DevOpsSchool

Course curriculum · November 2026

LEVEL 04 OF 04 · ADVANCED

Kubeedge Advanced Training

Design and govern large KubeEdge fleets with edge AI, resilient networking, hardening and disaster recovery.

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	47 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/kubeedge/kubeedge-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 Kubeedge course path, you will be able to:

1

Extend Kubernetes to edge

Install KubeEdge and run containerised workloads reliably on remote edge nodes.

2

Manage edge devices

Model, connect and control IoT devices through KubeEdge mappers and device twins.

3

Operate edge fleets

Secure, upgrade, monitor and scale KubeEdge across many sites, including edge AI.

WHAT THE ADVANCED LEVEL ADDS

Scale, edge AI, resilience and fleet governance

Hands-on: Deploy edge AI inference across sites. Run a Sedna joint inference service across two edge sites and the cloud, test failover during link loss and document the fleet runbook.

WHO SHOULD ATTEND

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

BEFORE YOU START

- The Intermediate level, or equivalent hands-on experience.
- You can already: Roll out workloads per site, secure cloud-edge traffic, upgrade nodes and troubleshoot KubeEdge clusters.
- 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

Kubeedge Advanced Training agenda

47 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: Edge computing concepts, architecture and installation

Included from Foundation

1. Edge computing: latency, bandwidth and offline needs, and why extend Kubernetes to the edge
2. KubeEdge overview: a CNCF graduated project for running containerised apps and devices at the edge
3. Architecture: CloudCore in the cluster and EdgeCore on edge nodes, connected over WebSocket or QUIC
4. CloudCore modules: CloudHub, EdgeController, DeviceController and SyncController
5. EdgeCore modules: EdgeHub, Edged, MetaManager, DeviceTwin, EventBus and ServiceBus
6. Prerequisites: a Kubernetes cluster, containerd on edge nodes and amd64 or arm64 hardware
7. keadm on the cloud side: keadm init and keadm gettoken
8. Joining an edge node: keadm join with --cloudcore-ipport and a token, then checking node status
9. First edge workload: deploying nginx to edge nodes with a nodeSelector
10. Edge autonomy: MetaManager stores metadata locally so pods keep running while offline
11. Configuration files: cloudcore.yaml and edgecore.yaml basics

DAY 2 Essential: Edge workloads, devices and networking

Included from Essential

12. Scheduling to the edge: labels, taints and tolerations for edge nodes
13. Edge configuration: ConfigMaps and Secrets synced to edge nodes
14. Device management: DeviceModel and Device resources, properties and device twins
15. Mappers: protocol mappers for Modbus, OPC-UA and Bluetooth, and the Device Management Interface (DMI)
16. MQTT messaging: EventBus with an MQTT broker such as Mosquitto for device messages
17. EdgeMesh: service discovery and traffic between edge and cloud services
18. Cloud-edge tunnel: CloudStream and EdgeStream for kubectl logs and kubectl exec on edge pods
19. Edge metrics: metrics-server for edge nodes through the tunnel
20. Router: Rule and RuleEndpoint resources for messages between cloud, edge and REST endpoints
21. Edge node lifecycle: keadm reset, re-joining and node status during disconnection
22. Component logs: CloudCore and EdgeCore status with journalctl and kubectl
23. Container runtimes: containerd, CRI-O and lightweight images for constrained devices

DAY 3 Intermediate: Node groups, security, upgrades and troubleshooting

Included from Intermediate

24. NodeGroup and EdgeApplication: deploying workloads per site with per-group overrides
25. MetaServer: a local Kubernetes API endpoint for edge pods that list and watch resources
26. Security basics: CloudCore certificates, token handling and TLS between cloud and edge
27. Edge access control: limiting what edge nodes and mappers can reach
28. CloudCore high availability: multiple replicas and exposing CloudHub through a LoadBalancer or NodePort
29. Upgrading: keadm upgrade, NodeUpgradeJob for batch edge upgrades and version skew rules
30. Image pre-pull: ImagePrePullJob to load images onto edge nodes before rollout

31. Monitoring: Prometheus scraping of edge nodes and alerts on edge nodes going offline
32. GitOps for edge: delivering edge workloads with Argo CD or Flux
33. Troubleshooting: edge nodes NotReady, certificate errors, CloudHub connection issues and edgecore logs
34. Device data pipelines: forwarding device data from mappers to databases or streams
35. Constrained devices: tuning edgecore for low memory and limiting pod resources

DAYS 4-5 **Advanced: Scale, edge AI, resilience and fleet governance** **New at this level**

36. Scaling: CloudCore capacity, connection limits and managing large numbers of edge nodes
37. Edge AI with Sedna: joint inference, incremental learning and federated learning
38. Benchmarking edge AI: Ianvs for edge-cloud collaborative AI testing
39. Network resilience: QUIC transport, intermittent connectivity and message reliability
40. Security hardening: certificate lifecycle, minimal edge OS images and physical access risks
41. Hybrid deployments: KubeEdge with managed cloud control planes and on-premises clusters
42. Fleet governance: site inventory, labelling standards and staged rollouts across regions
43. Disaster recovery: backing up etcd and CloudCore configuration and recovering sites after outages
44. Industrial IoT patterns: digital twins, OPC-UA integration and data residency at the edge
45. Comparing edge platforms: KubeEdge vs K3s, OpenYurt and SuperEdge
46. Observability at scale: aggregated logs and metrics from many low-bandwidth sites
47. Capstone: design a multi-site edge platform with devices, AI inference and a highly available cloud side

PRACTICE

Hands-on labs

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

FOUNDATION **Join an edge node to Kubernetes**
Install CloudCore with keadm, join a Raspberry Pi or VM as an edge node and run a workload that survives a network disconnect.

ESSENTIAL **Connect a simulated device with a mapper**
Define a DeviceModel and Device for a simulated Modbus sensor, run its mapper on an edge node and read the twin values from the cloud.

INTERMEDIATE **Run a multi-site edge rollout**
Group edge nodes by site with NodeGroups, roll out an EdgeApplication with site-specific settings and upgrade the nodes with a NodeUpgradeJob.

ADVANCED **Deploy edge AI inference across sites**
Run a Sedna joint inference service across two edge sites and the cloud, test failover during link loss and document the fleet runbook.

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 Kubeedge 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 KUBEEDGE 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/kubeedge/

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Kubeedge Advanced Training

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