GET STARTED

VMware Application and Cloud Modernization Services Overview

Spur Innovation to Deliver Better Customer Outcomes

Software is at the heart of every business. Creating more value for your customers requires transitioning your organization into a software company with modern application development and cloud capabilities. Done well, the benefits for your customers and your company are tremendous. But there are complex technical, organizational, and operational hurdles to overcome.

If you're like most enterprises, you have an application estate with hundreds to thousands of applications running on a variety of platforms.

You need to **modernize this application portfolio** while simultaneously deploying the technologies required to **create a secure, resilient cloud ecosystem** that supports both **private and public cloud.**

You need **new capabilities for both IT and developers** so that teams can build, run, and manage your modernized apps on any cloud infrastructure.

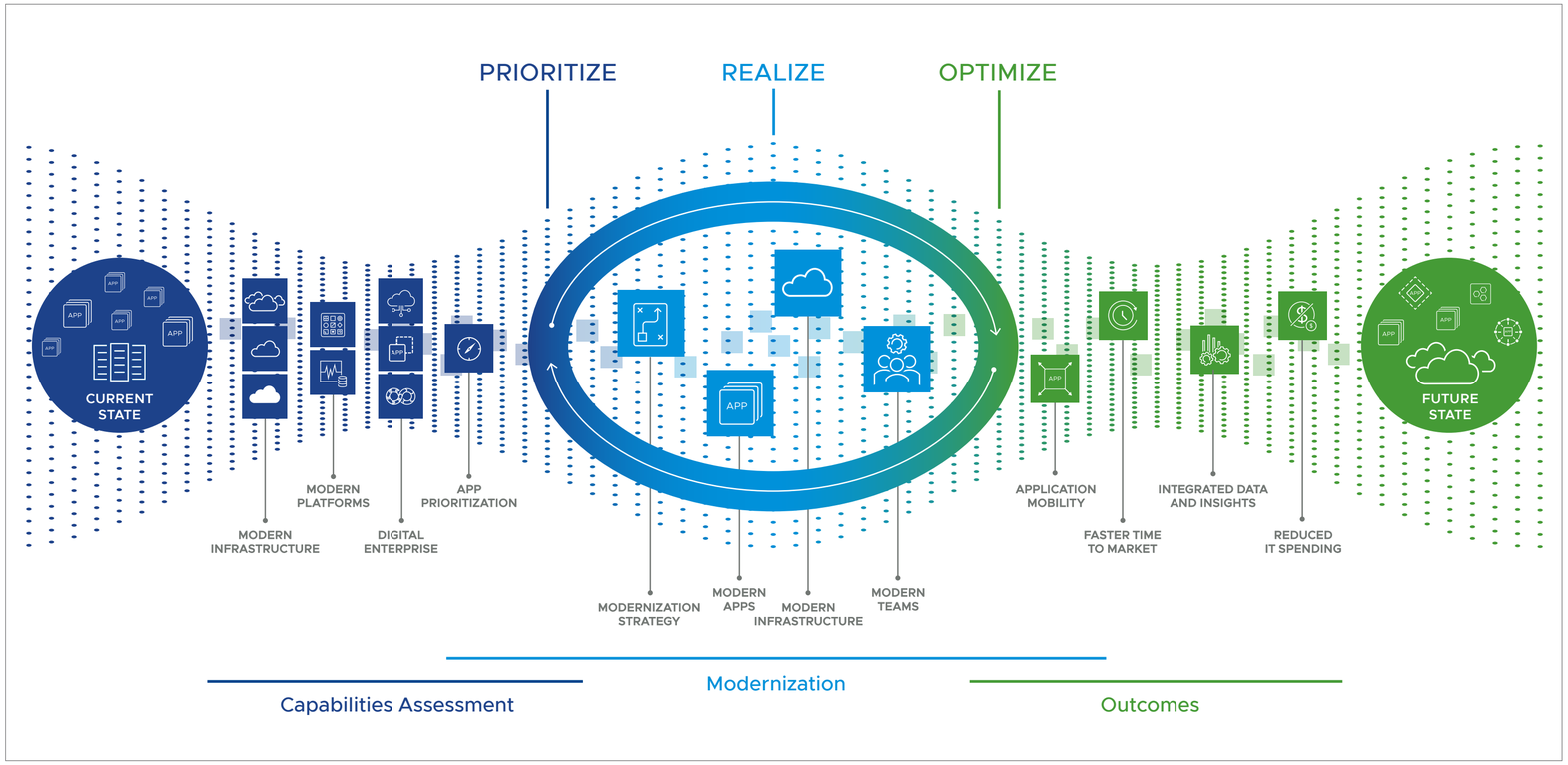
And you need to scale this across your organization so that you **continuously achieve outcomes.**

