

VMware Cloud Foundation Cloud Maturity Model - Operations

Adoption Path for VCF 5.2

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Maturity Stage 1: Visibility and Observability

Performance and Inventory Visibility: A Simple Guide to User Interface

See how to quickly navigate around the VCF Operations user interface and learn how you can find what you are looking for quickly and easily.

- [Getting Started with VCF Operations Documentation](#)

Performance and Inventory Visibility: Leveraging Out of the Box Dashboards

VCF Operations comes with a plethora of options for out-of-the-box dashboards! Come learn how to utilize these dashboards to control your budgets, troubleshoot a challenge, get the most out of your resources, or improve your sustainability and Green Score.

- [Using Out-of-the-Box Dashboards in VCF Operations](#)
- [Predefined Dashboards in VCF Operations Documentation](#)

Performance and Inventory Visibility: Mastering Monitoring and Troubleshooting Essentials

Learn the features of VCF Operations that can drastically shorten your mean time to resolution (MTTR) and allow you to act more proactively to resolve issues before they become outages. Topics covered will include alerts, troubleshooting with out-of-the-box dashboards and flows, and troubleshooting with logs.

- [Mastering Monitoring and Troubleshooting Essentials](#)
- [Configuring Alerts and Actions in VCF Operations Documentation](#)
- [Try the Hands On Lab - Module 3 - Mastering Monitoring and Troubleshooting Essentials](#)

Performance and Inventory Visibility: Using Metrics and Charts for Troubleshooting

Metrics and metric charts give you the details you might not view in a dashboard. When you really want to dive into a particular aspect of your environment, there are many ways to visualize your data. This lesson will discuss widgets, the metric picker, trend lines, anomalies, anomalous metrics and the various options that can help display your data the way you need it.

- [Try the Hands on Lab - Module 8 - Using Metrics and Metric Charts for Troubleshooting](#)

Performance and Inventory Visibility: Creating Custom Dashboards for VCF Operations

Come learn how to create custom dashboards for use in VCF Operations. Covered topics include widgets, widget configurations, dashboard drivers, interactions, and depth of relationships.

- [GMOO Building Custom Dashboards with VCF Operations](#)
- [Try the Hands on Lab - Module 5 - Creating Custom Dashboards for VCF Operations](#)

Performance and Inventory Visibility for the Network: Events and Alerts

Learn about the out-of-the-box events VCF Operations for Networks provides and create User defined alerts using search capabilities.

- [VCF Operations for Networks - Events and Alerts](#)

Performance and Inventory Visibility for the Network: Network Performance Monitoring and Diagnostics

Monitor NSX and physical device health, visualize overlay and underlay network paths with 3rd party vendor devices like Cisco ACI.

- [VCF Operations for Networks - Troubleshooting](#)

Performance and Inventory Visibility for the Network: Configuring and Understanding Network Analytics

This section covers the Flow Insights functionality, which provides Day2Ops troubleshooting, identifies abnormal flows, top talking entities, and Analytics Outliers to detect traffic patterns and report on misconfiguration or DDOS attacks.

- [VCF Operations for Networks - Analytics](#)

Performance and Inventory Visibility for the Network: Network Device Discovery

Don't you wish you had a network auto-discovery to find all these network elements to help you connect the dots when troubleshooting a VM-to-VM logical/overlay path through the underlay network? Introducing Network Auto-Discovery with VCF Operations for Networks.

- [VCF Operations for Networks - Network Auto Discovery](#)

Infrastructure Lifecycle Management: Patches and Upgrades

One of the key capabilities of VMware Cloud Foundation is the orchestrated updating of workload domains. This includes VMware NSX, ESXi, and vCenter Server. Admins use the SDDC Manager interface or REST API to execute lifecycle management operations on the VCF instance. This includes downloading the correct software bundles from the online depot, performing pre-checks, executing the upgrades, and verifying the process has completed successfully.

