VCF Automation

Key benefits

Deliver a self-service cloud that enables:

Accelerated innovation for all apps
Reduce the time required to market new products and services by faster provisioning, deploying, and configuring resources.

Scalable governance and compliance
Jump start and scale a multi-tenant cloud while maintaining control with governance and policies.

Reduction of CapEx and OpEx
Reduce hardware costs and optimize infrastructure utilization to enhance efficiency and productivity while improving reliability and minimizing errors.

"With VCF Automation we're providing a public cloud-like user experience while maintaining security, compliance, and control. We are a small team, but VMware enables us to offer anything as a service (XaaS)."

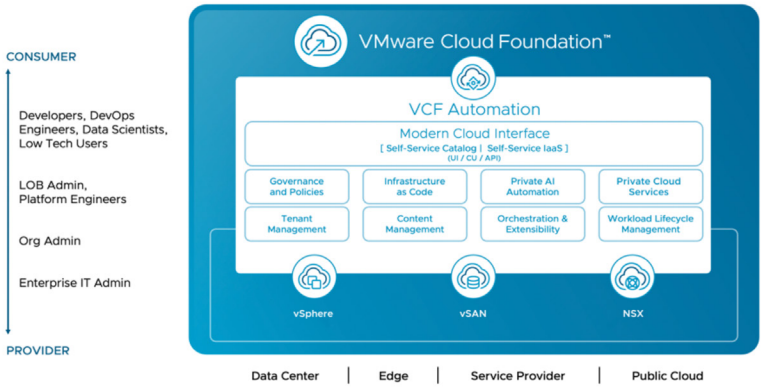
Philippe Morel
Director of IT Operations and Infrastructure
EPFL

"We used to take up to three or four days to [deliver] services, but now customers can provision them directly from the VMware Cloud Foundation Automation catalog in about a half hour. That's it. We have gone from days to minutes."

Cloud and System Administrator
Oil and Gas Company

What is VMware Cloud Foundation Automation?

VMware Cloud Foundation Automation (VCF Automation) is a core component of VMware Cloud Foundation that enables IT to deliver a self-service private cloud for AI, Kubernetes, and VM-based applications. The solution simplifies the process of provisioning and scaling a multi-tenant private cloud with out-of-thebox Infrastructure as a Service (IaaS) offerings, accelerating the time to market for applications while maintaining control through policy-based governance. This solution helps VI Admins evolve into Cloud Admins who can offer self-service consumption of infrastructure resources "as a Service" to application teams. It also helps IT move away from time-consuming, ticket-driven manual provisioning processes involving multiple teams, reducing errors and the need for revisions in favor of a more automated self-service environment.



Deliver a self-service private cloud experience

Introduce Modern Cloud Interface

VCF Automation offers a user-friendly interface that allows application teams to utilize the Supervisor and associated services from the VCF Private Cloud Services. This interface simplifies the self-service consumption of infrastructure resources across various environments. It provides out-of-the-box (OOTB) IaaS services through a common endpoint, accessible via multiple interfaces, including UI, CLI, and the Kubernetes IaaS API. With this interface, users can manage VM services, deploy Kubernetes clusters, create network configurations, and handle persistent volumes, all while ensuring compliance and governance within their private cloud environment. The Modern Cloud Interface aims to boost developer productivity by enabling

VCF use cases enabled by VCF Automation

Application Modernization

- Enable self-service infrastructure and cloud services for app teams: Provide application teams self-service access and automation to infrastructure, cloudnative, and data services for rapid innovation, including setting up multitenancy and governance.
- Build, run, manage Kubernetes and other modern apps: Deliver a single platform for running containers/K8s and VMs with built-in cloud-native services/ packages and multi-cluster management.
- Build, run and manage Private AI apps: Deliver AI-ready infrastructure and AI app operations for rapid path to production with governance.

them to focus on application development instead of managing the underlying infrastructure.

