

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 application teams to build, run, and manage AI, Kubernetes, and VM-based applications. The solution simplifies the process of provisioning and scaling a secure multi-tenant private cloud with out-of-the-box (OOTB) Infrastructure as a Service (IaaS) offerings, accelerating the time to market for applications while maintaining control through policy-based governance.

VCF Automation helps VI Admins evolve into Cloud Admins who can offer self-service consumption of infrastructure resources “as a Service” to application teams. Serving as the engine for Internal Developer Platforms (IDPs), it provides a unified interface that balances developer autonomy with frictionless governance. VCF Automation 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 that optimizes resource utilization, reduces operational costs, and allows IT to focus on strategic innovation.

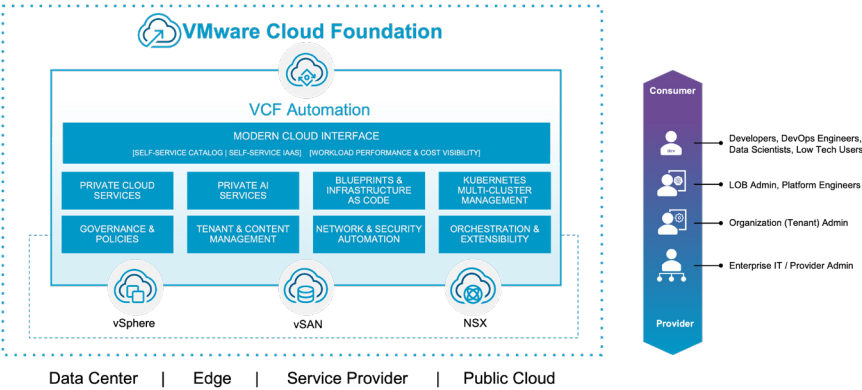


Figure 1: VCF Automation overview

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 multi-tenancy 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

Deliver a self-service private cloud experience

Access a modern cloud interface

VCF Automation offers a user-friendly interface that allows application teams to consume private cloud services enabled by the vSphere Supervisor. This interface simplifies the self-service consumption of infrastructure resources across various environments. It provides 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 containers as vSphere pods, deploy Kubernetes clusters, create network configurations, and handle persistent volumes, all while ensuring compliance and governance. The Modern Cloud Interface now provides direct workload performance and cost visibility, allowing Org and Project Admins to view aggregated costs and drill down into specific details for individual Projects and Namespaces, with upfront price estimates displayed during provisioning based on VCF Operations. This interface boosts developer productivity by enabling focus on application development while maintaining cost awareness and financial accountability instead of managing underlying infrastructure.

Deploy private cloud services

VCF Automation provides flexible consumption models, including a curated self-service catalog for production environments and a consumer-oriented self-service IaaS model with a K8s UI/CLI/API. The self-service IaaS approach allows provision and manage services like VMs, containers, Kubernetes, networking, and volumes, enabling application teams, including developers and DevOps engineers, to quickly obtain infrastructure without lengthy ticketing processes. An enhanced services framework leverages a regional Harbor instance to simplify deployment and lifecycle management of extensible services including Argo CD, Contour, Service Mesh, and Velero, plus 10 pre-bundled services such as Harbor, DSM, Secret Store, Encryption Management (BYOK), Multi-tenant DR (VLR), and VCD Migration Assistant. 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 the creation of Projects and 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. Infrastructure Placement Policies enable Enterprise IT Administrators to govern VM placement, promoting compliance and reducing human error. Policy as Code enforces instance-centric IaaS policies for Kubernetes environments, including cluster sizing and resource constraints. Integration with VCF Operations provides Enterprise IT Administrators and Org Admins with pricing visibility and upfront cost estimates, while Org Admins configure email-based notifications for alerts, cost reports, bills, and quota usage. 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 networks and gateway services. 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 blueprints & Infrastructure as Code

VCF Automation blueprints are designed to define machines, applications, and services that operate on VCF infrastructure resources. Platform Engineers can utilize input variables for placement logic to create standardized, reusable templates and incorporate ecosystem constructs such as networking, security objects, Kubernetes clusters, namespaces, and custom resources. VCF Automation enables a unique low-code 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. App Stack Formation enables Platform Engineers to capture groups of VMs—including their network configuration and disks—into blueprints for reuse in deploying identical or differentiated environments.

Leverage Kubernetes Multi-Cluster Management

VCF Automation empowers Platform Engineers to manage Kubernetes complexity at scale by providing a single unified view of distributed VKS cluster fleets running across multiple Projects. Platform Engineers can enforce consistent security and configuration settings across VKS cluster fleets through centralized policy management, ensuring governance without hindering self-service access. Data protection capabilities enable backing up entire clusters or specific namespaces to support cluster or application recovery in the event of failures, region outages, or rack power outages.

Streamline Content Management

VCF Automation simplifies content management by enabling the creation of content libraries within the VCF Automation UI. Admins can subscribe to a repo or manage images locally. Org Admins create Content Libraries with flexible scoping options: Organization-wide for access by all Org users, or Project-level assigned to specific Projects with read or read/write permissions. Project Admins directly publish and manage images within their assigned libraries. The solution supports subscription to external content libraries, including native Canonical subscriptions for secure Ubuntu OS images. The solution synchronizes libraries in the background, facilitates easy sharing of resources like blueprints and workflows, and enables one-click publishing to self-service catalogs and orchestrator workflow triggering, enhancing productivity and collaboration while reducing complexity and errors.

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

[Contact us](#), visit our [webpage](#), or search online for an authorized reseller. For detailed product specifications and system requirements, refer to the [VCF Automation documentation](#).

Leverage private AI services

VCF Automation enables private AI capabilities for enterprises. It features AI Blueprints Quick Start that streamlines the setup of VCF Private AI Services and enables self-service provisioning of GPU-enabled Deep Learning (DL) VMs and VKS Kubernetes clusters for AI workloads. [VCF Private AI Services](#) provide capabilities like Model Runtime, Vector Databases, Data Indexing and Retrieval service, AI Agent Builder service, Model Context Protocol (MCP) and more. 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 projects more efficiently. At the same time, it ensures optimal and secure management of resources. Additionally, the VM and VKS services within a supervisor namespace expedite the deployment of AI infrastructure through seamless provisioning via Self-Service IaaS.

Apply Network and Security Automation

VCF Automation enables self-service consumption of networking capabilities, allowing organizations to directly configure VPNs, NAT, and static routes on Transit Gateways without provider assistance. The solution introduces Distributed Transit Gateway support, implementing a distributed scale-out model that connects VPCs directly to the datacenter from ESXi hosts hosting workloads. IPAM support includes multiple CIDRs, Infoblox integration, and flexible IP allocations. Organization level shared subnets and VLAN extensions enable centralized network segment management across multiple namespaces. Org Admins leverage built-in security profiles with templated rules to dictate inter-VPC behavior and set default profiles that automatically enforce security postures on newly created VPCs. The solution integrates Distributed Firewalls (DFW) and Gateway Firewalls for both Transit Gateways and individual VPCs, with Security Groups managed through static and dynamic criteria¹.

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.

1. Requires VMware vDefend (Advanced Service).

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, 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.

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.

VCF Automation Features

| VMware Cloud Foundation Automation | VMware vSphere Standard | VMware vSphere Enterprise Plus | VMware vSphere Foundation | VMware vSphere 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 |
| UI / CLI / Unified APIs (declarative K8s APIs ^[2] REST APIs ^[1]) | No | No | No | Yes | Yes |
| Workload Performance & Cost Visibility for Consumers (w/ VCF Operations) ^[2] | No | No | No | Yes | Yes |

| VMware Cloud Foundation Automation | VMware vSphere Standard | VMware vSphere Enterprise Plus | VMware vSphere Foundation | VMware vSphere Foundation Edge | VMware Cloud Foundation |
|--|-------------------------|--------------------------------|---------------------------|--------------------------------|-------------------------|
| Private Cloud Services ^[2] | | | | | |
| Core Services: VM, VKS, Container, Network, Volume, VM Image | No | No | No | Yes | Yes |
| Extensible Services (ArgoCD, Contour, Harbor, Service Mesh, Velero, etc.) | No | No | No | Yes | Yes |
| Services Framework (Pre-bundled Services: Harbor, DSM, Secret Store Service, VKSM Auto-Attach Service, Encryption Management (BYOK), Multi-tenant DR (VLR), Metrics Aggregator Service, Configuration Service, VCD Migration Assistant, Lumos In-Product Feedback Service) | No | No | No | Yes | Yes |
| Private AI Services ^{[2], [6]} | | | | | |
| Catalog Setup Wizard (Automated Private AI service setup) | No | No | No | Yes | Yes |
| GPU-capable DL VM & GPU-capable VKS Cluster provisioning | No | No | No | Yes | Yes |
| DSM Integration for RAG-based workloads | No | No | No | Yes | Yes |
| Vector DBs, Data Indexing & Retrieval service, AI Agent Builder service, Model Context Protocol (MCP) | No | No | No | Yes | Yes |

| VMware Cloud Foundation Automation | VMware vSphere Standard | VMware vSphere Enterprise Plus | VMware vSphere Foundation | VMware vSphere Foundation Edge | VMware Cloud Foundation |
|---|-------------------------|--------------------------------|---------------------------|--------------------------------|-------------------------|
| Blueprints & 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 private cloud 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 |
| App Stack Formation (capture group of VMs into blueprints & reuse blueprints to redeploy) ^[6] | No | No | No | Yes | Yes |
| Kubernetes Multi-Cluster Management | | | | | |
| Centralized VKS Cluster Fleet Visibility | No | No | No | Yes | Yes |
| VKS Policy Management | No | No | No | Yes | Yes |
| Data Protection | No | No | No | Yes | Yes |

| VMware Cloud Foundation Automation | VMware vSphere Standard | VMware vSphere Enterprise Plus | VMware vSphere Foundation | VMware vSphere Foundation Edge | VMware Cloud Foundation |
|---|-------------------------|--------------------------------|---------------------------|--------------------------------|-------------------------|
| Add-on Management ^[7] | 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 |
| Resource Policies (IaaS, VKS) w/ Policy as Code (for Org Admin) ^[2] | No | No | No | Yes | Yes |
| Infrastructure Placement Policies (for Ent IT 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, Pricing ^[8] , Notifications (alerts, reports, bills) (w/ VCF Operations) (for Ent IT Admin & Org Admin) | No | No | No | Yes | Yes |

| VMware Cloud Foundation Automation | VMware vSphere Standard | VMware vSphere Enterprise Plus | VMware vSphere Foundation | VMware vSphere Foundation Edge | VMware Cloud Foundation |
|--|-------------------------|--------------------------------|---------------------------|--------------------------------|-------------------------|
| 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 |
| 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 |

| VMware Cloud Foundation Automation | VMware vSphere Standard | VMware vSphere Enterprise Plus | VMware vSphere Foundation | VMware vSphere Foundation Edge | VMware Cloud Foundation |
|--|-------------------------|--------------------------------|---------------------------|--------------------------------|-------------------------|
| Content Library Creation (for Org Admin & Project Admin) | No | No | No | Yes | Yes |
| Subscription to external & Canonical (Ubuntu OS images) content libraries | No | No | No | Yes | Yes |
| Network & Security Automation ^[2] | | | | | |
| Self-service networking (e.g., VPN, NAT, static routes on TG, GW Firewall) for Org consumption | No | No | No | Yes | Yes |
| Distributed Transit Gateway support for VPCs (VLAN support) | No | No | No | Yes | Yes |
| IPAM Support | No | No | No | Yes | Yes |
| Shared Subnets (across Orgs) | No | No | No | Yes | Yes |
| Security Profiles, Security Groups, DFW, GW Firewall (for Org Admin) | No | No | No | Yes | Yes |
| 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 |
| Action-Based Extensibility (ABX) (FaaS) ^[3] | No | No | No | Yes | Yes |

| VMware Cloud Foundation Automation | VMware vSphere Standard | VMware vSphere Enterprise Plus | VMware vSphere Foundation | VMware vSphere Foundation Edge | VMware Cloud Foundation |
|---|-------------------------|--------------------------------|---------------------------|--------------------------------|-------------------------|
| Integrations (Ansible ^[3] , Puppet ^[3] , VMware Salt ^[3] , ServiceNow ITSM ^[3] , IPAM (Infoblox) ^[1] , IPAM SDK ^[3] , AD ^[1]) | No | No | No | Yes | Yes |
| Workload Lifecycle Management | | | | | |
| Workload discovery and onboarding ^[3] | 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 in some countries
7. This feature is accessible with VKS 3.5+
8. Org for VM Apps includes ability to markup w/ rate card