- [Explore the Ease of Infrastructure Lifecycle Management with VMware Cloud Foundation](#)
- [How to Apply Async Patches in VCF 5.2 for Greater Control and Flexibility in Your Private Cloud](#)
- [Deploy a VCF Workload Domain with Async Patches in a Single Step](#)
- [Upgrade and Patch in a Single Maintenance Window with VCF 5.2](#)
- [Async Patching of NSX in VMware Cloud Foundation](#)

Infrastructure Lifecycle Management: Cluster Image Management

When you manage a cluster or host with a single image, you can change the image at any time. You can edit the image by changing the software that it includes, for example, you can add or remove components, and you can also change the version of the included components.

- [Working with Images](#)

Infrastructure Lifecycle Management: Cluster Patch/Update Remediation

By remediating a cluster against an image, you apply the software specified in the image to all the hosts in the cluster.

- [Remediating a Cluster or a Standalone Host Against a Single Image](#)

Infrastructure Lifecycle Management: Firmware Driver Lifecycle

Utilizing a Hardware Support Manager allows vSphere administrators to complete full stack software maintenance and monitoring of clusters and hosts.

- [Firmware lifecycle made simple with vSphere Lifecycle Manager - VMware Cloud Foundation \(VCF\) Blog](#)

Infrastructure Lifecycle Management: Live Patch

Live Patch allows vSphere clusters to be patched without migrating workloads off the target hosts and without the hosts needing to enter full maintenance mode.

- [Patch Quicker with VMware vSphere Live Patch - VMware Cloud Foundation \(VCF\) Blog](#)

Fleet Management: Managing Passwords

VMware Cloud Foundation enables admins to update or rotate passwords for the infrastructure components in a private cloud. Keeping passwords in compliance with policy is much easier when centrally managed by SDDC Manager.

- [Managing Passwords in VMware Cloud Foundation](#)
- [VMware Cloud Foundation - Password Management](#)

Fleet Management: Managing Certificates

Certificate visibility involves identifying all digital certificates in the network and keeping track of certificate details such as issuer, expiration date, associated domains or applications, and key usage. IT admins can now continuously monitor the status and health of certificates to ensure they are valid.

- [Configure a Microsoft Certificate Authority for use with VMware Cloud Foundation](#)
- [Integrate Microsoft Active Directory Certificate Services with VMware Cloud Foundation](#)
- [September 2024 TAM Customer Webinar – VCF Operations What's New / Diagnostics](#)

Fleet Mgmt: Managing Licenses

Centralized License Management streamlines IT operations. It reduces overhead by automating tasks such as tracking consumption, monitoring renewals, and reporting usage. VCF Operations provides key functionality that helps you do all these things for your VMware Cloud Foundation, VMware vSphere Foundation, vSAN per TiB, and legacy license keys.

- [VCF Operations Provides New Centralized License Management Functionality](#)

Maturity Stage 2: Analytics and Reporting

Log Management: Integrating and Troubleshooting with Logs

Troubleshooting with metrics only gives you half the story. Learn how to bring your log events into VCF Operations from VCF Operations for Logs and use the combined power of metrics and logs to solve your most complicated issues.

- [VCF Operations for Logs - Better Together](#)
- [Try the Hands on Lab - Module 4 - Integrating and Troubleshooting with Logs](#)

Diagnostics: Diagnosing Problems in your Cloud

Easily run basic diagnostics of VCF components (e.g., vCenter, ESXi, vSAN) and provide faster time to issue detection and remediation and improve the overall health of your VCF infrastructure. Findings link to KB articles which help you “fix” the issue.

- [September 2024 TAM Customer Webinar – VCF Operations What's New / Diagnostics](#)

Reporting: Generating Reports for Cost, Capacity, Compliance, and More

Reports can help you track performance, scrutinize overall health, and give you the knowledge to make more informed decisions. This lesson will go into running, scheduling, and using reports in VCF Operations.

- [Reporting in VCF Operations](#)
- [Reports in VCF Operations Documentation](#)
- [Try the Hands on Lab - Module 6 - Generating Reports for Cost, Capacity, Compliance and More](#)

Reporting: Creating views for better Visibility

Views can be unrivaled when creating dashboards and reports that give you the information you need and none of the fluff. Learn how to create and work with these views to customize the information you want to see.

- [VCF Operations - Creating Views for Better Visibility](#)
- [Working with Views in VCF Operations Documentation](#)
- [Try the Hands on Lab - Module 7 - Creating Views for Better Visibility](#)

Reporting: Generating Custom Reports with VCF Operations

Learn to create a custom report and schedule it to run or download it.

