AMBIENT-IT

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Updated on 02/17/2026

Register

Kiali training

2 days (14 hours)

Overview

Kiali is Istio's observability console for visualizing your service mesh, diagnosing flows, and securing exchanges. It helps you quickly understand the topology, detect errors, and validate policies (mTLS, routing, RBAC) in real conditions.

This training focuses on the operational use of Kiali to manage an Istio mesh: reading graphs, analyzing metrics, inspecting configurations, and investigating incidents (latency, 5xx, timeouts). You will learn how to link the symptoms observed in Kiali to Istio resources (VirtualService, DestinationRule, Gateway) and correct them without trial and error.

The approach is practical: guided demos, troubleshooting workshops, canary/traffic shifting scenarios, and mTLS hardening. Deliverables: a reproducible lab environment, a diagnostic checklist, and commands/best practices for using Kiali on a daily basis.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Install and configure Kiali in a Kubernetes cluster with Istio.
- Interpret the service graph and isolate critical dependencies.
- Diagnose errors, latency, and timeouts using metrics and traces.
- Validate and correct routing (canary, mirroring, retries, circuit breaking).
- Audit mesh security (mTLS, policies) and verify compliance.

Target audience

- DevOps/SRE Engineers
- Kubernetes Administrators
- Back-end developers in microservices environments
- Cloud architects

Prerequisites

- Good knowledge of Kubernetes (pods, services, ingress, namespaces)
- Basic knowledge of Istio (sidecars, gateways, VirtualService)
- Practical experience with the terminal and kubectl
- Understanding of HTTP/gRPC and error codes

Technical prerequisites

- PC with 16 GB RAM recommended (8 GB minimum)
- Linux, macOS, or Windows with WSL2
- Tools: kubectl, istioctl, Helm, a code editor
- Access to a Kubernetes cluster (local type kind/minikube or remote) with admin rights

Kiali Istio training program

[Day 1 - Morning]

Istio fundamentals and getting started with Kiali

- Service Mesh refresher: data plane, control plane, Envoy sidecar
- Key Istio components: istiod, injection, gateways, namespaces, and labels
- Kiali: role, prerequisites, access, concepts of Graph, Workloads, Services, Applications
- Reading metrics and dependencies: traffic, latency, errors, thresholds, and aggregations
- Hands-on workshop: Deploy Istio + Kiali on a cluster and validate sidecar injection.

[Day 1 - Afternoon]

Traffic observability and diagnostics with Kiali

- Generating application traffic and interpreting the Service Graph (edges, rates, protocols)
- Analyzing Kiali health checks: configuration, mTLS, Istio objects, warnings
- Correlation with Prometheus and Grafana: useful metrics (p95, 4xx/5xx, saturation)
- Workload inspection: logs, ports, labels, versioning, pods, and readiness
- Hands-on workshop: Diagnosing degradation (latency/errors) using the graph and metrics.

[Day 2 - Morning]

Istio traffic management (VirtualService, DestinationRule) via Kiali

- Routing objects: Gateway, VirtualService, DestinationRule, subsets, and versions
- Use cases: canary, blue/green, mirroring, rules by headers/cookies
- Kiali validation and linting: detection of inconsistencies, route conflicts, ports/protocols
- Visualizing the impact of rules: traffic evolution by version in the graph
- Hands-on workshop: Set up a 90/10 canary and then switch to 100% using Kiali.

[Day 2 - Afternoon]

Security, mTLS, and policies: control and verification with Kiali

- mTLS: PERMISSIVE/STRICT modes, PeerAuthentication, and DestinationRule
- Authorization: AuthorizationPolicy (principals, namespaces, paths, methods) and common scenarios
- Detecting security issues in Kiali: mTLS padlocks, warnings, missing objects
- Best practices for operation: scopes by namespace, label conventions, change auditing
- Hands-on workshop: Enable mTLS STRICT and apply an AuthorizationPolicy, then validate the result
  in Kiali.

Target companies

This training is intended for both individuals and companies, large or small, wishing to train their teams in a new advanced IT technology or to acquire specific business knowledge or modern methods.

Positioning at the start of training

The positioning at the start of the training complies with Qualiopi quality criteria. Upon final registration, the learner receives a self-assessment questionnaire that allows us to assess their estimated level of knowledge of different types of technologies, their expectations and personal objectives for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could be problematic for the monitoring and smooth running of the training session.

Teaching methods

Practical training: 60% practical, 40% theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the trainer, supported by examples and discussion sessions, and group work.

Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been correctly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training course.