Self-Driving Operations by VMware vRealize Operations

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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<td>• Migration to VMware Cloud on AWS, AWS, Azure, Google, IBM, or VMware Cloud Provider(^\ast) Program Partners, and Custom Clouds</td>
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<td>Custom VM Profiles</td>
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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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## Self-Driving Operations Glossary

<table>
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<tr>
<th>Term</th>
<th>Description</th>
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<tr>
<td><strong>AI/ML Engine</strong></td>
<td>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.</td>
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<td><strong>VMware SDDC</strong></td>
<td>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®.</td>
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<tr>
<td><strong>Hybrid Cloud</strong></td>
<td>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.</td>
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<td><strong>Multi-Cloud</strong></td>
<td>The use of more than one public cloud service provider along with an on-premises data center and hybrid cloud.</td>
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<td><strong>Operations Platform</strong></td>
<td>The best product to manage your VMware SDDC and VMware Cloud on AWS, including monitoring, troubleshooting, capacity and configuration compliance.</td>
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<tr>
<td><strong>Visualization: Health Map, Performance Charts and so on</strong></td>
<td>Numerous out-of-the-box dashboards are driven by widget visualizations and workflows that allow for the fastest troubleshooting and firefighting possible.</td>
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<td><strong>Policy Management</strong></td>
<td>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).</td>
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<tr>
<td><strong>Performance Monitoring and Analytics</strong></td>
<td>Out-of-the-box alerts and intelligent analytics.</td>
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<td><strong>Capacity Management</strong></td>
<td>Visualize CPU, memory and disk utilization with real-time predictive analytics to project time remaining and capacity remaining. 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.</td>
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<tr>
<td><strong>Continuous Availability</strong></td>
<td>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.</td>
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<td><strong>Workload Balancing</strong></td>
<td>Allows you to run your data center based on operational and business intent:</td>
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<td></td>
<td>• Drive better application performance</td>
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<td></td>
<td>• Compliance</td>
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<td>• License enforcement (save money)</td>
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<td></td>
<td>• Consolidation/densification (get more out of your hardware investment)</td>
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<tr>
<td><strong>vSphere Health Monitoring and Configuration Change</strong></td>
<td>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.</td>
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<tr>
<td><strong>Built-In High Availability (Automated Failover of Platform Nodes)</strong></td>
<td>High availability creates a replica for the vRealize Operations master node and protects the analytics cluster against the loss of a node.</td>
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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/](https://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](https://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](https://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](https://vmware.com/products/vrealize-operations).