

# Project Calico Training

## *COURSE CONTENT*

### GET IN TOUCH



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## About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

## About Course

Project Calico Training by Multisoft Systems is designed to equip IT professionals, cloud engineers, DevOps specialists, and Kubernetes administrators with in-depth expertise in modern, scalable, and secure container networking. Calico is one of the most widely used networking and network security solutions for Kubernetes environments, offering high performance, flexible routing options, and advanced micro-segmentation capabilities.

## Module 1: Introduction to Project Calico

- ✓ Overview of Project Calico
- ✓ Key features and architecture
- ✓ Role of Calico in Kubernetes, OpenStack, and Docker
- ✓ Calico vs. Flannel / Weave / Cilium – comparative understanding
- ✓ Understanding Calico components: Felix, BGP, Typha, Calicoctl

## Module 2: Networking Fundamentals for Calico

- ✓ Basics of container networking
- ✓ Overlay vs. Layer-3 networking
- ✓ IP routing and CIDRs review
- ✓ Understanding BGP protocol and its importance
- ✓ Network policies: ingress and egress traffic

## Module 3: Calico Architecture Deep Dive

- ✓ Calico data plane and control plane
- ✓ Calico node architecture and workflow
- ✓ Understanding IP-in-IP, VXLAN, WireGuard
- ✓ Routing and distribution of workloads
- ✓ Datastore options: etcd vs. Kubernetes API

## Module 4: Installing and Configuring Calico

- ✓ Deployment prerequisites
- ✓ Installing Calico on Kubernetes clusters
- ✓ Installing Calico on Docker and Linux hosts
- ✓ Verifying installation and health checks
- ✓ Configuring Calicoctl for cluster administration

## Module 5: Calico Network Policies

- ✓ Introduction to Calico policies and GlobalNetworkPolicy
- ✓ Difference between Kubernetes NetworkPolicy & Calico NetworkPolicy
- ✓ Creating ingress and egress rules
- ✓ Layer 3, 4, and 7 policy filtering
- ✓ Policy enforcement for namespaces and workloads

## Module 6: IP Address Management (IPAM)

- ✓ Calico IPAM architecture
- ✓ Configuring IP pools
- ✓ Creating, editing, and deleting IPPool
- ✓ Multiple IP pools and subnet allocation strategies
- ✓ Troubleshooting IPAM issues

## Module 7: Calico BGP Configuration & Routing

- ✓ Introduction to BGP Peering
- ✓ Full mesh vs. route reflectors
- ✓ Configuring BGP on Calico nodes
- ✓ External BGP peering with routers
- ✓ Route advertisements and optimizations

## Module 8: Calico for Kubernetes

- ✓ Calico with Kubernetes CNI
- ✓ Understanding calico-kube-controllers
- ✓ Using Calico with AWS EKS, Azure AKS, and GKE
- ✓ Network security for Kubernetes workloads
- ✓ Troubleshooting cluster-wide network issues

## Module 9: Calico with OpenStack & Bare Metal

- ✓ Overview of Calico in OpenStack
- ✓ Network and tenant isolation
- ✓ Bare-metal workload connectivity
- ✓ Scalable networking strategies in hybrid environments

## Module 10: Calico Security Features

- ✓ Zero-trust micro-segmentation
- ✓ Role-based security enforcement
- ✓ Advanced network policies & threat mitigation
- ✓ WireGuard encryption setup
- ✓ Compliance & auditing with Calico Enterprise

## Module 11: Calico Monitoring & Troubleshooting

- ✓ Logs, metrics, and tracing
- ✓ Using calicoctl for diagnostics
- ✓ Debugging connectivity issues
- ✓ Packet capture & flow logging
- ✓ Common Calico errors and resolutions