- [Try the Hands on Lab - Module 4 - Report Generation in VCF Operations](#)

Third Party Data Ingestion (3rd Party Mgmt Packs): Extending your Solution with Management Packs!

Learn how management packs can extend the capabilities of VCF Operations and give greater depth to your troubleshooting and proactive monitoring sessions. We will cover the installation and configuration of management packs.

- [VCF Operations for Integrations Overview](#)
- [Try the Hands on Lab - Module 1 - Extending Your Solution with Management Packs](#)

Third Party Data Ingestion (3rd Party Mgmt Packs): Building your own Custom Integrations with VCF Operations Management Pack Builder

VCF Operations Management Pack Builder is a stand-alone appliance that enables the creation of custom management packs for use in VCF Operations. This lesson covers this no-code solution for bringing in data from an external API and either creating new resources or extending your VMware and third-party resources with new Data, Relationships, and Events.

- [VCF Operations Management Pack Builder v1.1](#)

Maturity Stage 2: Capacity Management

Capacity Mgmt: Gaining Insight into your Capacity

VCF Operations provides capacity management and planning for your VCF cloud. This session provides an overview of how you can quickly get started with capacity management for your environment. The session will include out-of-the-box capacity dashboards to get a comprehensive overview of capacity in your environment.

- [VCF Operations - Gaining Insights into your Capacity](#)
- [Capacity Insights with VCF Operations Documentation](#)
- [Try the Hands On Lab - Module 2 - Gaining Insights into your Capacity](#)

Capacity Mgmt: Reclaiming Unused Resources to Save on Capacity and Cost

What can you do when capacity is running short? VCF Operations provides capacity management such as the ability to reclaim unused resources. This portion covers how you can reclaim unused resources to gain the most out of their environment.

- [Reclaiming Unused Resources to Save on Capacity and Cost](#)
- [Reclamation Insights with VCF Operations Documentation](#)

Capacity Mgmt: Advanced Capacity Management

Managing physical resources and capacity in your environment is an ongoing battle. Learn how VCF Operations' capacity management models can help you save on hardware and dial down cost to make your VCF cloud environments lean and mean.

- [School of Ops - Capacity](#)
- [Try the Hands on Lab - Module 3 - Advanced Capacity Management](#)

Capacity Mgmt: Planning for your Future Capacity Needs

Do you want to make sure that the capacity changes to your environment are actually going to help? Then run the 'What If' scenarios from our workload planner to make sure you're making the right decisions before putting them into production.

- [School of Ops - Capacity](#)
- [What If Workload, Capacity and Migration Planning with VCF Operations Documentation](#)
- [Try the Hands on Lab - Module 13 - Plan for Your Future Capacity Needs](#)

Sustainability: Running a Green Cloud

Awareness is the first step to sustainable development. Make informed decisions and choices for the future by monitoring your green score with VCF Operations. Aiming for a lower score is the goal to reduce your overall carbon footprint for a greener future. Topics Covered include - How to setup and configure, Metrics involved, Monitor Greenscore, Carbon footprint, Power Consumption, and Environmental Impact. How to optimize your green score – reclaim and rightsize resources.

- [Green Score and Sustainability - VCF Operations](#)
- [How VMware IT Is Increasing Its Sustainability Green Score](#)
- [VCF Operations Green Score](#)
- [Empowering Sustainability: Carbon Emissions Explorer Dashboard for VCF Operations](#)
- [VMware Green Score in VCF Operations \(formerly vRealize Operations\)](#)
- [Sustainability in VCF Operations Documentation](#)

Maternity Stage 3: Performance Optimization

Workload Optimization: Using Workload Placement to Run an Efficient Data Center

Implementing a proper workload placement strategy is crucial for getting the full efficiency out of your resources. In this section you will learn how to use VCF Operations to configure your Operational and Business Intent to generate a plan that will optimize your data centers and mitigate risk.

- [Workload Placement in VCF Operations](#)
- [Workload Placement in VCF Operations Documentation](#)

Workload Optimization: Achieving Optimal Performance with Rightsizing

Oversized VM's can be costly to run while undersized VM's aren't able to maintain their workloads effectively. Learn how to properly size VM's based on the workloads that are assigned. Covered topics include configuring policy settings, assessing risk level, and automating your rightsizing actions.

