DevOpsSchool

Course curriculum · November 2026

LEVEL 04 OF 04 · ADVANCED

Longhorn Advanced Training

Run Longhorn in production at scale with tuned performance, resilient topology, system backups and governed operations.

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/longhorn/longhorn-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 Longhorn course path, you will be able to:

1

Provide persistent Kubernetes storage

Install Longhorn and serve replicated block and shared volumes to stateful workloads.

2

Protect application data

Use snapshots, backups, recurring jobs and DR volumes to recover from failures and data loss.

3

Operate storage in production

Tune, monitor, secure and troubleshoot Longhorn across nodes, zones and clusters.

WHAT THE ADVANCED LEVEL ADDS

Production design, performance and operations at scale

Hands-on: Production storage platform capstone. Design and deploy a zone-aware, encrypted and monitored Longhorn platform with recurring backups, DR and tested runbooks.

WHO SHOULD ATTEND

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

BEFORE YOU START

- The Intermediate level, or equivalent hands-on experience.
- You can already: Set up disaster recovery, integrate Longhorn deeply with Kubernetes and troubleshoot volumes, replicas and nodes.
- 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

Longhorn 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: Container storage challenges, architecture and installation

Included from Foundation

1. Introduction to Longhorn: the challenges of managing storage in containerized environments and where Longhorn fits
2. Kubernetes storage primer: PersistentVolumes, PersistentVolumeClaims, StorageClasses and CSI drivers
3. Understanding the architecture of Longhorn: longhorn-manager, engine, replicas, instance managers and the CSI plugin
4. Data path basics: block devices per volume, synchronous replication and replica placement across nodes
5. Node prerequisites: open-iscsi, NFSv4 client, supported kernels and the longhornctl preflight check
6. Installing and configuring Longhorn: Helm chart, kubectl manifest or Rancher Apps
7. Longhorn UI: accessing the dashboard, nodes, disks, volumes and settings views
8. Default StorageClass: numberOfReplicas, reclaim policy and allowVolumeExpansion
9. First volume: a PVC for a StatefulSet database and checking replicas and health in the UI
10. Uninstalling Longhorn safely: the deletion confirmation setting and cleaning up resources

DAY 2 — Essential: Volume management, snapshots and backups

Included from Essential

11. Creating and managing volumes with Longhorn: UI and PVC-driven provisioning, attach and detach
12. Volume access modes: ReadWriteOnce volumes and ReadWriteMany through the share manager (NFS)
13. Volume expansion: online expansion through the PVC and filesystem resize
14. Snapshotting volumes with Longhorn: manual snapshots, snapshot chains and reverting a volume
15. Kubernetes CSI snapshots: VolumeSnapshotClass and VolumeSnapshot objects backed by Longhorn
16. Backup targets: configuring S3-compatible object storage or NFS and credentials secrets
17. Backing up volumes with Longhorn: incremental backups, backup volumes and restoring to a new volume
18. Recurring jobs: scheduled snapshots and backups with retention, groups and labels
19. Custom StorageClasses: replica count, data locality and disk or node selectors
20. Node and disk management: adding disks, tags, scheduling and eviction
21. Backing images: preparing base images for volumes and VM workloads
22. Everyday checks: volume health states, degraded volumes and replica rebuilding

DAY 3 — Intermediate: Disaster recovery, Kubernetes integration and troubleshooting

Included from Intermediate

23. Disaster recovery with Longhorn: DR volumes, standby restore from backups and activation in a second cluster
24. Integrating Longhorn with Kubernetes: CSI features, volume attachment, StatefulSets and Pod scheduling
25. Node failure handling: pod deletion policy when node is down, volume attachment recovery and replica rebuild
26. Kubernetes upgrades and node drains: node drain policy and replica protection during maintenance
27. Replica auto-balance and data locality: best-effort and strict-local modes
28. Scheduling safeguards: storage over-provisioning percentage and storage minimal available percentage settings

29. Volume encryption: encrypted StorageClasses with LUKS and Kubernetes secrets
30. Monitoring Longhorn: Prometheus metrics, ServiceMonitor, Grafana dashboards and alert rules
31. Upgrading Longhorn: supported upgrade paths, engine upgrades and live engine upgrades
32. Troubleshooting and problem-solving with Longhorn: faulted volumes, stuck attachments and iSCSI issues
33. Support bundles and logs: generating a support bundle and reading manager and instance manager logs
34. Access control: securing the UI with ingress authentication and RBAC for Longhorn resources

DAYS 4-5 **Advanced: Production design, performance and operations at scale** **New at this level**

35. Best practices for using Longhorn in production environments: dedicated disks, node roles and resource reservations
36. Topology design: zone-aware replica placement, anti-affinity and multi-zone clusters
37. Performance tuning: replica count, data locality, network bandwidth, storage network and benchmarking with fio
38. Data engines: the V1 engine and the SPDK-based V2 data engine, its status and hardware requirements
39. System backup and restore: backing up Longhorn resources and restoring a whole cluster's storage
40. Capacity planning: sizing disks, snapshot space, over-provisioning ratios and growth alerts
41. High availability operations: maintenance windows, rolling node replacement and evacuation
42. Security hardening: encrypted volumes and backups, restricted UI exposure and least-privilege service accounts
43. Multi-cluster management: Longhorn with Rancher, GitOps with Argo CD or Flux and consistent settings
44. Migration: moving workloads from hostPath, local-path or cloud volumes to Longhorn and back
45. Hands-on exercises and real-world scenarios: database, message queue and VM workloads on Longhorn
46. Capstone: a production-ready Longhorn platform with DR, monitoring, encryption and runbooks

PRACTICE

Hands-on labs

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

FOUNDATION **Install Longhorn and attach storage**
Install Longhorn with Helm on a three-node cluster and run a MySQL StatefulSet on a replicated Longhorn volume.

ESSENTIAL **Snapshot, back up and restore**
Configure an S3 backup target, schedule recurring snapshots and backups, then restore a database volume after data loss.

INTERMEDIATE **Cross-cluster disaster recovery drill**
Build a DR volume in a second cluster from shared backups, simulate a primary failure and fail the application over.

ADVANCED **Production storage platform capstone**
Design and deploy a zone-aware, encrypted and monitored Longhorn platform with recurring backups, DR and tested runbooks.

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 Longhorn 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 LONGHORN 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/longhorn/

ENROL OR RESERVE A SEAT
Longhorn Advanced Training

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