DevOpsSchool

Course curriculum · November 2026

LEVEL 04 OF 04 · ADVANCED

Istio Advanced Training

Run Istio in production across clusters with safe upgrades, tuned performance, custom extensions and governance.

LIVE ONLINE Max 8-10 hours	**CORPORATE (DAY-WISE)** 5 days · Days 1-5	**SELF-PACED VIDEO** 1-year LMS access
BATCH SIZE Max 10 learners	**NEXT BATCHES** 1st of every month · weekends: first Saturday	**CERTIFICATE** Verifiable certificate of completion

Foundation	Essential	Intermediate	Advanced
1 day · Included	2 days · Included	3 days · Included	5 days · This curriculum

INSIDE THIS CURRICULUM

What you will achieve	Outcomes and level focus
Who should attend	Audience and prerequisites
Agenda	46 topics · Foundation to Advanced
Hands-on labs	4 labs
Formats and fees	Live, 1:1, self-paced, corporate
Trainer and reviews	Rajesh Kumar
Enrolment	Batches, payment, contacts

WHY DEVOPSSCHOOL

- Rated 4.6 on Google
- 1,500+ verifiable certificates issued in the public registry
- Trainer Rajesh Kumar: 20 years in industry
- Small batches: max 10 learners, every session recorded

Course page: www.devopsschool.com/courses/istio/istio-advance-training.html
Talk to us: WhatsApp +91 99057 40781 · +1 (469) 756-6329 · contact@DevOpsSchool.com · reply within 1 hour

OUTCOMES

What you will achieve

By the end of the Istio course path, you will be able to:

1

Control service traffic

Route, shift, mirror and protect traffic between microservices with Istio.

2

Secure microservices by default

Apply mTLS, authorization and JWT authentication to build zero-trust service communication.

3

Operate meshes at scale

Observe, troubleshoot, upgrade and extend Istio across multiple clusters in production.

WHAT THE ADVANCED LEVEL ADDS

Multicluster, upgrades, performance and extensibility

Hands-on: Multicluster mesh in production. Join two clusters into one mesh with failover, perform a revision-based Istio upgrade and drive canary releases from Git with Argo Rollouts.

WHO SHOULD ATTEND

- Experienced Istio practitioners responsible for quality, security and scale.
- Senior engineers, architects and leads who design and troubleshoot Istio solutions.
- Teams making Istio an organisation-wide standard.

BEFORE YOU START

- The Intermediate level, or equivalent hands-on experience.
- You can already: Secure service-to-service traffic with mTLS and authorization policies, authenticate end users and troubleshoot the mesh.
- Basic computer skills and a laptop with a stable internet connection for the live sessions and labs.
- This curriculum includes every earlier level, so it is complete on its own.

AGENDA · FOUNDATION TO ADVANCED

Istio Advanced Training agenda

46 topics. Each level builds on the one before it, so this curriculum lists every earlier level in full. Days are for corporate (day-wise) delivery; live online batches cover the same agenda in max 8-10 hours.

DAY 1 — Foundation: Service mesh concepts, architecture and installation

Included from Foundation

1. Service mesh concepts: microservice networking challenges and what a mesh adds
2. Istio overview: a CNCF graduated mesh, its features and how it compares with Linkerd
3. Istio architecture: istiod control plane, Envoy proxies and the xDS configuration flow
4. Data plane modes: sidecar mode versus ambient mode with ztunnel and waypoint proxies
5. Prerequisites: a Kubernetes cluster with kind, minikube or a managed service and kubectl
6. Installing Istio: istioctl install with profiles, Helm charts and verifying with istioctl verify-install
7. Sidecar injection: namespace labels, automatic and manual injection and pod changes
8. Ambient enrolment: labelling namespaces for ambient mode and checking ztunnel
9. Bookinfo demo application: deploying it and exploring its services
10. Ingress: exposing an application with the Kubernetes Gateway API and Istio Gateway
11. First look at observability: installing Kiali, Prometheus and Grafana add-ons

DAY 2 — Essential: Traffic management, resilience and observability

Included from Essential

12. VirtualService: host and path matching, header-based routing and rewrites
13. DestinationRule: subsets, load balancing policies and connection pool settings
14. Gateway API routing: HTTPRoute and GRPCRoute with Istio as the implementation
15. Traffic shifting: weighted canary releases and blue-green switching
16. Resilience: timeouts, retries and retry budgets
17. Circuit breaking and outlier detection: limits and ejecting unhealthy endpoints
18. Fault injection: delays and aborts for resilience testing
19. Traffic mirroring: shadowing live traffic to a new version
20. Egress control: ServiceEntry, outbound traffic policy and egress gateways
21. Metrics: Istio standard metrics in Prometheus and Grafana dashboards
22. Distributed tracing: trace propagation headers and Jaeger or Tempo integration
23. Access logs and the Telemetry API: configuring logging and metrics per workload

DAY 3 — Intermediate: Security, authorization and troubleshooting

Included from Intermediate

24. Workload identity: SPIFFE identities, service accounts and Istio certificate issuance
25. Mutual TLS: PeerAuthentication in permissive and strict modes and migrating to strict
26. AuthorizationPolicy: ALLOW, DENY and CUSTOM actions, sources, operations and conditions
27. End-user authentication: RequestAuthentication with JWT validation and claims-based authorization
28. External authorization: integrating OPA or an external authorizer with CUSTOM policies
29. Ingress TLS: gateway certificates with cert-manager and SDS
30. Ambient security: L4 policies in ztunnel and L7 policies in waypoint proxies

