Self-Driving Operations by VMware vRealize Operations

AT A GLANCE

Self-driving operations—a simple, yet powerful strategy for automating and simplifying operations management—incorporate artificial intelligence (AI) and machine learning (ML) to help IT teams be more proactive and agile.

KEY BENEFITS

• Reduce unplanned downtime

• Lower costs

• Increase operational efficiency

• Deliver faster time to value

• Reduce risk

KEY FEATURES

• ML analytics for continuous operations management

• Intent-driven automated workload balancing

• Real-time, predictive capacity and cost analytics to proactively forecast demand and deliver actionable recommendations

• Cost transparency across private, hybrid and public clouds to optimize planning

• Integration with vRealize Log Insight™ for 360-degree troubleshooting[1]

• Centralized management for the VMware SDDC and VMware Cloud™ on AWS

• Complete VMware vSAN™/HCI operations

• Integrated VMware SDDC and VMware Cloud on AWS configuration and regulatory compliance

• Unified monitoring and visibility across AWS and Azure

• Open and extensible platform

Overview

VMware vRealize® Operations™ delivers self-driving operations from apps to infrastructure to optimize, plan and scale hybrid cloud and hyperconverged infrastructure (HCI) deployments while unifying multi-cloud monitoring. Powered by AI/ML, it helps IT run production operations hands off and hassle free with a unified operations platform, delivering continuous performance optimization, efficient capacity management, proactive planning, intelligent remediation and integrated compliance.

Capabilities

Continuous performance optimization

Assure hybrid cloud performance at minimal cost. Based on operational and business intent, real-time ML-based predictive analytics drive actions to automatically balance workloads and proactively avoid contention, continuously optimizing HCI, software-defined data center (SDDC) and hybrid cloud environments. Automate workload balancing and placement to reduce software license costs, optimize based on performance tiers, consolidate clusters or enforce compliance.

Efficient capacity and cost management

Reduce cost and improve efficiency with real-time, ML-based predictive capacity and cost analytics, delivering optimal consolidation and proactive planning. Predict future demand, get actionable recommendations, and automate reclamation and right-sizing. Integrate costs and capacity analytics to optimize utilization and reduce costs. Advanced what-if scenarios help plan capacity and model best-fit for new workloads, hardware procurement, HCI planning, cost comparison across data centers and migration planning to public clouds.

Intelligent remediation

Predict, prevent and troubleshoot faster with actionable insights correlating metrics, events, logs and configuration data to deliver AI- and ML-based anomaly detection across hybrid clouds. Extend monitoring visibility to multiple public clouds. Centralize IT operations management with native SDDC and VMware Cloud on AWS integrations, federated views, and more than 150 management packs for unmatched scalability and extensibility.

Integrated compliance

Reduce risk and enforce IT and regulatory standards for SDDC and VMware Cloud on AWS with integrated compliance and automated drift remediation. Ensure your environment's adherence to common requirements such as PCI and HIPAA, or create your own custom templates.

1. Sold separately as standalone and included in vCloud Suite and vRealize Suite.

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vREALIZE OPERATIONS PACKAGING			
	STANDARD	ADVANCED[2]	ENTERPRISE[2]
Standalone	Per VM/Per CPU	Per OSI/Per CPU	Per OSI/Per CPU
Available in Suite		VMware vRealize Suite/ vCloud Suite® Standard, Advanced (PLU)	VMware vRealize Suite/ vCloud Suite Enterprise (PLU)
Scale-Out Operations Platform	•	•	•
Single Sign-On	•	•	•
Remote Collectors	•	•	•
Visualization: Out-of-the-Box Dashboards, Views, Reports, Heat Map, Performance Charts	•	•	•
Performance Monitoring and Analytics	•	•	•
VMware vSphere® Security and Compliance, Including DISA, FISMA, ISO, CIS, PCI and HIPAA	•	•	•
Real-Time Predictive Capacity Management, Including Trending, Metering, Right-Sizing, Optimization	•	•	•
Overall Data Center Costs	•	•	•
What-If Scenarios for Adding/Removing VMs	•	•	•
Manual Workload Optimization	•	•	•
Predictive DRS and DRS Management	•	•	•
Guided Remediation	•	•	•
vRealize Log Insight Integration	•	•	•
vSAN Overview and Migration Dashboards	•	•	•
Built-In High Availability (Automated Failover of Platform Nodes)		•	•
Customizable Dashboards, Reports and Views		•	•
Super Metrics, Metric Correlation, Relationship Mapping		•	•
Advanced APIs: Resource/Data Addition, Report Generation, etc.		•	•
Fine-Grained Cost Analytics for Reclamation, Planning and Public Cloud Cost Comparison		•	•
What-If Scenarios: • Hardware Procurement and Decommission • vSAN/HCI Planning Scenarios • Migration to VMware Cloud on AWS, AWS, Azure, Google, IBM, or VMware Cloud Provider™ Program Partners, and Custom Clouds		•	•
Custom VM Profiles		•	•