VMware **Customer Experience and Success** is here to help. Our unique approach means that you acquire skills while we work collaboratively with you to modernize your apps and infrastructure. Together, we will start small, working iteratively to achieve quick, measurable outcomes, and establish the tools, processes, and patterns to help you scale fast and realize value in a matter of days and weeks, not months or years.

App and Cloud Modernization Framework

Moving from an application estate residing on a variety of platforms to one where apps are modernized and residing on the optimum cloud infrastructure requires a disciplined approach.

We use the VMware App and Cloud Modernization Framework to help you modernize applications while simultaneously building new capabilities. It's important that you modernize both apps and IT together, not separately.



Outcome-Focused Capabilities Assessment

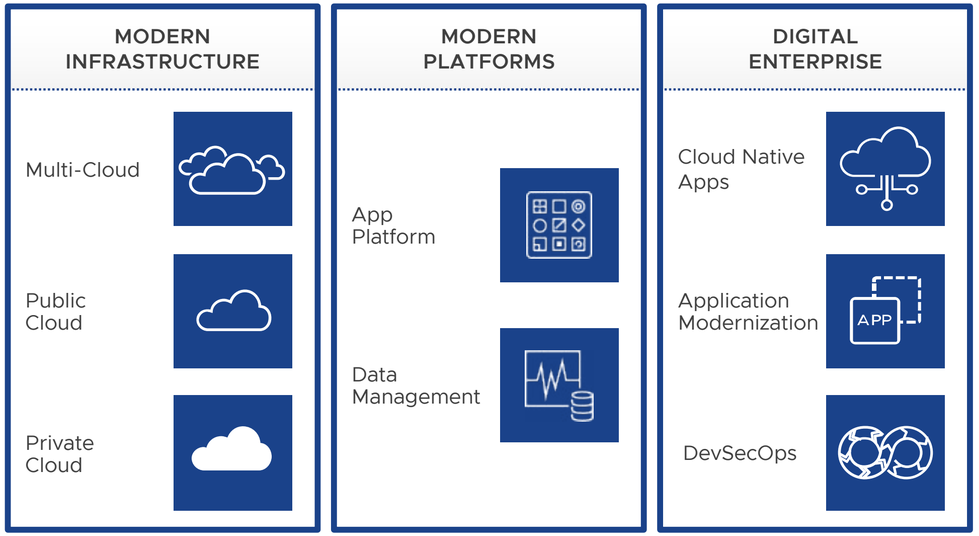
Our App and Cloud Modernization Model is at the heart of our solutions-based, outcome-oriented methodology to simultaneously address apps, cloud, and teams' capabilities.

During a half-day workshop, we walk business and IT stakeholders through an expert-facilitated session where we identify your most important outcomes and uncover obstacles to achieving those outcomes. We assess the current state of your capabilities, competencies, and culture across three areas – Modern Infrastructure, Modern Platforms, and Digital Enterprise.

Modern Infrastructure addresses IT capabilities across cloud infrastructure, whether it is public, private, or multi-cloud.

Modern Platforms addresses your ability to reduce complexity through developer abstractions, services, and interfaces; to enable apps to access diverse data sources; and for IT Ops to apply modern software engineering concepts to managing systems.

Digital Enterprise addresses how well your IT and development teams can deliver high quality code to production frequently and securely with automation, improved processes, and modern software development methodologies, and your ability to deliver and manage any app on any cloud on any device.