31. Troubleshooting with istioctl: analyze, proxy-status, proxy-config and describe
32. Envoy debugging: admin interface, config dumps, log levels and response flags
33. Common issues: protocol detection, port naming, 503 errors and mTLS conflicts
34. Sidecar resource: limiting configuration scope to reduce proxy memory

DAYS 4-5 **Advanced: Multicluster, upgrades, performance and extensibility** **New at this level**

35. Multicluster topologies: primary-remote and multi-primary on single or multiple networks
36. East-west gateways: cross-cluster service discovery, failover and locality load balancing
37. Certificate management: plug-in CA certificates, external CAs and integration with cert-manager istio-csr
38. Upgrades: revision-based canary upgrades, revision tags and in-place upgrades
39. Performance tuning: proxy resources, concurrency, discovery selectors and control plane scaling
40. Extensibility: Wasm plugins, EnvoyFilter use and risks and Lua filters
41. Progressive delivery: Argo Rollouts or Flagger with Istio traffic routing
42. GitOps for mesh config: managing Istio resources with Argo CD or Flux and validation in CI
43. Migrating from sidecar to ambient mode: planning, coexistence and rollback
44. Production readiness: high availability for istiod and gateways, PodDisruptionBudgets and monitoring
45. Governance: namespace isolation, mesh-wide defaults, policy standards and audit
46. Capstone: a secure, observable multicluster mesh with canary delivery and automated upgrades

PRACTICE

Hands-on labs

You build these yourself during the course, guided by the trainer.

FOUNDATION **Install Istio and mesh an app**
Install Istio on a kind cluster, enable sidecar injection, deploy the Bookinfo application, expose it through a gateway and view it in Kiali.

ESSENTIAL **Canary release with resilience testing**
Shift traffic gradually to a new version, add retries, timeouts and circuit breaking, inject faults and observe the impact in Grafana and traces.

INTERMEDIATE **Zero-trust security for a mesh**
Enforce strict mTLS, add deny-by-default authorization policies and JWT authentication at the gateway, then debug a blocked request with istioctl.

ADVANCED **Multicluster mesh in production**
Join two clusters into one mesh with failover, perform a revision-based Istio upgrade and drive canary releases from Git with Argo Rollouts.

HOW YOU CAN LEARN

Formats and fees

The same agenda in four formats. Fees are in Indian rupees as of November 2026; the course page shows them in your currency.

FORMAT	DURATION	WHAT YOU GET	FEE
Live & interactive (online)	Max 8-10 hours	Instructor-led public batch of max 10 learners with demos, labs, Q&A and assignment review. Weekday batches start on the 1st of every month, weekend batches on the first Saturday of every month.	**INR 34,999**
1:1 live training (online)	Max 8-10 hours, one-to-one	The same agenda, taught one-to-one by the trainer. Starts immediately, without waiting for the next batch; sessions planned around your working hours, at your pace.	**INR 99,999**
Self-paced video	1-year LMS access	All four Istio levels, plus 20+ more courses and 50+ tools, at your own pace.	**INR 833/month** billed yearly at INR 9,996
Corporate (day-wise)	5 days for this level	A private batch for your team, on demand. Foundation 1 day, Essential 2, Intermediate 3, Advanced 5 (cumulative).	**Quote on request**

ASSESSMENT AND CERTIFICATE

Your progress is checked through hands-on labs and assignments at every level. On completion you receive a DevOpsSchool certificate of completion with a unique credential ID that anyone can verify at devopsschool.com/certificates.

INCLUDED WITH EVERY LIVE BATCH

- Every live session is recorded and stays in your LMS for a year.
- Can't attend your batch? Move to next month's batch.
- Free demo class before you pay.
- Free 10-15 minute call with an advisor or the trainer to check the course fits you.

YOUR TRAINER

Learn from Rajesh Kumar

Principal Architect, trainer and mentor in DevOps, SRE, DevSecOps and platform engineering, with 20 years across 8+ software MNCs, including Staff DevOps/SRE Engineer for a leading Japanese mobile-payment platform and Principal DevOps Architect and Manager in Europe.

Profile: www.rajeshkumar.xyz · Videos: youtube.com/@TheDevOpsSchool

20 years in industry	**200+** corporate trainings
10,000+ engineers mentored	**70+** organisations coached

REVIEWS

What learners say

Rated 4.6 on Google · more reviews at devopsschool.com/testimonials and in our video testimonials.

> “Rajesh is very good trainer. Rajesh was able to resolve our queries and question effectively. We really liked the hands-on examples covered during this training program.”
>
> Indrayani, India

> “The training was very useful and interactive. Rajesh helped develop the confidence of all.”
>
> Abhinav Gupta, Pune

START YOUR ISTIO TRAINING

Join the next batch

Weekday batches start on the 1st of every month and weekend batches on the first Saturday of every month, with max 10 learners each. 1:1 training can start immediately; corporate batches run on demand. We reply within 1 hour.

Pay by UPI, credit and debit cards, net banking or PayPal. Before you pay, read our refund policy. All levels of this course: www.devopsschool.com/courses/istio/

ENROL OR RESERVE A SEAT
Istio Advanced Training

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