focus when refactoring or building new is modifying or writing application code, yet developers on average only spend 20% of their time coding. The remaining 80% is spent on infrastructure, scaffolding, and more to support the application. To drive faster application modernization, businesses must focus on automating as much of that 80% as possible. This is exactly VMware’s approach with the VMware Tanzu portfolio of products.





Businesses need to provide a modern development framework to their developers. Spring allows developers to use microservices patterns, APIs, and data processing in a turnkey fashion. Spring Boot is built for Spring-based microservices applications and contains everything needed to “just run” the application on a developer’s laptop or anywhere else. Spring Boot is used in tens of millions of builds each month and is a key part of many enterprise application developers’ build processes.

Spring Cloud extends the simplicity of Spring by providing common patterns used in distributed systems, allowing developers to easily take advantage of them rather than building or integrating them in themselves. These patterns include service registration and discovery, circuit breakers, leadership election, and more. Using Spring, Spring Boot, and Spring Cloud, developers can build a robust, microservices application quickly and effectively.

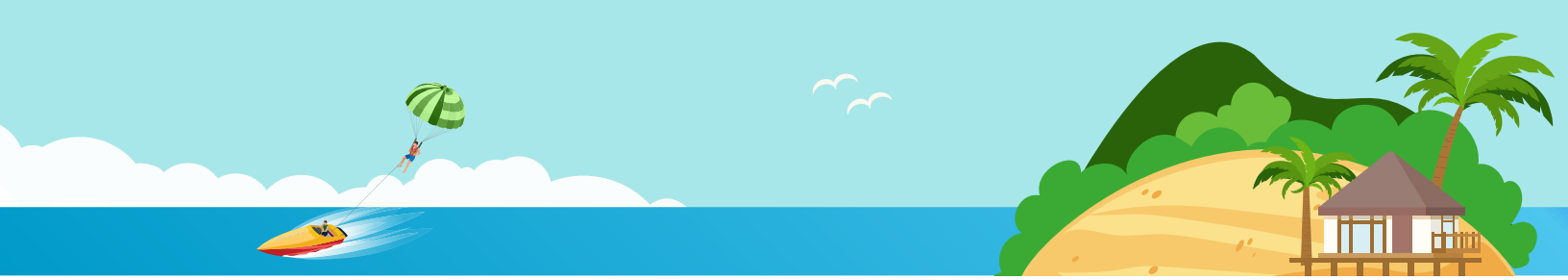
Once an application is built using Spring, it’s a natural evolution to run that application in production in VMware Tanzu Application Service—an open source-based, multi-cloud application platform-as-a-service. VMware Tanzu Application Service replaces the manual process of pushing code to production with automation, including managing dependencies, accounting for tenancy, ensuring compliance, and more. That allows enterprises to deploy code tens or hundreds of times per day, and ensure their applications are always patched and best matched to customer needs.

Businesses can speed their refactoring or build new effort, by using curated, validated open source (OSS) container images. Many developers want to leverage OSS components but spend time finding, downloading, and vetting them (often accidentally using older versions with known vulnerabilities). VMware Tanzu Application Catalog draws on a catalog of hundreds of OSS container images validated by IT and security and puts them at the fingertips of developers. IT and security can ensure that all parts of the image—operating systems, configurations, agents and tooling—are in full compliance with their standards. We estimate VMware Tanzu Application Catalog saves 1.5 billion compute hours every year.

VMware Pivotal Labs helps businesses target applications for refactoring and then works with development teams to build repeatable patterns they can use across tens or hundreds of applications. Pivotal Labs focuses not just on writing code, but how it is written and how the application is operated. They can help introduce development and operations teams to DevOps principles. Pivotal Labs has 700+ experts spread around the world, able to work closely with businesses anywhere they require.

Developer time is frequently absorbed by troubleshooting, which takes time away from writing new code. Debugging performance issues in modern, distributed applications can be extremely tricky and time-consuming. Advanced analytics are needed to identify patterns and point to root causes.