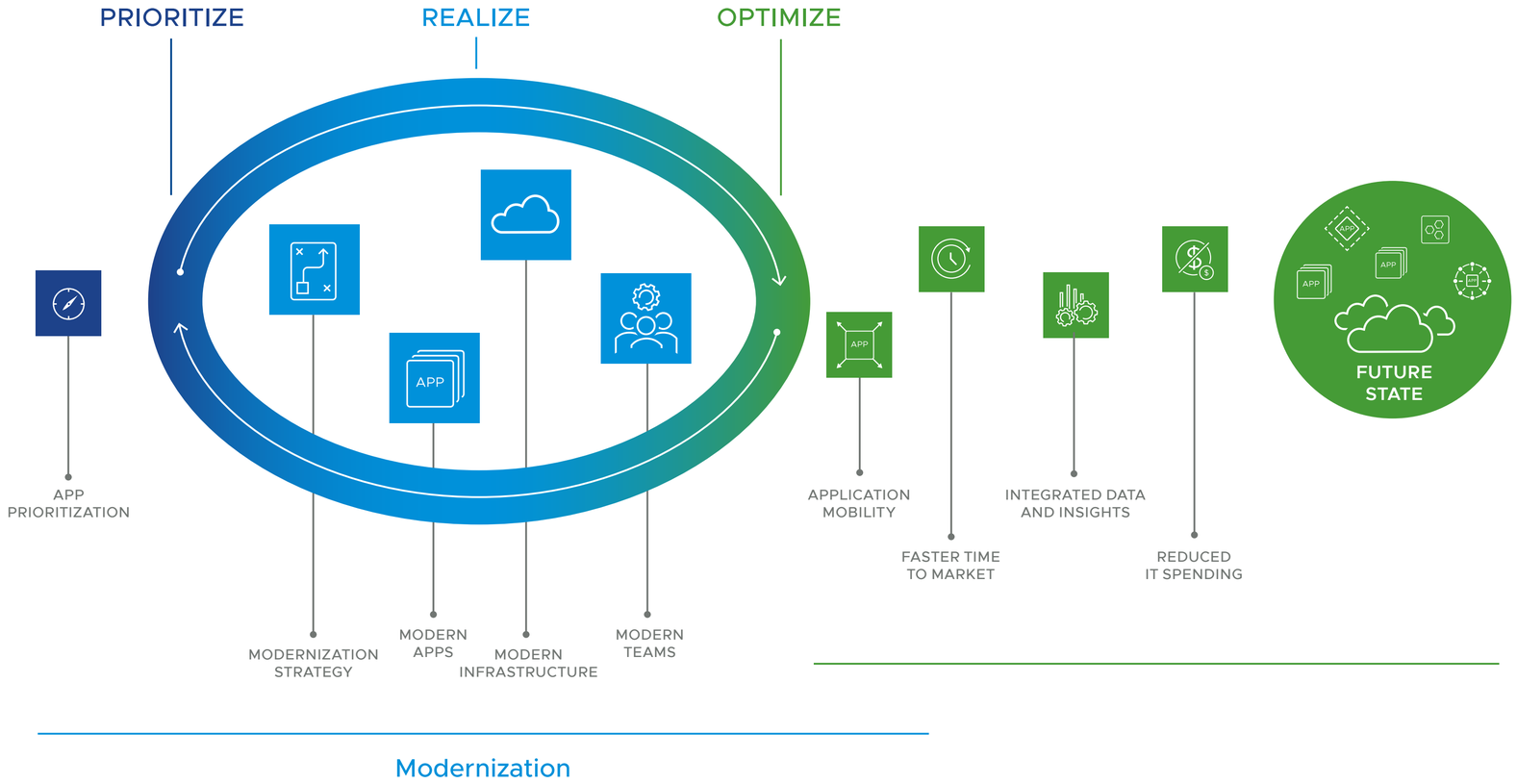


This process uses industry standard Capability Maturity Model Integration (CMMI) models as the basis of the workshop assessment activities. Our automated tool allows us to capture the data in real time and map out the "current state – future state" gap analysis based on the mandatory capabilities defined within a particular competency. The gap analysis is used to create timelines and workstream priorities that best fit your desired outcomes. The deliverables include a high-level assessment of current state, detailed gap analysis graphs, and a KPI Impact Analysis.

