DevOpsSchool

Course curriculum · November 2026

LEVEL 03 OF 04 · INTERMEDIATE

# Tikv Intermediate Training

Operate TiKV day to day: scale nodes, tune scheduling, back up and restore data, enable TLS and troubleshoot hot spots.

| | | |
|---|---|---|
| LIVE ONLINE<br>**Max 8-10 hours** | CORPORATE (DAY-WISE)<br>**3 days · Days 1-3** | SELF-PACED VIDEO<br>**1-year LMS access** |
| BATCH SIZE<br>**Max 10 learners** | NEXT BATCHES<br>**1st of every month · weekends: first Saturday** | CERTIFICATE<br>**Verifiable certificate of completion** |

| Foundation | Essential | Intermediate | Advanced |
|---|---|---|---|
| 1 day · Included | 2 days · Included | 3 days · This curriculum | 5 days · Next step |

## INSIDE THIS CURRICULUM


| | |
|---|---|
| What you will achieve | Outcomes and level focus |
| Who should attend | Audience and prerequisites |
| Agenda | 35 topics · Foundation to Intermediate |
| Hands-on labs | 3 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/tikv/tikv-intermediate-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 Tikv course path, you will be able to:

1

### Understand TiKV internals

Explain regions, Raft replication, MVCC and Percolator transactions and how they shape application design.

2

### Deploy and operate clusters

Deploy, scale, upgrade, secure and back up TiKV clusters with TiUP, BR and TiDB Operator.

3

### Run TiKV at scale

Design multi-zone topologies, tune performance and recover from failures with tested runbooks.

WHAT THE INTERMEDIATE LEVEL ADDS

### Operations, scheduling, backup and security

**Hands-on:** Scale, back up and recover TiKV. Scale a cluster from three to five TiKV nodes, take a BR backup to S3-compatible storage, simulate a store failure and restore service.

WHO SHOULD ATTEND

- Regular Tikv users who want to automate, integrate and manage it at a deeper level.
- Specialists who support Tikv for colleagues or customers.
- Leads preparing Tikv for wider use across projects.

BEFORE YOU START

- The Essential level, or equivalent hands-on experience.
- You can already: Deploy a multi-node TiKV cluster with TiUP and build applications that use transactions, TTL and range scans correctly.
- 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 INTERMEDIATE

# Tikv Intermediate Training agenda

35 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: Distributed key-value concepts, architecture and first cluster

Included from Foundation

1. What TiKV is: a CNCF graduated distributed transactional key-value database and its relationship to TiDB
2. Use cases: metadata stores, large-scale key-value workloads and the storage layer under TiDB
3. Architecture: TiKV nodes, Placement Driver (PD), regions, peers and the timestamp oracle
4. Raft consensus: leaders, followers, log replication and why three replicas tolerate one failure
5. Storage engine: RocksDB, column families and Raft Engine for the Raft log
6. Data model: ordered byte keys, region splitting by key range and region size
7. Raw KV versus transactional KV: API differences and when to choose each
8. Installing with TiUP: tiup playground for a local cluster and checking component status
9. First reads and writes: put, get, scan and delete with the Go, Rust, Java or Python client
10. Cluster inspection: pd-ctl store and region commands and the TiKV dashboard pages in Grafana
11. Configuration basics: tikv.toml and pd.toml structure and the most important defaults

## DAY 2 — Essential: Transactions, client development and production deployment

Included from Essential

12. MVCC: multi-version keys, timestamps from PD and snapshot reads
13. Percolator transactions: two-phase commit, primary keys, locks and write conflicts
14. Optimistic and pessimistic transactions: behaviour, retries and choosing a mode
15. Async commit and one-phase commit: how they cut transaction latency
16. Client usage: connection to PD, batch get and put, reverse scans and key encoding conventions
17. TTL and atomic operations: expiring keys and compare-and-swap in Raw KV
18. Topology planning: hardware sizing, SSD requirements, labels for zones and hosts
19. Production deployment: tiup cluster topology files, deploy, start, display and check commands
20. Replica placement: max-replicas, location labels and isolation levels in PD
21. Monitoring stack: Prometheus, Grafana and Alertmanager deployed by TiUP and the key TiKV panels
22. Logs and diagnostics: TiKV and PD log files, slow query signals and common error messages
23. Rolling configuration changes: tiup cluster edit-config and reload without downtime

## DAY 3 — Intermediate: Operations, scheduling, backup and security

New at this level

24. Scaling out and in: tiup cluster scale-out and scale-in and draining stores safely
25. PD scheduling: balance-leader, balance-region and hot-region schedulers and their limits
26. Placement Rules: controlling replica counts, roles and locations per key range
27. Hot spot troubleshooting: identifying hot regions, splitting regions and key design fixes
28. Backup and restore: BR full and incremental backups to S3-compatible storage and point-in-time recovery
29. Change data capture: TiKV CDC and streaming changes to downstream systems
30. Security: TLS between clients, PD and TiKV, certificate rotation and encryption at rest

31. Upgrades: tiup cluster upgrade, version compatibility and rolling restart behaviour
32. Store failure handling: down and offline stores, replica repair and tikv-ctl recovery tools
33. Performance tuning: block cache, write buffers, compaction settings and thread pools
34. Running on Kubernetes: TiDB Operator, TidbCluster resources and persistent volumes
35. Benchmarking: go-ycsb workloads and reading latency and throughput results

PRACTICE

## Hands-on labs

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

FOUNDATION

**Start TiKV and store your first keys**

Launch a local PD and three-node TiKV cluster with tiup playground, write and scan keys from a client program and inspect region placement with pd-ctl.

ESSENTIAL

**Deploy a three-host TiKV cluster**

Write a TiUP topology file, deploy PD, TiKV and monitoring to three hosts and run a transactional client workload while watching Grafana.

INTERMEDIATE

**Scale, back up and recover TiKV**

Scale a cluster from three to five TiKV nodes, take a BR backup to S3-compatible storage, simulate a store failure and restore service.

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 Tikv levels, plus 20+ more courses and 50+ tools, at your own pace. | **INR 833/month** billed yearly at INR 9,996 |
| **Corporate (day-wise)** | 3 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 TIKV 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/tikv/

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**Tikv Intermediate Training**

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**Next step after this level: Tikv Advanced Training** - Design resilient, multi-region TiKV deployments, tune them for heavy workloads and run them under clear operational governance.