*VMware Tanzu™ Observability™ by Wavefront* is a highly scalable metric store and analytic service enabling businesses to identify anomalies and root cause the underlying issue. It supports the creation of custom metrics on the fly, across millions of metrics a second, and advanced smart alerts that can proactively pinpoint problems before customers are impacted, allowing developers and operations team to more quickly root cause issues.



Taken together, the VMware Tanzu product portfolio enables developers to spend less time on overhead and more time writing application code. As customers have adopted VMware Tanzu, they have seen tremendous gains across the board:

#### VMware Tanzu customer results

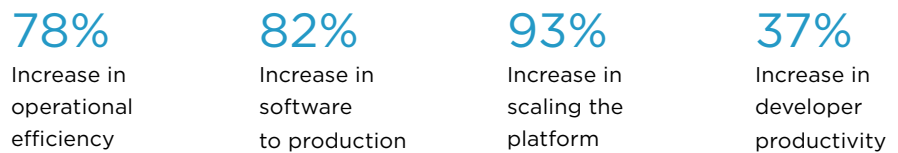


Figure 5. VMware Tanzu customer benefits

We've seen customers go from eighteen releases per year to 120, while others perform 300+ application updates per day. Still other customers operate at scale with just six operators supporting 1,200+ developers. By providing a series of core building blocks, the VMware Tanzu portfolio allows customers to dramatically accelerate their application refactoring efforts and more quickly realize business value. It provides businesses great choice and flexibility in how and where those applications are built, run, and managed, while ensuring security and compliance throughout.

## Replatform

Replatforming is a general term that refers to moving an application or application component to a new infrastructure, possibly changing the application code a bit to take advantage of that new environment. In this document we'll talk about replatforming specifically in the context of moving into a Kubernetes environment. We chose to focus on Kubernetes as it is the industry-standard container platform. All major cloud providers now offer a Kubernetes service and we see wide-ranging use of Kubernetes across our customer base.

vSphere 7 integrates with Kubernetes in two ways. First, it delivers an integrated Kubernetes container orchestrator into vSphere using [VMware Tanzu™ Kubernetes Grid™](#). VMware Tanzu Kubernetes Grid enables the provisioning and lifecycle management of Kubernetes clusters, automating away a lot of the complexity of managing Kubernetes environments. In addition to vSphere, VMware Tanzu Kubernetes Grid supports any cloud a business wants, including AWS and other public clouds. Each VMware Tanzu Kubernetes Grid cluster is standardized and upstream compliant, meaning complete consistency and portability, even across clouds. This consistency is key to simplifying Kubernetes use.

Second, vSphere 7 leverages Kubernetes as an infrastructure interface. Specifically, vSphere now has two APIs: the traditional vSphere API and the Kubernetes API, both of which can be used to manage applications on vSphere. These are not two views of different systems, but actually two different APIs with a view into the same underlying



## VMWARE IS THE FASTEST PATH TO KUBERNETES

VMware built Kubernetes into vSphere and extended it to support VMs. This enables businesses to manage all their vSphere applications via Kubernetes while continuing to operate vSphere with the same tools and processes.

## QUICKEST TIME-TO-VALUE

By evolving underneath the applications that already run on it, vSphere with VMware Tanzu allows applications to be containerized without changes to application code or operational tooling, allowing businesses to quickly adopt Kubernetes.

## MAXIMUM CHOICE

Businesses can choose which aspects of the Kubernetes ecosystem they want to take advantage of and when. They can take advantage of the capabilities they need to meet urgent business needs.

## LEAST DISRUPTIVE

Evolving vSphere to include Kubernetes means operations teams can leverage the same tooling and training as before while supporting Kubernetes for their development teams.

system. The Kubernetes API has been extended to support all the great capabilities of vSphere, such as powerful network and storage features and, most importantly, VMs. (Yes, with vSphere, Kubernetes understands VMs now!). This means that all existing VM-based applications can be managed with Kubernetes.

This capability is very powerful because it enables businesses to embrace Kubernetes and realize its benefits for all their applications, with little to no application code modification or operational tooling changes. In all other replatforming scenarios, there is a jarring and dramatic change when moving from VMs to containers. But with vSphere, we have simply integrated Kubernetes in to deliver a seamless transition for customers.