With needed capabilities identified, we develop the modernization plan. We prioritize which apps to modernize first and the cloud infrastructure on which they are best suited.

Through our highly repeatable, efficient “prioritize, realize, optimize” methodology, we work collaboratively with you to modernize your apps and infrastructure and create modern teams and processes. We work alongside your practitioners, imparting proven practices and building a library of resources that set you up for success long after our engagement ends.

Our iterative process shows results quickly, enabling you to continuously realize outcomes. Let’s take a look at each step in more detail.



Prioritize – Determine App Modernization Strategy

A typical organization's application portfolio consists of hundreds to thousands of applications that comprise the spectrum from aging monoliths to modern, cloud native apps that leverage microservices and APIs. The decision regarding the desired future state and corresponding action for applications in the portfolio must be grounded in both the expected return from modernization and the risks. Prioritizing which ones to modernize first and where each workload should run is challenging. Our iterative approach to assessing and modernizing apps streamlines the process and enables you to start small and quickly scale with automated tooling, proven techniques, and repeatable patterns. You will begin executing application modernization in weeks or even days, not months.

Instead of evaluating thousands of applications as part of a large assessment project, we select a subset of your portfolio on which we will work. We quickly obtain quantitative and qualitative data and build an initial backlog so that you have a running start with minimal risk. We evaluate the business, technical, and organizational characteristics of your portfolio to determine whether you should rehost, replatform, refactor, retire, or retain individual apps. We address these key elements:

- **Business considerations** include business functionality and its market opportunity, operational costs, business criticality, compliance, and resiliency
- **Technical considerations** include application runtime and operational architecture patterns, underlying technologies and data accessibility, and portability
- **Organizational factors** include ownership (business or IT), availability of skills in the job market, application maturity and strategic relevance to the corporate mission

We determine whether you should rehost, replatform, refactor, retire, or retain individual apps:

Refactor – rewrite the application, typically to a microservices architecture, slice by slice. This offers high potential return, growth, and innovation opportunity, and is more time intensive.

Replatform – containerize an existing application with minimal change. This strategy takes advantage of increased automation, speed, and scalability.

Rehost – migrate the application "as-is" to cloud. This focuses on IT efficiency and cost savings.

Retain – do nothing if the application shows low potential return from a modernization investment.

Retire – typically replace with SaaS, but may include retaining the data while discontinuing the application.

With the modernization pathway for the prioritized apps and the supporting capabilities identified, we execute a standardized approach to simultaneously modernize apps, modernize infrastructure, and modernize developer and operations' teams. Let's talk about how we modernize apps (replatform, refactor, and rehost) in more detail.

Realize - Replatform Applications

Replatforming is a general term that refers to moving an application or application component to a new infrastructure, possibly optimizing the application code a bit to take advantage of that new environment.

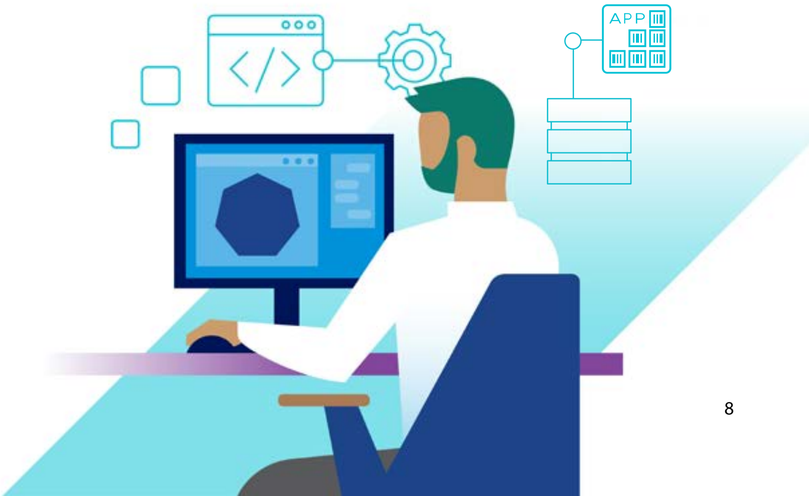
We replatform apps into Kubernetes environments, such as VMware Tanzu Kubernetes Grid, as Kubernetes is the industry-standard container platform supported by all major cloud providers. Kubernetes makes it possible to deploy and run complex applications requiring multiple containers by clustering physical or virtual resources for application hosting. It is extensible, self-healing, scales applications automatically, and is inherently multi-cloud.

