Infrastructure Modernization: Optimize infrastructure and Operations

Key Outcomes

- Faster issue detection and resolution with consolidated diagnostics, logs, alerts, topology, and network insights
- Continuous performance monitoring to optimize VMware Cloud Foundation compute, storage, and network infrastructure resources
- Enhanced resource utilization with full-stack visibility, cost, and capacity management, and multi-site operations

IT organizations are increasingly dealing with complex applications and processes that span multiple data centers, creating a need to efficiently manage, operate, and optimize private cloud resources to enhance application performance. In recent years, more applications have started leveraging compute, storage, and networking capabilities in the public cloud. However, for certain modern workloads—such as Generative AI—there is a growing trend to repatriate some of these applications back to on-premises infrastructure due to concerns around cost and performance requirements. As a result, many organizations are opting to run their business applications in private cloud environments.

IT teams face many challenging questions:

- How do we balance optimal workload performance against the cost of the underlying infrastructure?
- Are we applying consistent policies across applications and infrastructure?
- Can we get a global view of cost and performance across data centers and clouds?
- Can we have a consistent operating model for VMs and containerized applications and save costs?

Controlling costs, ensuring performance, and managing policies across diverse and distributed environments are key priorities for IT teams. In addition, enterprises are dealing with a mixed environment that has been built over time and are facing a growing number of IT silos. Enterprises require solutions that simplify these management challenges and deliver the deep visibility, analytics, and operations functionality their teams need to manage their complex environments and software portfolios containing modern and traditional applications.

"With VCF...we can now show our application analysts exactly how a resource is being used and how much it costs. From a cost and resource perspective, we can be more certain in planning new applications."

Michael Miller
Technical Architect,
Mary Washington Healthcare

Source: Mary Washington case study

The solution : VMware Cloud Foundation

VMware Cloud Foundation is a comprehensive private-cloud platform that delivers virtual infrastructure with integrated, enterprise-class compute, networking, storage, management, and security. VMware Cloud Foundation includes fully native support for Kubernetes, virtual machines, and AI.

VMware Cloud Foundation helps organizations manage and operate their private cloud infrastructure by deploying and maintaining its fleet-level components, providing unified visibility and enhanced performance across the workload and infrastructure stack.

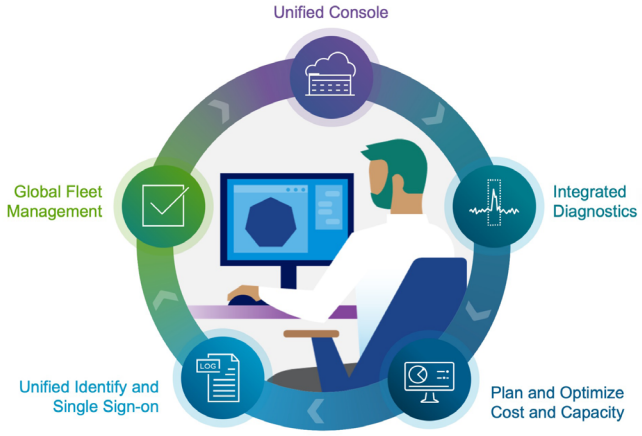


Figure 1 : VMware Cloud Foundation at-a-glance

VMware Cloud Foundation offers capabilities for various personas and roles who need to view applications and infrastructure environments when operating, troubleshooting, planning, and provisioning resources using integrated workflows to accelerate business agility and optimize cost, and performance. Fleet and operations management in VCF is simple and seamless with user-friendly navigation and a single pane of glass experience.

Customers who are are looking for infrastructure modernization to optimize infrastructure and operations will look at:

- **Fleet Management** enables operational consistency and efficient resource management of the VCF infrastructure at scale.
- **Operations Management** centers on monitoring and optimization of performance, cost and capacity as well as faster troubleshooting.

Infrastructure issues don't just go away, but the difference with VMware Cloud Foundation…is getting notified ahead of time instead of being woken up at night and having to worry about those fires without any predictability."

Director of Systems Engineering, Financial Services

Source: VCF Forrester TEI

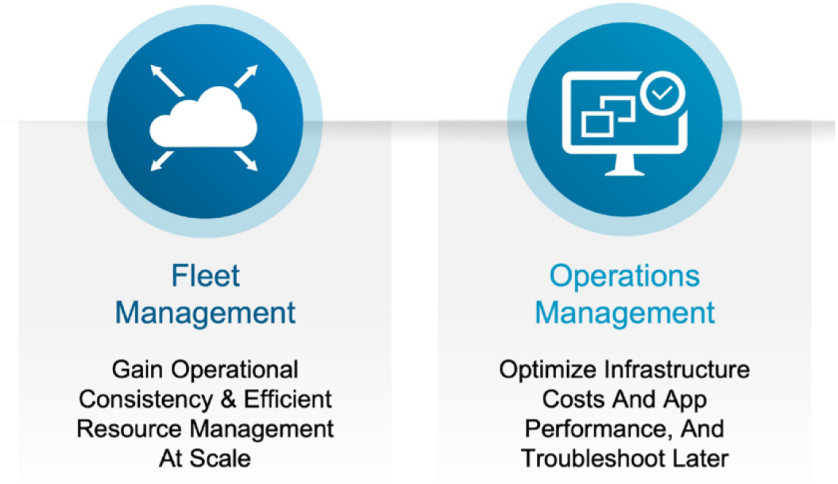
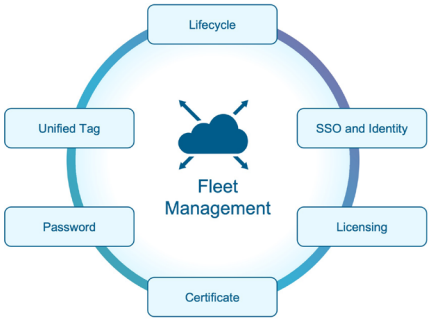