Businesses can take advantage of the vast Kubernetes ecosystem without any application code modification. For instance, all vSphere applications can now be defined by Kubernetes manifest files. These are declarative specifications for how an application should be provisioned across compute, storage, and network, along with related policies. All applications can now reside in container images, which can be stored in a centrally managed container registry.

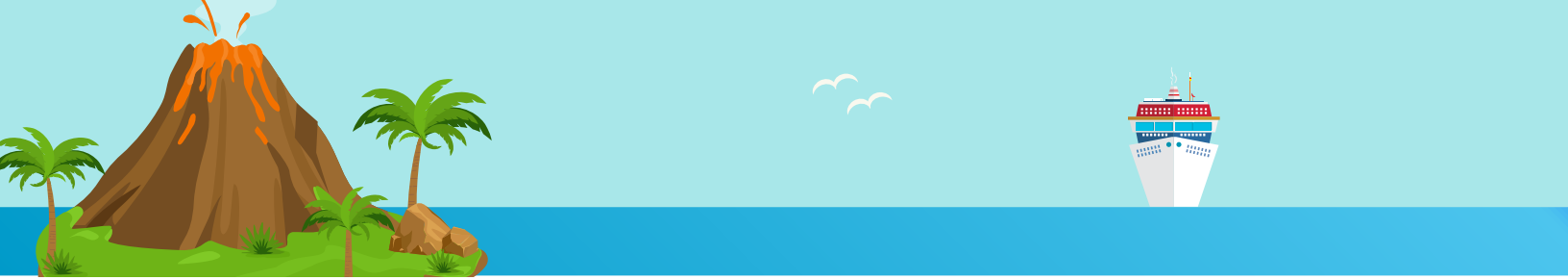
These container images can be broken up into layers that can be independently managed together by operations and development teams. Moreover, businesses can take advantage of innovations in the container image space, such as automatic CVE scanning and container image signing, which can prove their provenance and validate that the images have met enterprise criteria for security and testing.

Furthermore, Integrating Kubernetes with vSphere improves the developer experience. Developers can use the Kubernetes API and tooling they prefer to interface with vSphere in a safe and controlled manner, while operators can continue to use the familiar vSphere API and tooling. This enables developers and operators to each have the experience they want while working on a shared view of the environment, improving their ability to collaborate and quickly work through issues.

The biggest gain for developers is that they can now get self-service access to vSphere. Operators can create Kubernetes namespaces within a vSphere cluster and grant developers access to that namespace. This namespace can have resource management controls and limits and developers are not able to see or access anything outside of the namespace, enabling a lightweight form of multi-tenancy in vSphere. Meanwhile developers can directly access the namespace via the Kubernetes API to provision applications, additional Kubernetes clusters, or anything else they'd like using Kubernetes Operators.

While much of the discussion here has been about Kubernetes, it's important to remember that this is still the familiar vSphere platform under the covers. This means that all the tooling, training, and skillsets businesses have invested into vSphere continue to be applicable even to these containerized applications.

As businesses proliferate applications across a large number of Kubernetes clusters, *VMware Tanzu™ Mission Control™* provides a central management portal for Kubernetes across cloud. Tanzu Mission Control manages cluster lifecycle either via Tanzu Kubernetes Grid or by attaching to Kubernetes clusters created by public cloud services



**VMWARE IS THE FASTEST PATH TO CLOUD**

VMware Cloud Foundation is now available on-prem and across all major public clouds and service providers, enabling customers to migrate applications from on-prem to cloud or vice versa, without any application changes, all the while using their existing operational tools and processes.

**QUICKEST TIME-TO-VALUE**

Businesses can now literally vMotion workloads from on-prem to the cloud. Using VMware HCX, many customers have moved hundreds of applications to the public cloud in just a matter of days or weeks.

**MAXIMUM CHOICE**

VMware Cloud Foundation runs on all major clouds – AWS, Azure, GCP, Oracle Cloud, IBM, Alibaba, and more. It runs wherever businesses want to rehost their applications.

