VMware Cloud Foundation Operations for Networks

Accelerate network visibility and troubleshooting across VMware Cloud Foundation

At a glance

VMware Cloud Foundation Operations for networks delivers intelligent network operations for private cloud. VCF Operations for networks is available in VCF which is a full-stack private cloud solution that combines the scale and agility of the public cloud with the security and performance of the private cloud. VCF Operations for networks is deployed on-premises. VCF Operations for networks helps customers build an optimized, highly available, and secure network infrastructure by accelerating application discovery, migration, network segmentation planning and deployment. The capabilities enable visibility across virtual and physical networks and provide operational views to manage and scale VCF network infrastructure.

VMware Cloud Foundation

VCF Operations for networks is only available as part of VCF.

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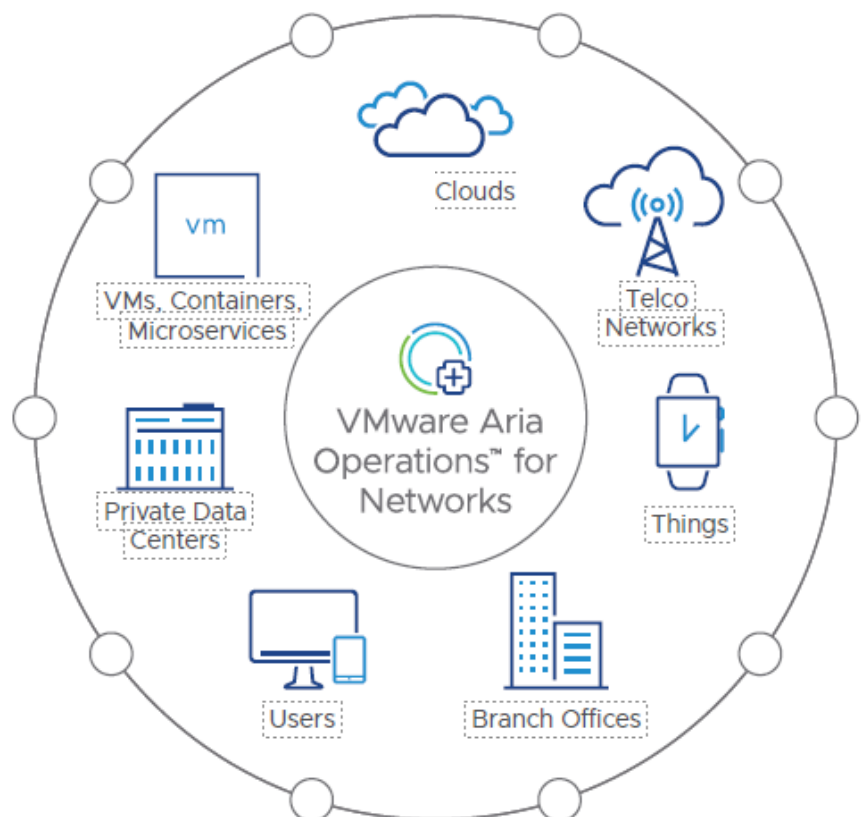

Figure 1: VCF Operations for networks provides network planning and network visibility across VCF and adjacent networks.

VMware Cloud Foundation

VCF users need to monitor application dataflow for optimizing east-west and north-south traffic without challenging and time-consuming manual processes. VCF users also need converged visibility across virtual and physical networks to optimize performance.

VCF includes VCF Operations for networks which provides a simple end-to-end network visibility tool to troubleshoot and get best practices for their VCF network deployments.

VCF Operations for Networks

VCF includes VCF Operations for networks which provides a simple end-to-end network visibility tool to troubleshoot and get best practices for their VCF network deployments. VCF Operations™ for networks (formerly VMware vRealize® Network Insight™) integrates with many vendors and can help provide end-to-end visibility with both physical and virtual infrastructure with a comprehensive flow assessment.