Using vSphere with VMware Tanzu, we can replatform ("containerize") applications without making changes to application code or operational tooling, enabling you to take advantage of the vast Kubernetes ecosystem and the benefits of containers. Containers encapsulate an application in a form that's portable and easy to deploy. They can run on any compatible system in any cloud and they consume resources efficiently, enabling high density and utilization.

Operations teams can manage all their vSphere hosted applications via Kubernetes while continuing to operate vSphere with the same tools and processes. Developers can use the Kubernetes API and tooling to interface with vSphere. This enables developers and operators to each have the experience they need while working on a shared view of the environment, improving their ability to collaborate.

REPLATFORM APPLICATIONS

- Containerize and package applications
- Optimize applications for Kubernetes
- Enhance build practices
- Re-work automation to deploy to Kubernetes
- Test and validate success of applications



Realize – Refactor Applications

Refactoring an application involves making significant source code changes in order to break down complex, brittle systems into a more flexible architecture. This often involves using microservices and APIs to create multiple component services which enable greater parallelism during both development and execution. Refactoring applications into cloud native architectures has the biggest impact when your goal is faster innovation and improved developer productivity.

When we refactor an application (or a system of systems), one or more of the application components are rewritten (or sometimes the entire application is reimagined). The refactored applications can take advantage of modern application architectures and programming languages. This also provides an opportunity to adopt modern developer frameworks and practices that increase developer productivity. We partner with you to identify applications for refactoring based on your business goals. We then work collaboratively with your teams to help you adopt lean, iterative ways of developing applications, while utilizing and documenting repeatable patterns that can be used across tens or hundreds of applications. We focus not just on writing code, but how it is architected, how to address associated data systems, and the software delivery lifecycle from idea to production.

We employ agile and domain-driven design (DDD) principles in a set of lightweight techniques we call the Swift method, to iteratively modernize complex systems. We work on small parts of the application (“thin slices” of short event flows along with the components required to produce those events). Slice by slice, the team rewrites code creating a new software architecture that uses microservices, APIs, message queues, etc. that will run on cloud, while interoperating with remaining modules where they reside. We capture lessons, patterns, and techniques in a “cookbook” of application modernization “recipes” to help accelerate future efforts. This approach allows you to understand, plan, and get started on complex modernization through hands-on work in just days, not weeks or months.

REFACTOR APPLICATIONS

- Determine Objectives and Key Results
- Map system and prioritize slices of functionalities
- Draft desired notional architecture
- Populate modernization backlog
- Produce code, and document repeatable patterns

Realize – Rehost/Migrate Apps

Leveraging best-in-class tools and a proven methodology, we efficiently and securely rehost (migrate) applications from the current environment to the target cloud environment in four steps.

1. A migration strategy is created based on business goals, priorities, and constraints. A detailed migration plan with specific execution tasks is developed.

2. Using a combination of stakeholder interviews and automated tools, a discovery and analysis of the environments is performed. A map of application dependencies is built for each individual application in scope and any sequence, bandwidth, or security conflicts are resolved.

3. A detailed migration plan is created mapping the source to the target infrastructure. We create a testing schedule and contingency plans, including a viable rollback strategy to mitigate risk. We determine available bandwidth, and bundle and schedule the migrations in waves. A migration runbook is created.