**LEAST DISRUPTIVE**

The rehosting process is seamless for customers as it is the same vSphere interface and operational tooling and processes as on-prem.

such as Amazon Elastic Kubernetes Service, Azure Kubernetes Service, or Google Kubernetes Engine. It handles identity and access for admins and developers across all clusters, manages cross-cluster configuration and security, drives audit and compliance (via Sonobuoy), and provides data protection (via Velero).

**Rehost**

Rehosting refers to changing the infrastructure or operational aspects of an application without changes to the application itself. Businesses generally have important uses for these applications, but at the same time can't justify spending a lot of time or resources to modify the application code itself. In this case, they often want to get some cloud benefits and cloud operational models for these applications, but without the expense of refactoring or replatforming.

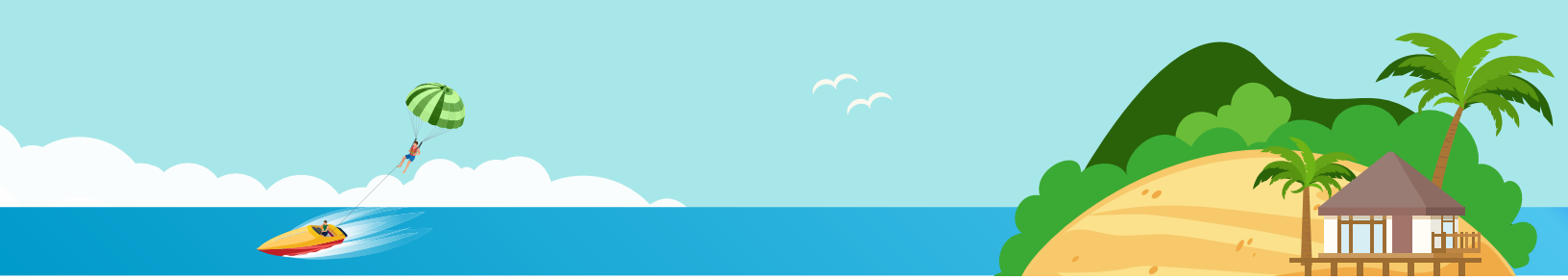
While rehosting has been a desire of many organizations, many businesses have struggled with rehosting applications from on-prem to the public cloud. That's because rehosting often involves changes to the underlying infrastructure, necessitating changes to application code, operational tooling, processes, and more. This means that moving to the cloud becomes a difficult and complicated proposition.

We make all this possible by delivering consistent infrastructure across all locations where a business wants to run its applications. We created a foundational infrastructure building block – VMware Cloud Foundation, which contains everything needed to create a software-defined datacenter (SDDC): virtualized compute, storage, networking and management. We implement this with our vSphere, *VMware vSAN™*, VMware NSX and *VMware vRealize®* technologies, along with a component called SDDC Manager. The SDDC manager's job is to orchestrate the lifecycle of these components and more generally manage the SDDC infrastructure.

With VMware Cloud Foundation as a building block, we have delivered unprecedented choice in how customers consume SDDC infrastructure, particularly along two dimensions: consumption model and location. Customers can choose to consume it as software (in which case the customer is the operator) or as a service, either operated by VMware or one of our many partners:

CUSTOMER OPERATED	PARTNER OPERATED	VMWARE OPERATED
VMware Cloud Foundation	4,300+ VMware Cloud	<i>VMware Cloud™ on AWS</i>
<i>DellEMC VxRail</i>	<i>VMware Cloud Provider Program Partners</i>	<i>VMware Cloud™ on AWS Outposts</i>
OEM Partner Integrated Offerings	<i>Azure VMware Solutions</i>	<i>VMware Cloud on Dell EMC</i>
	<i>Google VMware Solutions</i>	

Figure 4. VMware Tanzu™ and VMware Pivotal Labs



VMware Cloud Foundation can be deployed in an on-premises datacenter, at a service provider's datacenter, in mega-cloud datacenters, and at edge locations (e.g. retail stores, factories, etc.).

To facilitate ease of mobility across all these different locations and consumption models, we introduced VMware HCX, which enables customers to do bulk migrations of applications from on-prem to cloud (or vice-versa!) as well as between clouds. HCX provides customers with powerful automation capabilities enabling them to move dozens or hundreds of workloads in a coordinated fashion.

