Top 5 Challenges of Application Modernization

And how to overcome them with VMware Cloud Foundation

Get Started



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Introduction: The need for application modernization

In today's increasingly competitive and fast-paced digital landscape, traditional development environments can saddle your organization with rigid infrastructure, time-consuming setup, scaling challenges, and other limitations. These limitations, in turn, can hinder your application team's ability to build, deploy and deliver applications quickly. Modern application teams require an environment that gives them faster access to on-demand resources, automated workflows, and scalable infrastructure so they can focus more on writing code and solving problems rather than managing infrastructure.

This is exactly what VMware Cloud Foundation™ (VCF) delivers. VCF abstracts away the complexity of underlying infrastructure, giving your platform teams self-service access to infrastructure resources for on-demand provisioning and management without IT intervention. With a unified platform for both traditional and modern workloads, VCF enables your development teams to supercharge productivity and support advanced workloads utilizing cloud native and AI technologies.

Let's take a look at how VCF helps overcome the top five challenges of application modernization.



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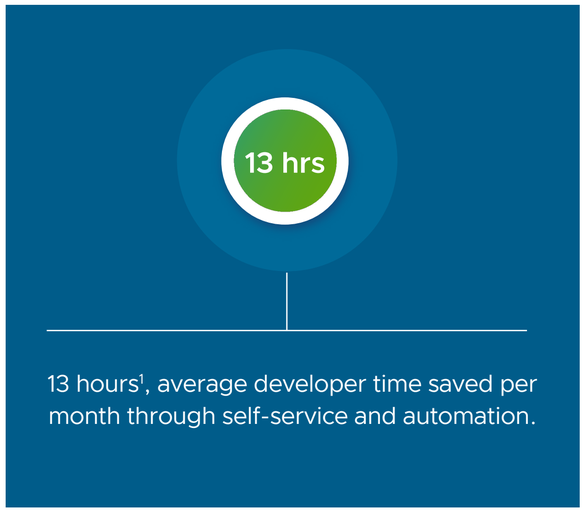
Lack of automation and orchestration

Manual processes and limited orchestration slow down platform teams, creating bottlenecks in resource provisioning, deployment, and scaling.

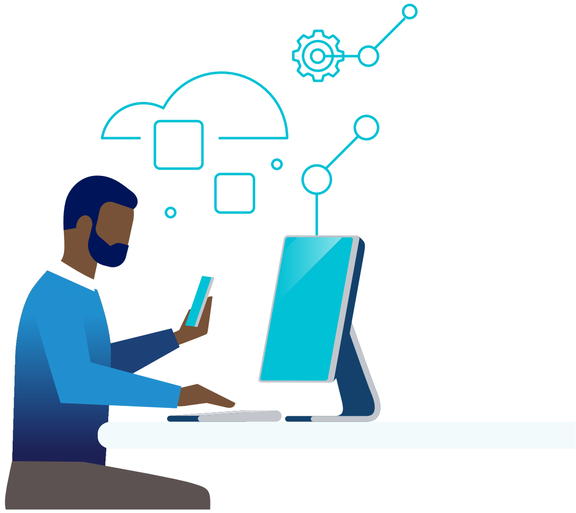
Without self-service automation, developers are forced to provision resources through manual IT ticketing systems, stalling development cycles and driving up operational overhead.

The solution: VMware Cloud Foundation

VCF enables automation by abstracting away the complexity of underlying infrastructure to give platform teams self-service access to infrastructure resources for on-demand provisioning and management without IT intervention. VCF Automation, one of the core components of VCF, delivers a self-service infrastructure resources consumption experience to the consumers of the private cloud and provides infrastructure management and governance capabilities to administrators.



13 hours[1], average developer time saved per month through self-service and automation.



"Our operations became very efficient especially with regard to automating patching. Automation has enabled us to be 100% compliant with our security posture requirements."

Mahamed "Allim" Allimulla
Information Service Senior Manager, ChristianaCare

1.The Projected Total Economic Impact™ Of Broadcom VMware Cloud Foundation 9, August 2026.