Simplify NSX Operations

VCF Operations for networks can help provide a network traffic assessment before deploying NSX. The details in the assessment can help users improve performance and availability with converged visibility across physical and virtual networks. Users can also simplify NSX operations management with an intuitive UI and natural language search to quickly pinpoint network issues and troubleshoot, as well as get best practices deployment and compliance recommendations.

Key Benefits

Accelerate network segmentation planning and deployment with VMware

Audit changes to the security posture and ensure compliance

Troubleshoot quickly across virtual and physical network and security infrastructure

Manage and scale NSX deployments with confidence

Reduce business risk by mapping application dependencies during application migration planning

Accelerate performance of your business-critical applications by optimizing your network and eliminating bottlenecks

Operationalize Kubernetes and troubleshoot connectivity issues between containerized workloads

Network Assurance and Verification

VCF Operations for Networks Assurance and Verification enables formal verification by using a unified mathematical model of how the network functions. This improves network performance with more proactive monitoring capabilities in comparison to typical reactive network monitoring. Business intent checks enable better network planning and troubleshooting, which result in the assurance of better uptime and network resiliency.

Use Cases

Network Monitoring and Troubleshooting

Networking

Gain network visibility for VMware Cloud Foundation where there are connections across NSX, and VMware HCX, connects with Kubernetes, VMware Cloud on AWS, Azure VMware Solution, Google Cloud VMware Engine, Oracle Cloud VMware Solution.

• Gain visibility between overlay and underlay networks
• Enable end-to-end troubleshooting, traffic, and path analytics
• Enable network assurance and verification
• Utilize guided network troubleshooting for intuitive root-cause analysis

Applications

• Enable application discovery and plan application migrations and use findings to work with VMware HCX to migrate applications
• Measure application latency and performance
• Reduce mean time to repair (MTTR) for application connectivity issues
• Optimize application performance by eliminating network bottlenecks
• Analyze traffic and apps across private cloud

Security

Plan application security with VMware NSX
• Plan security; recommend firewall policies and network segmentation apps; PCI compliance monitoring and compliance reporting
• Troubleshoot security for hybrid applications and designated crown jewels across virtual machines (VMs), containers and clouds
• Map dependencies to reduce risk during app migration

Features

VCF Operations for Networks

VMware Cloud Foundation network visibility and troubleshooting for vSphere, vCenter, NSX, HCX

Network Assessment planning for VMware Cloud Foundation and NSX

Security & Network Capacity Planning

App-centric Flow-Based Network Troubleshooting and Analytics

Path Visibility for Overlay Fabric and Underlay

Day 2 Network Operations with Assurance and Verification

VMware Cloud Network Visibility

End-to-End Network Visibility Adjacent to VMware Cloud Foundation

VMware Cloud Foundation Network Visibility and Troubleshooting for vSphere, vCenter, NSX, HCX

vCenter plug-in with views of networking metrics and analytics (on the vCenter dashboard)

Deployment backup and restore for replicating the setup configuration

Virtual flows (VDS IPFIX, V2V, V2P)

Custom dashboards

VCF Operations integration

Flow IPv6 traffic from VMware vCenter and NSX

NSX Load Balancer integration

NSX Advanced Load Balancer integration (AVI Separate purchase required)

NSX federation visibility

VMware HCX troubleshooting and monitoring, including the VM-to-VM path

VMware HCX network monitoring, visibility, L2 extension in VMware Cloud, and VM-to-VM overlay path

Visibility for VMware Tanzu® Kubernetes Grid™ Integrated Edition (Separate Tanzu purchase required), Kubernetes, and Red Hat OpenShift
Visibility of NSX Container Plug-in for OpenShift 4.x (Kubernetes cluster)
Network Assessment planning for VMware Cloud Foundation and NSX
Pre-Deployment Assessment Dashboards for network traffic
Trial Evaluation Mode with VMware Cloud Foundation
Single Licensing with VMware Cloud Foundation
Security & Network Capacity Planning
Crown Jewels security reachability visibility
Federal Information Processing Standards (FIPS 140-2) validated cryptographic modules
NSX PCI compliance dashboard
NSX Firewall network segmentation planning and operations (NSX IPFIX)
App-centric Flow-Based Network Troubleshooting and Analytics
Application discovery (names, tags, RegEx)
Flow-Based Application Discovery
DNS mapping (import bind file)
Application dashboard (alerts, intent failures, security issues, and guided network troubleshooting incidents)
Visibility of Incomplete TCP sessions
Flow/threshold analytics and reporting