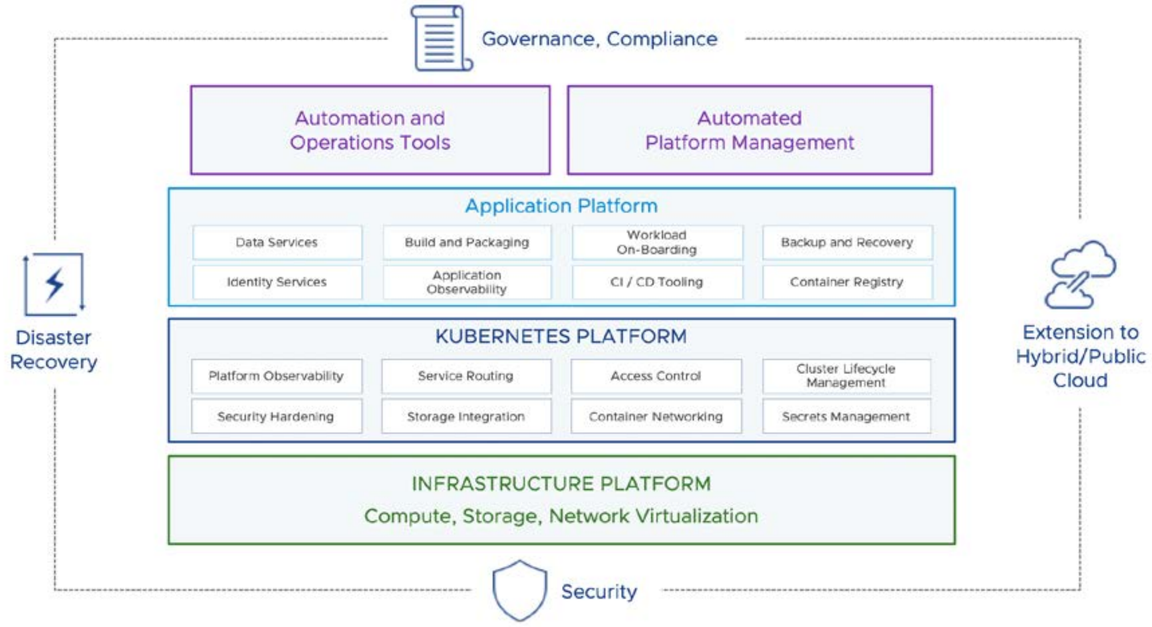
4. Finally, we execute the migration. In large migrations, multiple waves may be executed in parallel. We monitor and report migration progress, support user acceptance testing, and report and escalate any contingencies. After the execution has completed, final runbooks are produced, a migration executive summary is created, and lessons learned are documented.

Realize – Implement Modern Infrastructure

Our VMware experts can quickly implement the modern infrastructure required for your application and cloud environment. For your cloud platform, we can help you:

CLOUD PLATFORM

- Design and deploy a complete software-defined environment including virtualization of compute, storage, and network resources
- Collaboratively design, install, configure, and integrate the components needed for a developer-centric, production-ready Kubernetes-based platform
- Integrate and configure automation and orchestration tools into your environment
- Implement API-driven infrastructure management capabilities including automated hardware deployment, automated capacity and performance scaling, automated remediation, and automated cloud configuration
- Design and implement modern data architectures for increased reliability and performance for Kubernetes, VM, or cloud-based data services
- Integrate with public clouds such as AWS and Microsoft Azure to support
    - Footprint expansion/on-demand capacity
    - Dev/test environments
    - Modernized and next-generation apps