Deploy OOTB IaaS Services

VCF Automation provides flexible consumption models, including a provideroriented curated self-service catalog for production environments and a consumer-oriented self-service IaaS model with a K8s UI/CLI/API. The selfservice IaaS approach allows users to access services like VMs, Kubernetes, and networking as they would in a public cloud, boosting productivity and efficiency. Application teams, including developers and DevOps engineers, can quickly obtain the infrastructure they need without navigating a lengthy ticketing process. This model not only accelerates time to market by facilitating faster innovation but also offers improved resource allocation, visibility, and cost management through a unified interface

Establish governance and policies

VCF Automation improves governance for users and resources by enabling Enterprise IT Administrators to create and assign Projects and vSphere Namespaces tailored for different organizations. This capability allows for more efficient management of resources and security controls, as IT Administrators can set resource limits and policies while delegating network management through Virtual Private Clouds (VPCs) for application teams. Additionally, the introduction of Policy as Code enables IT Administrators to enforce instance-centric policies for Infrastructure as a Service (IaaS) resources from a central location, which promotes compliance and reduces the risk of human error. Get a unified view of distributed VKS cluster fleets across multiple projects. Ensure consistent security and configuration settings, and protect your data by backing up entire clusters or specific namespaces for recovery during failures or outages. Overall, this streamlined approach fosters accountability, enhances resource utilization, and strengthens the organization's security posture.

Apply tenant management

Enterprise IT admins can utilize multi-tenancy to create one or multiple organizations based on their needs, allowing for the effective allocation of resources and management of users specific to each group. This capability provides isolated environments with dedicated network setups and default transit gateways. IT admins can monitor resource usage, control permissions, and offer managed services like encryption while ensuring security through comprehensive network isolation. To simplify infrastructure provisioning, a new Quick Setup wizard helps organizations quickly establish a self-service private cloud, transitioning VI Admins into Cloud Admins. For those who prefer guidance, workflows are available to assist with initial setups, enhancing operational efficiency and reducing the learning curve for VCF deployment.

Implement Infrastructure as Code

VCF Automation blueprints are designed to define machines, applications, and services that operate on VCF infrastructure resources. By utilizing input variables that determine placement logic, users can create standardized,

reusable templates. Platform Engineers can also incorporate ecosystem constructs, such as networking and security objects, Kubernetes clusters and namespaces, and custom resources. VCF Automation enables a unique lowcode approach, providing IT organizations with a streamlined and efficient method to implement Infrastructure as Code (IaC). Users can easily create blueprints using a visual interface or define them in a low-code YAML format.

Streamline Content Management

VCF Automation simplifies content management by enabling seamless discovery of content libraries through automatic connections to vCenters, allowing allocation of VM images to tenants. It synchronizes libraries in the background, enables the creation and management of new content libraries, and facilitates easy sharing of resources like blueprints and workflows. With one-click publishing to a self-service catalog and the ability to build and trigger orchestrator workflows, VCF Automation enhances productivity and collaboration while reducing complexity and minimizing errors in content management.

Leverage Private AI Automation

VCF Automation offers private AI automation services capabilities, unlocked by VMware Private AI Foundation with NVIDIA. It features a Catalog Setup Wizard that streamlines the setup of private AI services and enables selfservice provisioning of GPU-capable machines, including support for Machine Learning (ML) workloads and VKS GPU-enabled Kubernetes clusters. Organization Admins can enforce governance and control over costly and high-demand resources, such as GPUs, through consumption policies, templates, and defined user roles. This approach empowers project members to utilize the necessary infrastructure services for their AI/ML projects more efficiently. At the same time, it ensures optimal and secure management of resources. Additionally, the supervisor VM and VKS services within a supervisor namespace expedite the deployment of AI infrastructure through seamless provisioning via Self-Service IaaS.

Facilitate Orchestration and Extensibility

VCF Automation provides orchestration and extensibility capabilities, empowering organizations to deploy robust custom frameworks tailored to their specific needs. This includes the ability to create dynamic VCF Operations orchestrator workflows and leverage event broker subscriptions for seamless integration and automation. Moreover, users can connect and collaborate with leading third-party infrastructure automation tools, such as Terraform and Ansible, further enriching their automation ecosystem and enhancing operational efficiency. This comprehensive approach allows organizations to maximize their infrastructure management potential and streamline processes effectively.