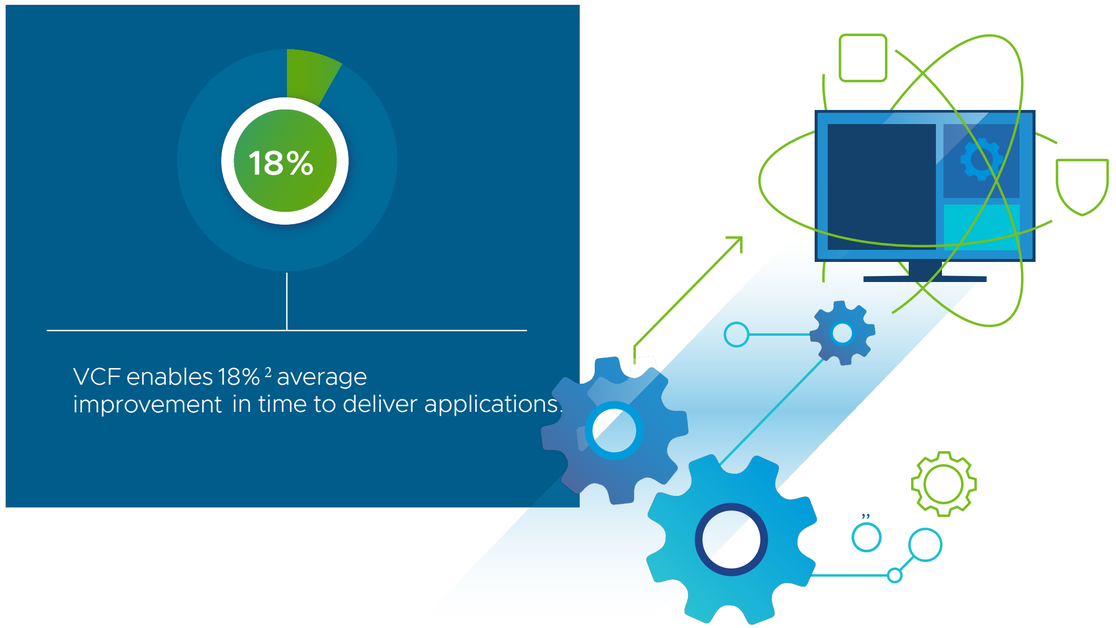
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Inadequate support and skills for development of modern apps

Many legacy infrastructures don't fully support modern app development technologies such as Kubernetes, containers, data services, microservices, or AI/ML services. Because of this, platform teams are often forced to work with older technologies. In addition, organizations face a skill gap and a steep learning curve when it comes to developing modern apps.

The solution: VMware Cloud Foundation

With the inclusion of VMware vSphere Kubernetes Service (VKS), VCF delivers integrated Kubernetes runtime to deploy and run containerized workloads. VCF Automation provides a unified interface spanning UI, CLI, and Kubernetes APIs, so application team can provision VMs, VKS clusters, and containers on demand.



"Because the platform is stable and the technology is consistent, the team can focus on the work they're supposed to do, instead of chasing technology."

Terry Fung
Head of Cloud and Infrastructure, Chow Sang Sang

2. The Projected Total Economic Impact™ Of Broadcom VMware Cloud Foundation 9, August 2026.

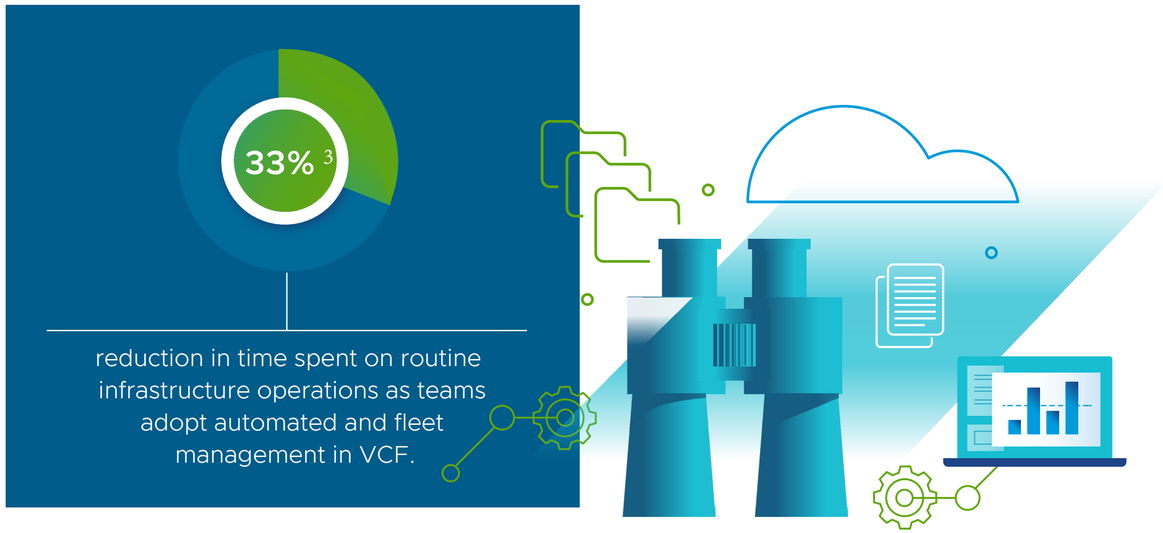
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Limited infrastructure visibility and monitoring

Platform engineers often lack real-time monitoring and visibility into resource utilization and application performance. Without proper insights into infrastructure performance and health, troubleshooting issues and optimizing workloads can become time-consuming, leading to inefficiencies in application development.