Realize – Implement Modern Infrastructure

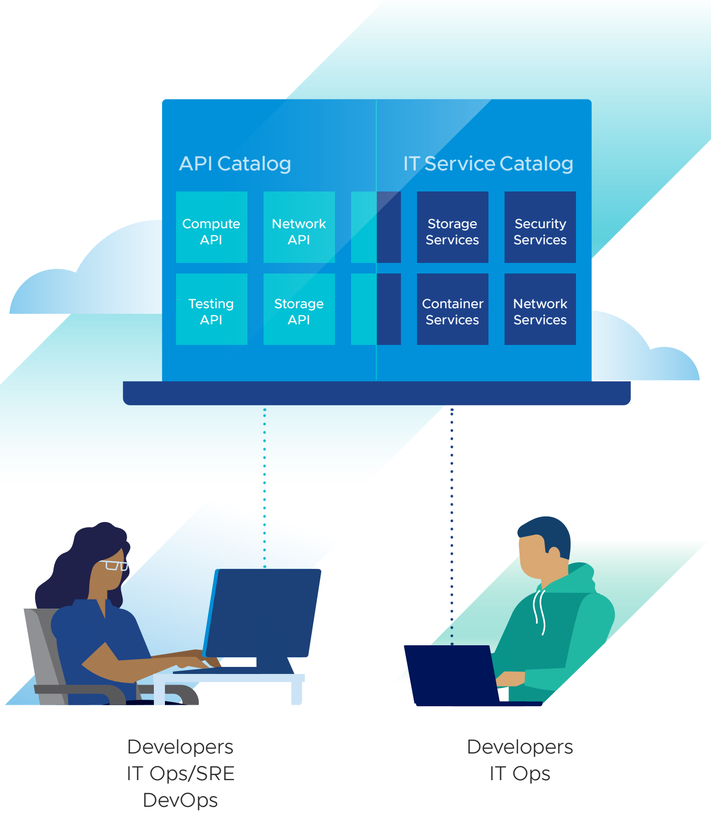
We can also help you achieve your desired outcomes by implementing network and security solutions:

NETWORK

- Design and deploy a solution according to your business and technical requirements including the architecture, topology, and policies
- Design and implement software-defined networks and WANs, migrate legacy network services, and simplify operations and deployments
- Design and deploy virtual load balancers to implement high-availability services that will automatically distribute your network traffic load among multiple servers and multiple clouds

SECURITY

- Design and deploy next generation anti-virus, end point detection and response solutions, and data center security
- Establish governance strategies to keep IT aligned with business objectives, and compliance strategies to stay aligned with regulatory requirements
- Recommend and implement security policies, firewall rules, and develop and implement security groups and security profiles to protect your apps' virtual machines
- Design and implement network segmentation and/or application security via micro-segmentation for highly sensitive workloads



Optimize – Automate IT Service Delivery

To realize the full value of modernized apps and infrastructure, IT capabilities must be simultaneously modernized.

Our experts will help you build any new IT competencies required as part of the modernization activities. We will define IaaS, PaaS, CaaS, and XaaS services that are specific to your technical and business needs. This includes compute services, storage services, networking services, DRaaS, DBaaS, and services and technology from the VMware Tanzu portfolio, including Kubernetes services.

Service templates will be created and integrated into a self-service portal. We will provide access to services through APIs, enabling automated management and provisioning of services such as infrastructure as code and DevSecOps capabilities.

We will develop service request forms and build approval routing and policy-based workflows based on your definitions. Service delivery tasks are streamlined for efficient automation; then we integrate, orchestrate, and automate fulfillment activities.

Optimize – Implement IT Operations and Management

To help you proactively manage your infrastructure, our experts define and implement metrics and monitoring capabilities, and implement dashboards providing a clear view of how your environment is performing. We will implement standard-based policies against your virtual infrastructure so that you can detect configuration drift, remediate policy violations, and enforce compliance.

We define event management processes to discover and investigate issues before they lead to service outages. Capacity and performance management enable you to measure and analyze resource usage and determine production capacity as demand changes.

Showback/chargeback processes can be created that provide you with detailed reporting on costs and demand based on actual service usage, giving you clear visibility into how IT services are being consumed and what they are costing the business.

We implement processes for actively managing service levels along with along with automating app and infrastructure configuration compliance. For each process we define the process steps, identify integration points and dependencies with other processes, and assign roles and responsibilities to each process step.

With a new operating model in place, you can improve performance, avoid disruption, and proactively manage your cloud infrastructure.