In fact, VMware has made rehosting so fast and simple we are seeing unprecedented demand for cloud migrations. Whether it's a business looking to get out of the datacenter business, for bursting capacity, or for DR to the cloud, we're seeing huge uptake of VMware Cloud on AWS. And customers are realizing the benefits:

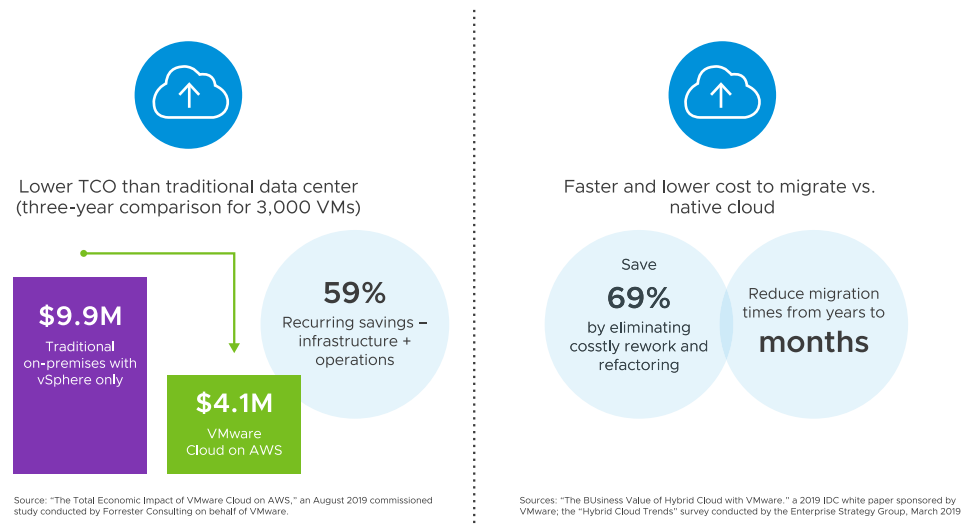


Figure 6. Cloud Foundation customer benefits

## Refactor and Replatform: Leveraging Services

A major benefit of moving an application or application component to VMware Cloud on AWS or another hyper-scaler cloud running VMware Cloud Foundation is that the application or application component is now “close” to higher-level public cloud services. Migrated applications can take advantage of low-latency, high-bandwidth, no egress-charge access to a plethora of cloud services or to another application that is running on the cloud's native VM service.

In addition to migrating a business's applications, VMware can also bring vendor functionality to the business's application. Amazon RDS on VMware is an instantiation of RDS on VMware Cloud Foundation, anywhere VMware Cloud Foundation runs (which as noted is basically anywhere!). Azure IoT Edge runs on VMware Cloud Foundation as well.



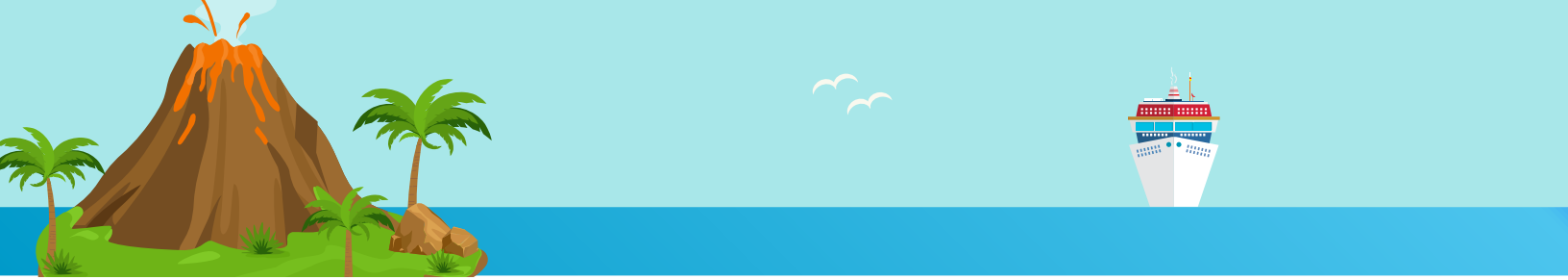
These offerings become really powerful when combined across vendors, for instance Azure ML models inferencing off a Postgres database managed by RDS on on-prem VMware Cloud Foundation.