The solution: VMware Cloud Foundation

VCF Operations enables customers to visualize, monitor and troubleshoot Kubernetes clusters in real-time and their components, providing end-to-end visibility. VCF Operations helps customers monitor GPU metrics like compute, memory, temperature and power consumption at a cluster and host level for ESXi hosts having GPUs. With GPU dashboards and alerts, customers can assess the performance impact on GPU hardware and on the system as a whole. In addition, VCF monitors mission-critical applications for performance, availability and end-user experience.



"VMware Cloud Foundation provided the highly resilient cloud platform we needed, allowing just nine engineers to manage thousands of virtual machines."

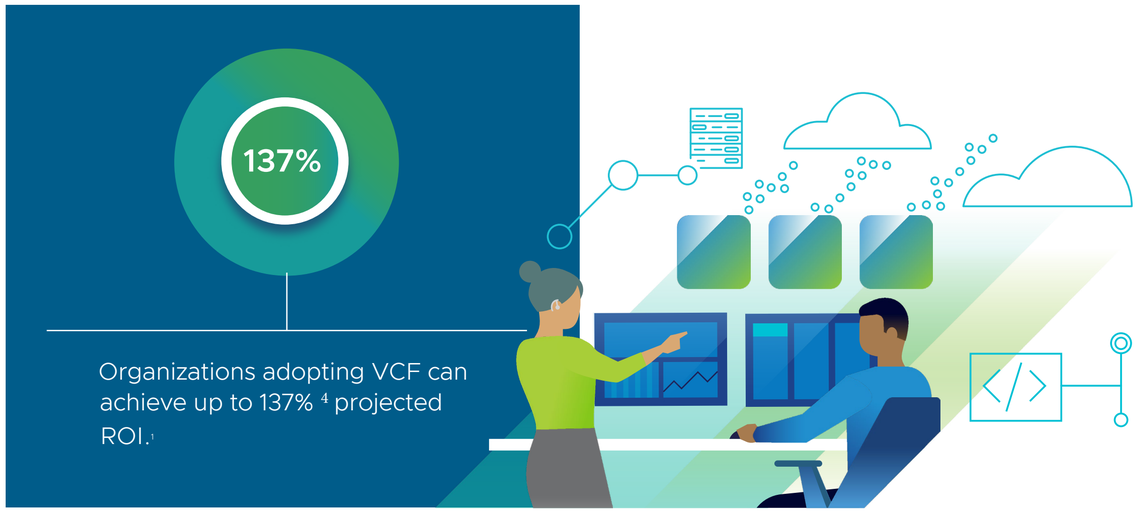
Teppei Sambo,
Division Manager, Data Center Engineering Team, TKC Corporation

3. The Projected Total Economic Impact™ Of Broadcom VMware Cloud Foundation 9, August 2026.

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Infrastructure silos and interoperability issues

Disparate infrastructure components lead to management discrepancies and operational inefficiencies. Platform teams often face interoperability challenges when connecting modern cloud-native applications with older systems, which can result in compatibility issues, delays, and technical debt.



The solution: VMware Cloud Foundation

VCF accelerates innovation for all applications by removing the friction between developers and the infrastructure they need. Through a unified interface spanning UI, CLI, and Kubernetes APIs, application teams provision VMs, VKS clusters, and containers on demand without waiting on IT tickets.

> “We have a lot of software that we’re using currently that is starting to come to us in a containerized format. We were looking for ways to integrate that into a private cloud stack. VCF is really where we are planning to do all of that work in the future.”
>
> **Jeremy Wright,**
> Director of IT infrastructure, Grinnell Mutual

4. Forrester New Tech Total Economic Impact™ Study on VCF 9, August 2026.

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Security and privacy issues due to outdated infrastructure

Providing modern infrastructure for DevOps to build cutting-edge applications using AI/ML services brings unique security and privacy challenges, especially in protecting sensitive data and ensuring regulatory compliance.

The solution: VMware Cloud Foundation

VCF minimizes your attack surface out of the box with a hardened platform delivering end-to-end protection, detection, and recovery with built-in security, compliance, resilience, threat prevention, and fast disaster recovery. VCF also embeds privacy and security directly into its platform architecture by governing the entire AI lifecycle across model adoption, agent interaction, and environmental isolation.



"With VMware Cloud Foundation, we've built a secure, private cloud environment that allows us to quickly and efficiently implement AI technologies—whether it's for knowledge-based chatbots assisting staff or delivering financial answers directly to our members across multiple devices. AI in banking helps us automate everyday transactions, streamline loan processing, and proactively identify member needs, ensuring that our services are both intuitive and secure."

Mark Fournier
CIO, U.S. Senate Federal Credit Union

5. The Total Economic Impact of vDefend by Forrester March 2025

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Accelerate application modernization journey for your organization

Empower your development teams to build, deploy and deliver applications faster than ever before with VMware Cloud Foundation.

Check out these resources to learn more:

VCF Website Datasheet Blogs

VCF Total Cost of Ownership

White paper Infographic

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