- [VCF Operations - Achieve Optimal Performance with Rightsizing](#)
- [Rightsizing Documentation- VCF Operations](#)
- [Try the Hands on Lab - Module 11 - Achieve Optimal Performance with Rightsizing](#)

Workload Optimization: Workload Placement - Running Host based Optimization

Learn about Tag and Host based workload placement.

- [Try the Hands on Lab - Module 3 - Workload Placement – Running Host Based Optimization](#)

Advanced Troubleshooting: Customizing Alerts and Leveraging Notifications

This video will show you how to customize alerts in VCF Operations to make sure you can spot the real issue instead of just noise. The video will help with setting up proper notification channels using the Standard Email Plugin.

- [Customizing Alerts and Leveraging Notifications](#)
- [Configuring Alerts and Actions in VCF Operations Documentation](#)
- [Try the Hands on Lab - Module 6 - Customizing Alerts and Leveraging Notifications](#)

Advanced Troubleshooting: Advanced Troubleshooting Techniques

Out-of-the-box dashboards not showing you deep enough insight into challenges that are arising? Use the Troubleshooting Workbench to get to the heart of your challenge. Come learn how the Workbench can use events, configuration changes, anomalous metrics, and metrics correlation to discover the true root cause of the problem.

- [Troubleshooting Workbench in VCF Operations](#)
- [Metric Correlation in VCF Operations](#)
- [Troubleshooting Workbench Documentation- VCF Operations](#)
- [Try the Hands on Lab - Module 9 - Advanced Troubleshooting Techniques](#)

Advanced Troubleshooting: Guided Network Troubleshooting

Find out how the Guided Network Troubleshooting feature guides users during a troubleshooting process, helps map out relationships and dependencies, detects anomalies, and provides hints to identify the root cause of an incident.

- [VCF Operations for Networks Guided Network Troubleshooting](#)

Advanced Troubleshooting: Network Assurance and Verification

Get insights into complex networks using Network Map and Intents, implementing configuration best practices based on formal verifications.

- [VCF Operations for Networks - Network Assurance and Verification](#)
- [VCF Operations for Network - Network Assurance and Verification Demo](#)

Advanced Troubleshooting: Search Queries

Learn to use search capabilities and type in advanced search queries to query everything VCF Operations for Networks collects. The query is written in natural language, so you don't have to be an expert to use it.

- [VCF Operations for Networks - Search Exchange Walkthrough](#)

Advanced Troubleshooting: Configuring and Managing Alert Notifications

Learn to add, manage, and edit your notification rules and configure and activate the settings for outbound alerts.

- [Configuring Webhooks with vRealize Operations and Log Insight](#)

Advanced Troubleshooting: Creating a Custom Alert Definition

Learn to create a Custom Alert Definition and configure notifications for it.

- [Try the Hands on Lab - Module 1 - Creating a Custom Alert Definition](#)

Advanced Troubleshooting: Enhancing the depth of VCF Operations with Supermetrics

This lesson will teach you how to create super metrics; mathematical formulas that contain a combination of one or more metrics (for one or more objects) that will then persist over time and can be used for different interactions just like any other metric

- [VCF Operations Super Metrics Made Easy](#)
- [Try the Hands on Lab - Module 6 - Enhancing depth of VCF Operations with Super Metrics](#)

Advanced Troubleshooting: Leveraging the Databus to Send Data to 3rd Party Sources

This session gives a detailed overview of the feature 'Databus.' The Databus is the best way to export high volumes of data from VCF Operations for Networks

- [All aboard the Databus with VCF Operations for Networks](#)

Application Mgmt: Monitoring and Troubleshooting Kubernetes

Come learn how you can leverage the Kubernetes management pack and extend the capabilities of VCF Operations to monitor Kubernetes distributions like the vSphere Kubernetes Service.