2. VMware Configuration Manager is no longer included in vRealize Operations Standalone Advanced and Enterprise editions. It is also not included in vRealize Suite or vCloud Suite. VMware Configuration Manager is available as a separate standalone offering.

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vREALIZE OPERATIONS PACKAGING			
	STANDARD	ADVANCED[2]	ENTERPRISE[2]
Multiple What-If Stacked Scenarios		•	•
Business and Operational Intent-Based Automated and Schedulable Workload Optimization		•	•
Integration with vRealize Automation™ for Initial and Ongoing Workload Placement		•	•
VMware Cloud on AWS: Workload Balancing, Performance, Capacity/Cost Management, Planning, Troubleshooting and Compliance		•	•
Host-Based Placement		•	•
Automated Actions		•	•
vSAN: Workload Balancing, Performance, Capacity/Cost Management, Planning, Troubleshooting and Compliance		•	•
Monitoring of OS Resources (CPU, Disk, Memory, Network)		•	•
AWS, Azure and Container Management Packs from VMware			•
SDDC and Cloud Pod Health Management Pack		•	•
vRealize Orchestrator™ Management Pack		•	•
VMware Site Recovery Manager™ and vSphere Replication™ Management Packs		•	•
Custom Compliance Templates		•	•
Automated Compliance Drift Remediation		•	•
Service Discovery and Application Dependency Mapping		•	•
ServiceNow Integration		•	•
VMware Skyline™ Integration		•	•
Third-Party Infrastructure Management Packs: Storage, Networking, Converged/Hyperconverged as well as Non-vSphere Hypervisors		•	•
Continuous Availability			•
Out-of-the-Box Discovery, Monitoring and Troubleshooting for Packaged Applications			•
Integration with CloudHealth by VMware			•
Third-Party Multi-Cloud and Container Monitoring Management Packs: AWS, Azure, OpenStack, Kubernetes			•
Third-Party Care System Analytics Management Pack			•
Third-Party Database, Middleware, Application Management Packs			•

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Self-Driving Operations Glossary

