VCF Automation DataSheet

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.



Figure 1: VCF Automation overview.

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 Supervisor services. This interface simplifies the self-service consumption of infrastructure resources across various environments. It provides out-ofthe-box (OOTB) laaS services through a common endpoint, accessible via multiple interfaces, including UI, CLI, and the Kubernetes laaS 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 them to focus on application development instead of managing the underlying infrastructure.



VCF use cases enabled by VCF Automation

Modern Infrastructure

Implement automated infrastructure to deliver laaS: Automate infrastructure for laaS to allow users to deploy resources through a self-service model, simplifying the process while maintaining security and governance.

Build and operate private cloud infrastructure on-premises or at the edge: Modernize IT infrastructure by building a private cloud on-premises or at the edge, and leverage tenant management capabilities to provide tailored, isolated environments for each organization.

Unified Cloud Experience

Build, run and manage Kubernetes and other modern workloads: Build a modern infrastructure for managing containers and big data, with automation streamlining Kubernetes setup through IaC and VKS integrating with VCF to enable custom YAMLbased policy-as-code for enhanced governance and compliance.

Build, run and manage Private AI:

VMware Private AI Foundation with NVIDIA automates deployments and allows for quick configuration of GPUcapable machines and VKS clusters with an easy setup wizard while optimizing resource use via cost-effective policies and templates for AI/ML projects with self-service laaS provisioning.

Run and manage traditional workloads:

Automate infrastructure management and ensure maintenance, operations, and security of traditional workloads by leveraging IaC, blueprints, and a GitOps approach to achieve consistent configurations, reduce discrepancies, and maintain compliance with organizational and regulatory standards while preventing downtime or breaches.

Deploy OOTB laaS Services

VCF Automation provides flexible consumption models, including a provideroriented curated self-service catalog for production environments and a consumer-oriented self-service laaS model with a K8s UI/CLI/API. The selfservice laaS 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. 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.



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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 laaS.

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 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.



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How to purchase

VCF Automation is available only as a component of VMware Cloud Foundation, 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.

Become your own cloud provider with VCF 9

Deliver public cloud-like laaS 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 laaS ²	No	No	No	Yes	Yes	
Unified APIs (declarative K8s APIs ² REST APIs ¹)	No	No	No	Yes	Yes	
OOTB laaS Services ²						
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	



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VMware Cloud Foundation Automation	VMware vSphere Standard	VMware vSphere Enterprise Plus	VMware vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation	
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 & Supervisor 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	
laaS 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	
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	
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	
Provider and Consumer Dashboards	No	No	No	Yes	Yes	
Certificate Management (for Ent IT Admin & Org Admin)	No	No	No	Yes	Yes	



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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	
VCF Automation TF Provider ¹	No	No	No	Yes	Yes	
Automated deployment & configuration of OOTB laaS Services ²	No	No	No	Yes	Yes	
Automated deployment & configuration of SDDC objects ³ (e.g., NSX n/w, Security Groups, Firewalls ⁴ , Avi LB ⁵)	No	No	No	Yes	Yes	
Private AI Automation Services ^{2,6}						
Catalog Setup Wizard (Automated Private Al 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	



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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		
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



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