Optimize – Automate Developer Processes

As we modernize your apps and app platform, we help you automate as much as possible. We help you create a dedicated platform team and adopt modern practices to treat your platform as an internal product for development teams. You will learn a developer-centered, iterative approach to developing and managing an app platform that encourages developer adoption and consumption. We help you build pipelines and adopt best practices to automate and streamline platform deployments, patching, upgrades, and operations.

We implement test-driven development, continuous integration, and continuous deployment to reduce manual process time and software delivery lifecycle cost. We help you build new competencies such as DevSecOps so you can create software faster, deploy code to production and deliver new features more frequently, and with security measures integrated throughout its lifecycle.

The modernization process is continual. We help you prioritize, quickly build competencies, and enable you to continuously innovate and evolve to meet ever-changing business needs. We work alongside you so that you build skills through hands-on work, experience rapid feedback, measure results, and create a cookbook of proven patterns as you go.

Learning, Technical Account Management, and Customer Success

With your App and Cloud Modernization solution in operation, VMware Learning, Technical Account Management, and Customer Success can help you continually get value from the investment you've made.

Learning and Certification

Our Learning solutions are flexible, effective, and prescriptive to provide your team with the knowledge to quickly build the skills and experience for your App and Cloud Modernization solution. Certification provides individuals with the opportunity to validate their skills and become part of the community of VMware experts, respected in the field and the industry.

Our Knowledge Skills Assessment will identify gaps in technology skills within your IT organization and provide:

- The current state of your team's IT skills
- Skills analyses per team member, segmented by role
- Recommended VMware training courses, certifications, and learning paths

Technical Account Management

VMware Technical Account Management can help your organization take full advantage of your App and Cloud Modernization solution. Your VMware cloud and/or applications expert will be embedded within your team and focused on maximizing your VMware investment. You will have greater access to VMware resources and deeper visibility into VMware solutions and product roadmaps, giving you a more strategic view so you can plan for and adopt new technology faster. Your Technical Account Manager will:

- Perform assessments to quantify team maturity and create capability baselines; develop a roadmap to achieve desired capability targets; facilitate workshops to increase staff's knowledge and abilities
- Provide solution guidance and best practices reviews to identify performance optimization opportunities such as potential system degradation and bottlenecks
- Perform system health checks to provide recommendations for improving efficiency, resiliency, security, and sustainability
- Periodically measure and compare your environment against industry benchmarks and known best practices in operational excellence and technical maturity

ROADMAP AND ASSESSMENTS

SOLUTION GUIDANCE

OPERATIONS OPTIMIZATION

INDUSTRY INSIGHTS AND BENCHMARKING

Customer Success

Our Customer Success team will work with you to track and measure your outcomes. We will proactively monitor your progress and offer guidance, resources, and adjustments as needed.

SUCCESS PLANNING

We will jointly create a personal Success Plan based on your desired outcomes. A Health Scorecard will provide a dynamic view of how you are achieving critical metrics - business value, performance value, and experience value, to help us ensure you are realizing value, and that our products are performing as you expect.

ADOPTION GUIDANCE AND WORKSHOPS

We will recommend Success Pathways that solve common challenges based on the outcomes you are pursuing. Success Pathways include on-demand adoption guidance webinars that help you implement new features or build a basic capability. Workshops offer personalized assistance from our expert engineers who will guide you through a new feature, capability, or configuration in your system.

DIGITAL LEARNING

We help your team gain new skills with 24x7 access to intermediate-level courses, demos, simulated labs, and exam preparation videos for an unlimited number of users.

DEDICATED AND PROACTIVE SUPPORT

With a combination of technology and expert engineers, we help you speed issue resolution, minimize downtime, coordinate root cause analysis, and prevent recurring incidents. This includes AI/ML enabled capabilities via VMware Skyline with real-time monitoring; a personalized, tailored digital experience through VMware Customer Connect™; and comprehensive cross-product, 24x7 global access with unlimited requests.

Closing

VMware Customer Experience and Success and VMware Tanzu Labs teams have a long history of developing app and cloud solutions and delivering results for thousands of industry leaders around the world.

Contact us to do the same for you.

Join us online: