VMware vRealize Automation
Modern infrastructure automation platform

What is VMware vRealize Automation?
VMware vRealize® Automation™ is a modern infrastructure automation platform with event-driven state management. It is designated to help organizations control and secure self-service multi-cloud with governance and DevOps-based infrastructure delivery. With vRealize Automation, internal IT operations, DevOps engineers, developers, and the lines of business get the environments and resources that they need faster with a public cloud-like user experience, while IT maintains security, compliance, and control. This means that customers benefit from increased scalability, speed, flexibility, and reliability as they reduce the complexity of their IT environment, streamline IT processes, and deliver a DevOps-ready automation platform.

Key benefits
Consistent automation across clouds and data centers enables:

- Faster time to market – Offload manual tasks with advanced workflows and agile templating.
- Ease of use – Rapidly set up and manage multi-cloud environments throughout the lifecycle with an intuitive, self-service consumption experience.
- Security and control – Establish consistent policies across multi-cloud environments and strengthen infrastructure with native compliance management, flexible cloud guardrails, and vulnerability remediation.
- Accelerated innovation – Expedite the adoption of new, cloud native technologies with a future-ready platform built on infrastructure as code (IaC) and DevOps principles.

Figure 1: VMware vRealize Automation overview.

Modern infrastructure automation platform
Easy, fast to set up and manage a secure multi-cloud environment
vRealize Automation helps customers establish an intelligent approach to automated lifecycle management by attaining end-to-end lifecycle management with VMware vRealize Suite Lifecycle Manager™. The process includes installation, configuration, upgrading and patching, all based on best practices and VMware Validated Designs™. vRealize Automation is designed to provide immediate value for deep, native integrations across the VMware stack with VMware vRealize Operations™ and self-service cloud setup for VMware Cloud Foundation™ and VMware Cloud™. Utilize the Cloud Resource Center for the
Customer use cases

• Self-service multi-cloud – Deliver consistent self-service consumption and delivery of infrastructure across VMware Cloud and public cloud environments.

• DevOps for infrastructure – Enable a powerful IaC platform with support for infrastructure pipelining and iterative development.

• Public cloud governance – Manage cost, performance, security, networking and configuration at scale for multi-cloud environments with an everything-as-code approach.

• Kubernetes automation – Automate Kubernetes cluster and namespace management and support for vSphere with Tanzu. Deliver rules created by Tanzu Mission Control and self-service lifecycle management through the self-service catalog.

• Network automation – Automate NSX to enable faster deployment and complete lifecycle automation of traditional and modern applications with networking and security services.

• Security operations – Harness event-driven automation to deliver full-service, closed-loop IT system compliance enforcement and vulnerability remediation.

management of all discovered, onboarded and provisioned deployments across compute, storage, networking and security.

Self-service provisioning with consistent compliance, policy and control

End users can ask for comprehensive IT services through a common, self-service product catalog that aggregates all services, templates and images from multiple clouds and platforms, including native public cloud services. With fine-grained policy management in vRealize Automation, admins can apply predefined and custom roles, policies and approval flows to projects and organizations to provide the desired level of access for all internal users. Templatized cloud configuration and policy definitions can be used to create compliant, policy-enforced cloud environments in a centralized location. This provides organizations with holistic visibility of their policies and any violations within their cloud environments, and related applications and resources. For identity management, vRealize Automation provides native integration with VMware Workspace ONE® Access™ and Microsoft Active Directory.

Self-service automation across multi-cloud environments

To optimize infrastructure workload deployments, the VMware Cloud Templates™ designer allows users to model business-critical IT services by using a visual canvas with a drag-and-drop interface. Templates can also be defined through IaC using YAML/JSON formats. Cloud-agnostic templates can be deployed quickly and effortlessly to any endpoints based on predefined policies. Enhanced multi-cloud support allows users to embed native public cloud constructs, Kubernetes clusters and namespaces, Terraform configuration files, and custom resources into templates that can be deployed to any public cloud endpoint.

Infrastructure as code and Kubernetes automation

vRealize Automation is a powerful DevOps platform that supports IaC, infrastructure pipelining, and seamless integrations with native state management via vRealize Automation SaltStack® Config and third-party tools, such as Ansible, Puppet and Terraform. Discover the native SaltStack configuration automation via modules for VMware Cloud, VMware vSphere®, and VMware NSX®. Leverage SaltStack and VMware Carbon Black Cloud™ integration to combine intelligent vulnerability insight from VMware Carbon Black Workload™ with the powerful IT automation from vRealize Automation SaltStack SecOps. The release pipeline management is automated with VMware Code Stream™, while increased coverage for infrastructure and app pipelines is offered through the easy-to-use, self-service catalog. Enhanced visibility and analytics provide an end-to-end view of all pipelines and their current status. In addition, vRealize Automation provides Kubernetes infrastructure automation capabilities. It provides vSphere with VMware Tanzu® integration, enabling cloud admins to create Kubernetes environments based on vSphere. Integrations with VMware Tanzu Mission Control™ also enable cloud admins to deliver rules created by Tanzu Mission Control and self-service lifecycle management through the self-service catalog. It also empowers DevOps teams
to request vSphere with VMware Tanzu Kubernetes Grid™ clusters in a self-service fashion, either via VMware Cloud Templates or the VMware Service Broker™ self-service catalog interface.

**vRealize Automation components**

**Cloud Assembly**
VMware Cloud Assembly™ is a multi-cloud provisioning service that provides a cloud API layer utilized by the templating engine. For virtualized data center infrastructure based on VMware Cloud Foundation, it offers the ability to create a private cloud. It also delivers a powerful multi-cloud governance and policy management framework in vRealize Automation Cloud Guardrails™. Powered by the open source Idem Project, it automates enforcement of cloud guardrails for networking, security, cost, performance and configuration at scale for multi-cloud environments with an everything-as-code approach. Cloud Assembly also supports powerful custom extensibility frameworks, including the serverless function Action-Based Extensibility (ABX), VMware vRealize Orchestrator™ workflows, and event-broker subscriptions.

**Service Broker**
Service Broker aggregates content from multiple resources and platforms, including Cloud Assembly, vRealize Orchestrator, and native public clouds, into a common product catalog. It provides a self-service model with flexible, policy-based guardrails for governance. Enable a federated catalog by leveraging vRealize Automation Cloud™ for on-premises instances.

**Code Stream**
Code Stream automates the application and infrastructure delivery process with release pipeline management, including visibility and analytics into active pipelines and their status for troubleshooting. It allows DevOps teams to leverage existing tools and processes with out-of-the-box integration.

**vRealize Orchestrator**
vRealize Orchestrator simplifies and automates complex data center infrastructure tasks, delivering consistent remediation of issues, extensibility and fast service delivery.

**vRealize Automation SaltStack Config**
SaltStack Config can easily define optimized, compliant software states and enforce them across your entire environment—virtualized, hybrid or public cloud—with powerful, intuitive configuration automation.