Manage Workload Lifecycle

Workload Lifecycle Management, enhanced by VCF Automation, is essential for optimizing deployment processes and ensuring efficient resource utilization. By employing advanced workload placement techniques, organizations can strategically position their deployment workloads according

How to purchase

VCF Automation is available onlyas a component of VMware CloudFoundation, VMware's private cloud solution that can be deployed on-premises in your data center or on any supported public cloud.

For more information or to purchase VMware products

Call 877-4-VMWARE (outside North America, +1-650-427-5000), visit vmware.com/products/cloudinfrastructure/cloud-foundationautomation, or search online for an authorized reseller. For detailed product specifications and system requirements, refer to the VCF Automation documentation.

to application intent models and specific constraints. This targeted approach not only streamlines the placement process but also allows for further refinement through VCF Operations recommendations, ensuring that workloads are aligned with operational best practices. The integration of VCF Automation facilitates seamless automation of workload right-sizing and reclamation, allowing for dynamic adjustments to resource allocation in real-time. This not only minimizes waste but also enhances system efficiency, ultimately leading to improved performance and reduced operational costs

Become your own cloud provider with VCF 9

Deliver public cloud-like IaaS services straight out of the box via a Modern Cloud Interface with your private cloud. Empower your application teams to access the infrastructure they need whenever, wherever, and however they need it, boosting productivity and user satisfaction.

Isolate private clouds for each of your organizations with new tenant management capabilities. Carve up resources, segment networks, and isolate infrastructure to help ensure security by preventing unauthorized access or communication between different groups of users or resources.

Govern with frictionless embedded guardrails across your platforms. Gain control without compromise by consistently enforcing IaaS resource policies through new policies as code. Reduce risk and simplify compliance through a single platform.

VCF Automation features

VMware Cloud Foundation Automation	VMware vSphere Standard	VMware vSphere Enterprise Plus	VMware vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Modern Cloud Interface					
Self-Service Catalog[1]	No	No	No	Yes	Yes
Self-Service IaaS[2]	No	No	No	Yes	Yes
Unified APIs (declarative K8s APIs[2] | REST APIs[1])	No	No	No	Yes	Yes

VMware Cloud Foundation Automation	VMware vSphere Standard	VMware vSphere Enterprise Plus	VMware vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
OOTB IaaS Services2					
Core Services: VM, VKS, Network, Volume, VM Image	No	No	No	Yes	Yes
Extensible Services (DSM, ArgoCD, Contour, Harbor, etc.)	No	No	No	Yes	Yes
Partner delivered services (Velero)	No	No	No	Yes	Yes
Governance & Policies					
Zones, Regions, Organization, Project, IAM (for Ent IT Admin)[1]	No	No	No	Yes	Yes
Namespace Classes, Namespaces, VPC (for Ent IT Admin)[2]	No	No	No	Yes	Yes
Namespaces & Private Cloud Services Management (for LOB Admin)[2]	No	No	No	Yes	Yes
Policies (approval, lease, day 2 action) (for Org Admin) [1]	No	No	No	Yes	Yes
IaaS Resource Policies w/Policy as Code (for Org Admin)[2]	No	No	No	Yes	Yes
Tenant Identity Management & RBAC (for Org Admin)[2]	No	No	No	Yes	Yes

VMware Cloud Foundation Automation	VMware vSphere Standard	VMware vSphere Enterprise Plus	VMware vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Custom Naming Policy (for Org Admin)[1]	No	No	No	Yes	Yes
Cost Visibility (w/ VCF Operations) (for Ent IT Admin & Org Admin)[1]	No	No	No	Yes	Yes
VKS Cluster Management (Centralized VKS Cluster Fleet Visibility, VKS Policy Management, Data Protection, Add-on Management) (for Platform Engineers)	No	No	No	Yes	Yes
Tenant Management[2]					
Tenant Resource Management - compute, storage, network (for Ent IT Admin)	No	No	No	Yes	Yes
Tenant Network Isolation w/ VCF Networking (for Ent IT Admin)	No	No	No	Yes	Yes
Tenant Operations (utilization, chargeback, alerts)	No	No	No	Yes	Yes
Tenant Branding (for Org Admin)	No	No	No	Yes	Yes
Quick / Manual Setup of Organizations (for Ent IT Admin)	No	No	No	Yes	Yes