Figure 2: Fleet Management and Operations Management

Fleet Management



Key Outcomes

Operational Efficiency:
Ease of monitoring, better control and flexibility over processes reduces administrative overhead and improves infrastructure management at scale

Simplified Management:
Unified view for VCF across compute, storage, and network enables Day 0-2 operations and management to be efficient and consistent

Consistent Security:
Consistent policies, unified identity management, and easier patching reduces security loopholes, improving the security posture of the platform

The Fleet Management pillar includes six key capabilities: Lifecycle Management, SSO and Identity Management, Licensing, Certificate Management, Password Management, and Tag Management.

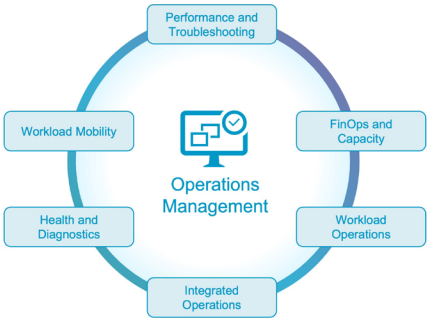
Lifecycle Management makes upgrading and patching VCF components easy and consistent. The streamlined process reduces the number of host reboots and supports automated upgrades across multiple clusters. VCF allows for **Single Sign-On** across VCF and fleet of vCenters, simplifying the login configuration processes, reducing operational overhead, and enhancing user management. Various identity solutions such as Active Directory Federation Services, Azure AD, OKTA, Ping, Open Authorization 2.0 are supported. **Licensing** for VCF is simplified and unified using a secure licensing file and centralized consumption visibility. **Certificate Management** enables accurate maintenance of certificate inventory and details and reduces administrative overheads with automated certificate discovery. **Password Management** provides a centralized dashboard that offers a comprehensive view of password status and management capabilities for updates, and expiration alerts. With **Tag Management**, admins can create and manage categories and tags from a single pane of glass, enabling consistent policies across vSphere.

Benefits in numbers

- 20% reduction in issue resolution time
- 77% increase in operational efficiency

Source: VCF Forrester TEI

Operations Management



Key Outcomes

Faster Troubleshooting:
Troubleshoot VCF deployments with OOTB diagnostics, significantly minimizing downtime and issue resolution

Higher Productivity:
Improved VCF admin efficiency and proactive management fueled by integrated metrics, network flows, and simplified log collection

Unified Visibility:
Single-pane-of-glass for multi-site VCF deployments with real-time monitoring and insights across the stack

Cost Savings:
Greater optimization driven by deep insights into cost and capacity utilization and predictive modeling

The Operations Management pillar includes six key capabilities: Performance and Troubleshooting, FinOps and Capacity, Workload Operations, Integrated Operations, Health and Diagnostics, and Workload Mobility.

Performance Monitoring ensures applications have continuous access to resources and AI-Driven **Troubleshooting and Remediation** enables faster time to resolution of issues while keeping costs down. With **FinOps**, VCF allows customers to analyze their infrastructure costs as well as set up controls over their costs, including defining chargebacks. **Capacity Planning** helps organizations evaluate their capacity requirements based on their historical resource utilization and real-time predictive projections to plan ahead.

Workload Operations ensures that critical applications are running properly by monitoring its performance, availability and end-user experience. For container-based applications, VCF provides native integration with vSphere Supervisor which enables automatic monitoring of Supervisor instances and vSphere Kubernetes Service (VKS) clusters at a granular level, shortening troubleshooting time.

Integrated Operations provides a complete network view with real-time health monitoring, traffic analysis, and application insights. It also streamlines storage management by consolidating key insights into a unified view, enabling proactive optimization, efficient resource allocation, and minimized downtime. Data and Site Resiliency Monitoring in VCF provides centralized visibility into data protection metrics across private clouds. Log Operations introduces a standardized log format enabling different parts of the infrastructure to be troubleshooted together across different components.

Health and Diagnostics offers comprehensive visibility into VCF component health, root cause analysis, and proactive monitoring. It also shows a view of risks based on CVE (common vulnerabilities and exposures). **Workload Mobility** includes the migration planning function, a more streamlined and informed approach to migrating workloads into/between/within VCF.

Resources

VCF Infrastructure Modernization Web page

VCF Hands-on Lab

VCF Forrester TEI Study

VCF Technical Documentation

Why VMware Cloud Foundation?

Today's cloud environments are too complex to manage without modern tools. IT teams need to maximize their productivity and efficiency every day.

VCF provides a unified interface to operate and optimize the private cloud, significantly enhancing the cloud admin experience and eliminating operational silos. It is purpose-built for operationalizing VCF at scale while reducing complexity and operational overhead. From infrastructure provisioning to management, everything is centralized in a single view, enabling faster deployments, streamlined upgrades, and more predictable operations. VCF empowers IT teams to focus on delivering value, rather than managing infrastructure complexity.

Get started today at https://www.vmware.com/products/cloud-infrastructure/vmware-cloud-foundation

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