

# Self-Driving Operations by VMware vRealize Operations

## AT A GLANCE

Self-driving operations by VMware vRealize® Operations™ delivers continuous performance optimization at minimal cost driven by business and operational intent, efficient capacity management, proactive planning, intelligent remediation, and integrated compliance. It automates and simplifies IT operations management, and provides unified observability from applications to infrastructure across hybrid cloud and multi-cloud environments.

## KEY BENEFITS

- Centralized management for software-defined data center (SDDC) and hybrid cloud environments
- Intent-driven automated workload balancing
- Host-based placement for software license separation and cost control
- Real-time, predictive capacity analytics to proactively alert on capacity risk, forecast demand, and deliver actionable recommendations
- Support for both demand- and allocation-based capacity models
- Integration of costs with capacity analytics
- Cost transparency across private and public clouds to optimize planning
- Integration with vRealize Log Insight™<sup>1</sup> for 360-degree troubleshooting with metrics and logs
- Complete VMware vSAN™/hyperconverged infrastructure (HCI) operations with automated workload balancing, full stack troubleshooting, and capacity management
- Integrated VMware vSphere® configuration and regulatory compliance
- Open and extensible platform

## Self-driving operations overview

VMware delivers self-driving operations from applications to infrastructure to optimize, plan, and scale SDDC and multi-cloud deployments. This highly scalable, extensible, and intuitive operations platform automates and centralizes management for SDDC and cloud environments, delivering continuous performance optimization based on intent, efficient capacity management, proactive planning, intelligent remediation, and integrated compliance.

## Use cases

**Continuous performance optimization** – Assure performance at minimal cost, driven by operational and business intent with predictive analytics driving actions to automatically balance workloads and proactively avoid contention. Automate workload balancing to reduce software license costs, optimize based on performance tiers, densify clusters, or enforce compliance.

**Efficient capacity management and planning** – Reduce cost and capacity risk with real-time, predictive capacity analytics, delivering optimal densification 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, and migration planning to public clouds.

**Intelligent remediation** – Predict, prevent, and troubleshoot faster with actionable insights correlating metrics and logs, and unified observability from applications to infrastructure. Centralize IT operations management with native SDDC integrations, federated views, and a highly scalable and extensible platform.

**Integrated Compliance** – Reduce risk and enforce IT and regulatory standards for vSphere 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.

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<sup>1</sup> Sold separately as standalone and included in vCloud Suite and vRealize Suite.

vREALIZE OPERATIONS			
	Standard	Advanced <sup>2</sup>	Enterprise <sup>2</sup>
Standalone	Per OSI/Per CPU	Per OSI/Per CPU	Per OSI
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	•	•	•
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	•	•	•
Business-Intent Based Manual Workload Optimization	•	•	•
Predictive DRS and DRS Management	•	•	•
Guided Remediation	•	•	•
vRealize Log Insight Integration	•	•	•
vSAN Overview and Migration Dashboards	•	•	•
Wavefront® Integration		•	•
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 – Adding vSAN Capacity – Migration to VMware Cloud™ on AWS, AWS, Azure, Google, IBM, or VMware Cloud Provider Program, and custom clouds		•	•
Custom VM Profiles		•	•
Multiple What-If Stacked Scenarios		•	•
Business-Intent Based Automated and Schedulable Workload Balancing		•	•

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

vREALIZE OPERATIONS			
	Standard	Advanced <sup>2</sup>	Enterprise <sup>2</sup>
Integration with vRealize Automation™ for Initial and Ongoing Placement		•	•
vSAN-Aware Workload Balancing		•	•
Host-Based Placement		•	•
Automated Actions		•	•
vSAN Performance, Capacity, and Troubleshooting		•	•
Monitoring of OS Resources (CPU, Disk, Memory, Network)		•	•
SDDC and Cloud Pod Health Management Pack		•	•
vRealize Orchestrator™ Management Pack		•	•
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		•	•
Out-of-the-Box Discovery, Monitoring, and Troubleshooting for Packaged Applications			•
Multi-Cloud and Container Monitoring Management Packs: AWS, Azure, OpenStack, Kubernetes			•
Care System Analytics Management Pack			•
Third-Party Database, Middleware, Application Management Packs			•

## Self-Driving Operations Glossary

<b>Operations Platform for vSphere and vCenter</b>	The best product to manage your VMware SDDC including monitoring, troubleshooting, capacity, configuration compliance.
<b>Visualization: Health Map, Performance Charts, etc.</b>	Numerous out-of-the-box dashboards are driven by widget visualizations and workflows that allow for the fastest troubleshooting and firefighting possible.
<b>Policy Management</b>	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).
<b>Performance Monitoring and Analytics</b>	Out-of-the-box alerts and intelligent analytics
<b>Capacity Management</b>	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.
<b>Workload Balancing</b>	Allows you to run your data center based on operational and business intent. <ul style="list-style-type: none"> <li>• Drive better application performance</li> <li>• Compliance</li> <li>• License enforcement (save money)</li> <li>• Consolidation/densification (get more out of your hardware investment)</li> </ul>

<b>vSphere Health Monitoring and Configuration Change</b>	<p>vRealize Operations Manager™ 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.</p> <p>Compliance is used to monitor the 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.</p> <p>vRealize Operations Manager includes alerts for VMware vSphere Hardening Guide versions 6.7, 6.5, 6.0, and 5.5. Hardening guides for Health Insurance Portability and Accountability Act (HIPAA) and Payment Card Industry Data Security Standard (PCI DSS) are delivered as PAK files that you upload, license, and install.</p>
<b>Built-In High Availability (Automated Failover of Platform Nodes)</b>	<p>High availability creates a replica for the vRealize Operations Manager master node and protects the analytics cluster against the loss of a node.</p>
<b>Customizable Dashboards, Reports, and Views</b>	<p>To view the status of all objects in vRealize Operations Manager, create a dashboard by adding widgets. You can create and modify dashboards and configure them to meet your environment needs.</p> <p>With the vRealize Operations Manager 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.</p>
<b>Third-Party Management Packs: Storage, Networking, Converged/Hyperconverged, Non-vSphere Hypervisors</b>	<p>You can extend the monitoring capabilities of vRealize Operations Manager by installing optional solutions from VMware or third parties.</p> <p>VMware solutions include adapters for Storage Devices, Log Insight, NSX* for vSphere, Network Devices, and vRealize Configuration Manager™. Third-party solutions include AWS, SCOM, EMC Smarts, and many others. To download software and documentation for optional solutions, visit the VMware Solution Exchange at <a href="https://marketplace.vmware.com/vsx/">https://marketplace.vmware.com/vsx/</a>.</p>
<b>Multi-Cloud Monitoring Packs: AWS, VMware Integrated OpenStack, VMware Cloud Provider™ Program Partners</b>	<p>See above</p>
<b>Super Metrics</b>	<p>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.</p>
<b>Monitoring of OS Resources (CPU, Disk, Memory, Network)</b>	<p>Telegraf agents gather operating system metrics and monitor availability of remote platforms and applications.</p>
<b>Application Dependency Mapping (Now Service Discovery Management Pack)</b>	<p>vRealize Operations Service Discovery Management Pack 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.</p> <p>The management pack can create dynamic applications based on the network communication between the services and brings in the functionality into vRealize Operations Manager which was earlier provided by vRealize Infrastructure Navigator™.</p>

### Learn more

For more information or to purchase VMware products, call 1-877-VMWARE (outside North America, +1-650-427-5000), visit <http://www.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 [www.vmware.com/products/vrealize-operations](http://www.vmware.com/products/vrealize-operations).