VMware Cloud Foundation Automation	VMware vSphere Standard	VMware vSphere Enterprise Plus	VMware vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Provider and Consumer Dashboards	No	No	No	Yes	Yes
Certificate Management (for Ent IT Admin & Org Admin)	No	No	No	Yes	Yes
Content Management[2]					
Centralize Content Hub for blueprints, content libraries (VM Images), orchestrator workflows	No	No	No	Yes	Yes
Publish content to self-service catalog	No	No	No	Yes	Yes
Provider Tenant Admin to Tenant sharing: content library and catalog items	No	No	No	Yes	Yes
Content Library Creation	No	No	No	Yes	Yes
Infrastructure as Code					
Visual Canvas Template Designer w/ declarative YAML syntax[1]	No	No	No	Yes	Yes
Blueprints (YAML[1] | K8s manifest in YAML[2])	No	No	No	Yes	Yes
Git Integration (GitHub, GitLab, Bitbucket)[1]	No	No	No	Yes	Yes

VMware Cloud Foundation Automation	VMware vSphere Standard	VMware vSphere Enterprise Plus	VMware vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
VCF Automation TF Provider[1]	No	No	No	Yes	Yes
Automated deployment & configuration of OOTB IaaS Services[2]	No	No	No	Yes	Yes
Automated deployment & configuration of SDDC objects[3] (e.g., NSX n/w, Security Groups, Firewalls[4], Avi LB5)	No	No	No	Yes	Yes
Private AI Automation Services[2,6]					
Catalog Setup Wizard (Automated Private AI service setup)	No	No	No	Yes	Yes
GPU-capable DL VM provisioning	No	No	No	Yes	Yes
GPU-capable VKS Cluster provisioning	No	No	No	Yes	Yes
DSM Integration for RAG-based workloads	No	No	No	Yes	Yes

VMware Cloud Foundation Automation	VMware vSphere Standard	VMware vSphere Enterprise Plus	VMware vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Orchestration & Extensibility					
Workflow Orchestration (VCF Operations orchestrator)[1]	No	No	No	Yes	Yes
Event Subscription Service, Custom Resources/ Custom Day 2, XaaS[1]	No	No	No	Yes	Yes
Ecosystem & Partner Services[2]	No	No	No	Yes	Yes
Action-Based Extensibility (ABX) (FaaS)[3]	No	No	No	Yes	Yes
Integrations (Ansible[3], Puppet[3], Tanzu Config[3], ServiceNow ITSM[3], IPAM (Infoblox) / IPAM SDK[3], AD[3])	No	No	No	Yes	Yes
Workflow Orchestration (VCF Operations orchestrator)1	No	No	No	Yes	Yes

VMware Cloud Foundation Automation	VMware vSphere Standard	VMware vSphere Enterprise Plus	VMware vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Workload Lifecycle Management					
Workload discovery and onboarding[3]	No	No	No	Yes	Yes
Workload Operations for Providers & Consumers[2]	No	No	No	Yes	Yes
Day 2 Actions & Custom Actions[1]	No	No	No	Yes	Yes
Advanced Workload Placement (w/ VCF Operations)[3]	No	No	No	Yes	Yes
Resource right sizing and reclamation (w/ VCF Operations)[3]	No	No	No	Yes	Yes

1. Available in both Org for All Apps and VM Apps
2. Available in Org for All Apps
3. Available in Org for VM Apps
4. Requires Firewall add-on
5. Requires Avi LB add-on
6. Requires PAIF-N add-on