AI/ML Engine	The application of ML and data science to IT operations problems. The AI/ML engine automates and enhances IT operations by applying analytics and ML to data collected from infrastructure and applications to automatically spot and react to issues in real time, including performance monitoring, capacity management, anomaly detection and remediation.
VMware SDDC	The ideal architecture for private and hybrid clouds. Pioneered by VMware and recognized by the industry and analysts, SDDC extends virtualization concepts—abstraction, pooling and automation—to all data center resources, including compute, storage and networking. SDDC consists of vSphere, vSAN and VMware NSX®.
Hybrid Cloud	Private and public cloud platforms working in conjunction to offer consistent infrastructure with consistent operations. Offerings from VMware Cloud Provider Program partners bring enterprise-class SDDC to the AWS cloud and service providers to deliver a hybrid cloud.
Multi-Cloud	The use of more than one public cloud service provider along with an on-premises data center and hybrid cloud.
Operations Platform	The best product to manage your VMware SDDC and VMware Cloud on AWS, including monitoring, troubleshooting, capacity and configuration compliance.
Visualization: Health Map, Performance Charts and so on	Numerous out-of-the-box dashboards are driven by widget visualizations and workflows that allow for the fastest troubleshooting and firefighting possible.
Policy Management	Allows you to manage the parts of your environment based on your business needs. Different settings/configs can be used for your production, staging, test, environment (e.g., clusters).
Performance Monitoring and Analytics	Out-of-the-box alerts and intelligent analytics.
Capacity Management	Visualize CPU, memory and disk utilization with real-time predictive analytics to project time remaining and capacity remaining. Get a view of current total cost of ownership and cost savings opportunities with built-in cost analytics. Take actions to reclaim unused capacity such as idle VMs, snapshots and powered-off VMs. Right-size VMs up or down to assure performance or save costs. Build what-if planning scenarios to model adding new VMs, purchasing hardware or migrating workloads to public cloud such as AWS or VMware Cloud on AWS.
Continuous Availability	The ability to stretch a vRealize Operations cluster across fault domains, which allows a vRealize Operations cluster to survive the failure of a fault domain.
Workload Balancing	Allows you to run your data center based on operational and business intent: • Drive better application performance • Compliance • License enforcement (save money) • Consolidation/densification (get more out of your hardware investment)
vSphere Health Monitoring and Configuration Change	vRealize Operations evaluates the data in your environment, identifying trends in object behavior, calculating possible problems and future capacity needs for objects in your system based on those trends, and alerts you when an object exhibits defined symptoms. Compliance is used to monitor the VMware vCenter Server® instances, hosts, virtual machines, distributed port groups and distributed switches in your environment to ensure that the settings on your objects meet the defined standards. vRealize Operations includes alerts for vSphere Hardening Guide versions 6.7, 6.5, 6.0 and 5.5. Hardening guides for the Health Insurance Portability and Accountability Act (HIPAA) and the Payment Card Industry Data Security Standard (PCI DSS) are delivered as PAK files that you upload, license and install.
Built-In High Availability (Automated Failover of Platform Nodes)	High availability creates a replica for the vRealize Operations master node and protects the analytics cluster against the loss of a node.

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Customizable Dashboards, Reports and Views	To view the status of all objects in vRealize Operations, create a dashboard by adding widgets. You can create and modify dashboards and configure them to meet your environment needs.
	With the vRealize Operations reporting functions, you can generate a report to capture details related to current or predicted resource needs. You can download the report in a PDF or CSV file format for future and offline needs.
Management Packs: Storage, Networking, Converged/Hyperconverged, Non-vSphere Hypervisors	You can extend the monitoring capabilities of vRealize Operations by installing optional solutions from VMware or third parties.
	VMware solutions include adapters for storage devices, NSX for vSphere, network devices, VMware Smarts and the SDDC health monitoring solution. Third-party solutions include AWS, SCOM and many others. To download software and documentation for optional solutions, visit the VMware Solution Exchange at *marketplace.vmware.com/vsx/*.
Multi-Cloud Monitoring Packs: AWS, VMware Integrated OpenStack, VMware Cloud Provider Program Partners	See above.
Super Metrics	The super metric is a mathematical formula that contains one or more metrics. It is a custom metric that you design to help track combinations of metrics, either from a single object or from multiple objects. If a single metric does not inform you about the behavior of your environment, you can define a super metric.
Monitoring of OS Resources (CPU, Disk, Memory, Network)	Telegraf agents gather operating system metrics and monitor availability of remote platforms and applications.
Service Discovery and Application Dependency Mapping	vRealize Operations Service Discovery discovers all the services running in each VM and then builds a relationship or dependencies between services from different VMs based on the network communication.
	It can create dynamic applications based on the network communication between the services and brings the functionality into vRealize Operations, which was earlier provided by vRealize Infrastructure Navigator™.

Purchase options

VMware vRealize Operations is available as part of VMware vRealize Suite and can also be purchased standalone. Choose the edition of either vRealize Suite or vRealize Operations that meets your needs.

Support

VMware offers global subscription and support (SnS) services to all VMware customers. For customers requiring additional services, VMware also offers professional services engagements for best practices and getting started with your deployment, both directly and through an extensive network of certified professionals. For more information, visit *vmware.com/services*.

Learn more

For more information or to purchase VMware products, call 1-877-VMWARE (outside North America, +1-650-427-5000), visit *vmware.com/products* or search online for an authorized reseller.

For detailed product specifications and system requirements, refer to the VMware vRealize Operations documentation at *vmware.com/products/vrealize-operations*.