Path Visibility for Overlay Fabric and Underlay
NSX visibility over network fabric
Physical flows (NetFlow v7 and v9, and sFlow)
Network visibility of logical routing and switching
Day 2 Network Operations with Assurance and Verification
Network Assurance and Verification
Guided network troubleshooting
Streaming databus to export information learned from the platform
Network Map topology visualization
Traffic path and redundant path analysis
NSX Day 2 ops (topology view, health checklist, edge load balance dashboard)
Public APIs to view and access network metrics
Usability large-screen support
VM and IP address network analysis
VMware Cloud Network Visibility
VMware Cloud on AWS network visibility connected to VMware Cloud Foundation
VMware Cloud on AWS Direct Connect network visibility connected to VMware Cloud Foundation
VMware Cloud on AWS Outposts network visibility connected to VMware Cloud Foundation

Azure VMware Solution network visibility connected to VMware Cloud Foundation
Azure flow collection for security groups for network visibility connected to VMware Cloud Foundation
Google Cloud VMware Engine network visibility connected to VMware Cloud Foundation
Oracle Cloud VMware Solution network visibility connected to VMware Cloud Foundation
End-to-End Network Visibility Adjacent to VMware Cloud Foundation Visibility across third-party switches, routers, firewalls and load balancers
Network device auto discovery
ServiceNow integration for app discovery, issue resolution email
Cisco Catalyst 9000 network map, VM-to-VM path, intent
Cisco Application Centric Infrastructure (ACI) with network assurance and verification support
Cisco BGP-EVPN underlay/overlay visibility
Arista BGP-EVPN underlay/overlay visibility
Juniper Ethernet VPN VM-to-VM path
DNS resolution with Infoblox

Learn more

[VCF Operations for Networks](#) [webpage](#)

[VMware Cloud Foundation webpage](#)

For more information or to purchase VMware products

Call 877-4-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 [VCF Operations for Networks documentation](#).

How to get started

VMware Cloud Foundation includes the offering VCF Operations for Networks.

VMware offers global support to all VCF Operations for networks customers. For customers requiring additional services, VMware also offers professional services engagements on best practices and getting started with your deployment, both directly and through an extensive network of certified professionals: vmware.com/services.

VCF Operations for Networks	
Application Discovery and Visibility	Application Discovery uses machine learning to categorize dynamic network traffic, enabling users to gain deeper insights into the applications running on VMware Cloud Foundation. Get insights into what VMs are part of an application by using machine learning to analyze traffic flow when working with VMware Cloud Foundation.
Private Cloud Networking	Accelerate your applications with network performance, traffic assessments and security planning.
Enhanced Troubleshooting	Proactively optimize your network with an advanced network monitoring tool to minimize application latency, improve performance, and increase reliability with guided network troubleshooting. Guided network troubleshooting uses machine learning to help users proactively root cause issues in their network infrastructure by visualizing all the inter-related variables in a topology tree. Views of baseline versus anomalies are also available to enhance troubleshooting.
Day 2 Network Operations	Validate and verify app centric network traffic/path, firewall and ACL health for apps, VMs, and containers on VMware Cloud Foundation.

Summary

VCF Operations for networks is the offering within VMware Cloud Foundation for network visibility and network troubleshooting:

Use the solution to run a pre-deployment assessment of the network environment to understand the applications and network traffic in your VCF environment. Also use the assessment to prepare for a future NSX deployment. Use the solution to run Application Discovery to understand the application environment and which VMs are communicating with other VMs. Use the solution in Day 2 operations for network topology and metrics visualization.

Please visit [VCF Operations for Networks - Network Monitoring Tool -](#) [VMware](#)