- [Kubernetes Monitoring with VCF Operations and TKG running VMware Cloud on AWS](#)
- [Managing vSphere with Kubernetes using VCF Operations](#)
- [Kubernetes Management Pack - VCF Operations Documentation](#)
- [Try the Hands on Lab - Module 2 - Monitoring and Troubleshooting Kubernetes](#)

Application Mgmt: Kubernetes, TKGi, and OpenShift

Learn about the in-depth traffic visibility, topology, and troubleshooting capabilities VCF Operations for Networks provides for containers and Kubernetes platforms.

- [VCF Operations for Networks - Kubernetes](#)

Application Mgmt: Application Discovery

The application is what it's all about. It's what drives the business and generates revenue. This session shows how VCF Operations for Networks discovers applications using multiple discovery methods and helps correlate infrastructure components directly to the application for a holistic overview of the entire landscape.

- [VCF Operations for Networks - Application Discovery](#)
- [VCF Operations for Networks Using Machine Learning to Discover Applications](#)

Application Mgmt: Creating Custom Application Dashboards

Learn how to create custom dashboards and see how they can help troubleshoot application-centric issues using a Single pane of glass view for Application Network KPIs

- [VCF Operations for Networks - Dashboards](#)

Application Mgmt: Monitoring Applications with VCF Operations

Learn how service discovery, agent-based application monitoring, and third-party integrations with the existing Application Performance Management (APM) system, will help you monitor your application Monitoring in VCF Operations.

- [Try the Hands on Lab - Module 14 - Application Monitoring](#)

Application Mgmt: Advanced Monitoring Applications with VCF Operations

Learn to monitor Applications and troubleshoot slow or problematic Services.

- [Try the Hands on Lab - Module 2 - Application Monitoring with VCF Operations](#)

Intelligent Remediation: Saving Time by Automating Remediation

Automation Central, within VCF Operations, can provide a way to automate deletion of old snapshots, idle VM's, power off idle VM's, downsize oversized VM's, and scale-up your undersized VM's. There are also additional options power off, power on, and reboot your public cloud resources.

- [Automation Central Documentation- VCF Operations](#)
- [Try the Hands on Lab - Module 10 - Save Time by Automating Remediation](#)

Maturity Stage 4: Cost Efficiency

Cost Visibility: Understanding your Cloud Costs and Saving Money

Make sure you're fully informed when making cost decisions with our cost dashboards for multi-cloud. Save money. Track TCO. Plan for the future!

- [Cost Analysis in VCF Operations Documentation](#)
- [Try the Hands On Lab - Module 5 - Understand your Cloud Costs and Save Money](#)
- [Understanding Your Cloud Costs to Save Money](#)

Cost Visibility: Configuring Costs to Match Your Business Needs

Learn how to configure cost variables for your environment (server, storage network) to better understand where you're IT spend is going. Once that's done you can offer showback and chargeback to users that will help keep costs in line.

- [School of Ops - Cost and Price](#)
- [Cost Drivers Documentation- VCF Operations](#)
- [Try the Hands on Lab - Module 5 - Configuring Costs to Match Your Business Needs](#)

Chargeback or Showback: Enabling Chargeback for your Business

Determining who is responsible for what costs can be a daunting challenge. VCF Operations can assist in chargeback of costs by setting rate cards that will give the price of a given resource. This video will cover these rate cards along with dashboards associated.

- [School of Ops - Cost and Price](#)
- [Try the Hands on Lab - Module 12 - Enabling Chargeback for Your Business](#)

Automated Reclamation: Saving Time by Automating Remediation

Automation Central, within VCF Operations, can provide a way to automate deletion of old snapshots, idle VM's, power off idle VM's, downsize oversized VM's, and scale-up your undersized VM's. There are also additional options power off, power on, and reboot your public cloud resources.

- [Automation Central Documentation- VCF Operations](#)
- [Try the Hands on Lab - Module 10 - Save Time by Automating Remediation](#)

Maturity Stage 5: Configuration Management

Config Drift: Ensuring Consistent Configurations in your Cloud

You can use VCF Operations to monitor and view vCenter configuration settings that have drifted from assigned templates without needing to track every change manually. Configuration drift shows the changes in product configuration over time and allows you to compare the changes to the assigned template values. It helps prevent misconfiguration from going unnoticed, reduce the risk of security breaches, and keep the environment running smoothly.

- [VCF Operations Eliminates Configuration Drifts for vCenter](#)