VMware can also deliver OSS-based application platform services. As the table below shows, there are OSS equivalents to most public cloud services available today:

CATEGORY	CLOUD SERVICE	EQUIVALENT OSS PROJECT	EQUIVALENT OSS SERVICE	OSS VENDOR
Search	Amazon Elasticsearch Service	Elasticsearch	Elastic Enterprise Search	Elastic
Non-relational or document database	Amazon DocumentDB Amazon Keyspaces	MongoDB Apache Cassandra	MongoDB Atlas DataStax Astra	MongoDB DataStax
Key/value store	Amazon ElastiCache for Redis Azure Cache for Redis Google Cloud Memorystore	Redis	Redis Enterprise	RedisLabs
Streaming data	Amazon Kinesis Azure Event Hubs	Apache Kafka	Confluent Cloud	Confluent

*Table 2. OSS equivalents to leading Cloud Services*

There is a tremendous amount of innovation happening in the OSS world and businesses want to be able to take advantage of that. Many OSS vendors are now providing Kubernetes Operators for their offerings, meaning that they have automated the deployment, lifecycle, and possibly some aspects of operation using Kubernetes. Since Kubernetes is now built into vSphere, it is easy for businesses to take advantage of these Kubernetes Operators in their vSphere environments. In addition, as shown in the table above, many of these vendors also offer managed versions of their solutions, where the vendor operates their software on behalf of the customer. The power of OSS is that it works across any cloud or environment, providing greater choice and flexibility to businesses, and these OSS projects run seamlessly on top of VMware.



## THE PRESIDIO AND VMWARE PARTNERSHIP

Presidio and VMware collaborate to accelerate our shared customers' digital transformation journeys. Presidio combines its strategic consulting and lifecycle services with VMware's innovative technology platforms, to design, implement and manage agile, secure, multi-cloud solutions optimized for each customer's unique requirements. Together, Presidio and VMware help our customers realize better business outcomes in a dynamic and competitive marketplace.

Learn more about Digital Transformation at [presidio.com/bigcloud](https://presidio.com/bigcloud)

## Replace or Retire Apps: Increased Flexibility

When an application is decommissioned – either being replaced with something else (often SaaS-based) or the application's functionality is no longer needed – winding it down can take significant time. VMware provides the opportunity to treat these applications in the "rehost" category until they are ready to be decommissioned. This way application retirement won't prevent datacenter evacuations or other activities that businesses want to move forward on. This eliminates having many business-directed actions tied up waiting for these applications to go away. Instead businesses can parallelize their efforts around modernizing some applications and shutting down others.

## Accelerating the Journey to a Better Future State

Throughout this document, we've discussed how VMware can uniquely help businesses achieve their future state direction. We can help when that future state is VMware and when it is not. For instance, we have many customers who have chosen a strategic public cloud partner and want to move most or all their applications there. VMware can help with this! Given that most of those applications already run on VMware on-prem and VMware has infrastructure capabilities in all the mega-clouds, it means businesses can trivially rehost those applications. Then the business can replatform and refactor those applications to run on the native cloud. This, of course, is an effort that takes many years. The point is that VMware can accelerate the move into the cloud environment and then the business can prioritize which applications it moves to natively run on that cloud.

Many customers also see VMware as their future state. As mentioned, VMware's cloud is different than the traditional public clouds. Instead of being vertically integrated, it's horizontally distributed. This architecture allows businesses maximum choice as to where they place applications, the services those applications consume, and how the applications and infrastructure are operated. Many businesses prefer the flexibility and choice of this approach. And, of course, many businesses realize that while they have a future state direction right now, that direction may change in the future. And if it does, optionality will be key. These businesses choose VMware to provide them with choice and flexibility in an uncertain, everchanging world.

## Contact VMware

For help architecting a future state that accelerates your application modernization efforts, engage your local VMware team or one of the many thousands of partners that support VMware technologies. Working side by side with you, we can help architect an approach to application modernization that provides your organization with the best combination of time to value, choice, and operational simplicity.