DevOpsSchool

Course curriculum · November 2026

LEVEL 02 OF 04 · ESSENTIAL

# Tuf Essential Training

Create a TUF repository, sign metadata with the python-tuf Metadata API and build a client that safely fetches updates.

| | | |
|---|---|---|
| LIVE ONLINE<br>**Max 8-10 hours** | CORPORATE (DAY-WISE)<br>**2 days · Days 1-2** | 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 · This curriculum | 3 days · Next step | 5 days · Later |

## INSIDE THIS CURRICULUM


| | |
|---|---|
| What you will achieve | Outcomes and level focus |
| Who should attend | Audience and prerequisites |
| Agenda | 22 topics · Foundation to Essential |
| Hands-on labs | 2 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/tuf/tuf-essential-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 Tuf course path, you will be able to:

1

### Understand update security

Explain TUF roles, metadata and the attacks they prevent in software distribution.

2

### Build TUF repositories

Create, sign, publish and consume TUF metadata with python-tuf and other implementations.

3

### Operate TUF safely

Manage keys, delegations, rotation and compromise recovery for production update systems.

WHAT THE ESSENTIAL LEVEL ADDS

### Building repositories and clients with python-tuf

**Hands-on:** Publish and consume a signed update. Build a small TUF repository with python-tuf, publish a new version of an artifact and use ngclient to download and verify it.

WHO SHOULD ATTEND

- Learners who know the basics of Tuf and want to use it confidently every day.
- Professionals taking over Tuf work on a live project.
- Teams agreeing on a common way of working with Tuf.

BEFORE YOU START

- The Foundation level, or equivalent hands-on experience.
- You can already: Explain the attacks TUF defends against, describe its roles and metadata and inspect a working TUF repository.
- 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 ESSENTIAL

# Tuf Essential Training agenda

22 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: Software update security and TUF roles

Included from Foundation

1. Software update risks: compromised repositories, mirrors and signing keys in real supply chain incidents
2. What TUF is: The Update Framework specification, CNCF graduated project and its design goals
3. Attacks addressed: arbitrary software, rollback, freeze, mix-and-match, endless data and fast-forward attacks
4. Top-level roles: root, targets, snapshot and timestamp and what each one signs
5. Metadata files: root.json, targets.json, snapshot.json and timestamp.json structure and fields
6. Signatures and thresholds: multiple keys per role and why thresholds limit key compromise
7. Expiration and versioning: expiry dates, version numbers and how clients detect stale data
8. Client workflow: the update steps from trusted root to downloading and verifying a target
9. Where TUF is used: Sigstore root of trust, PyPI PEP 458, Notary v1 and Uptane for vehicles
10. Tool setup: python-tuf install and project layout in a Python virtual environment
11. First look: reading a public TUF repository's metadata and verifying signatures by hand

## DAY 2 — Essential: Building repositories and clients with python-tuf

**New at this level**

12. Metadata API: creating and editing Root, Targets, Snapshot and Timestamp objects with python-tuf
13. Key generation: Ed25519 and ECDSA keys, key IDs and securesystemslib signers
14. Building a repository: adding targets, hashing files, signing and writing metadata to disk
15. Consistent snapshots: hash-prefixed target and versioned metadata file names
16. Publishing: serving metadata and targets over HTTPS from a static web server or object storage
17. ngclient: configuring the Updater, local metadata cache and trusted root bootstrap
18. Downloading targets: get_targetinfo, download_target and integrity checks
19. Refreshing metadata: timestamp and snapshot refresh cadence and handling expired metadata
20. Delegations basics: delegating target paths from the targets role to team roles
21. Error handling: bad signatures, rollback detection and expired metadata exceptions
22. Other implementations: go-tuf, rust-tuf and tough and how they interoperate

PRACTICE

# Hands-on labs

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

FOUNDATION

**Inspect and verify TUF metadata**

Download metadata from a public TUF repository, decode each role file and trace how the client verifies a target from the trusted root.

ESSENTIAL

**Publish and consume a signed update**

Build a small TUF repository with python-tuf, publish a new version of an artifact and use ngclient to download and verify it.

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 Tuf levels, plus 20+ more courses and 50+ tools, at your own pace. | **INR 833/month** billed yearly at INR 9,996 |
| **Corporate (day-wise)** | 2 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 TUF 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/tuf/

ENROL OR RESERVE A SEAT
**Tuf Essential Training**

WHATSAPP · INDIA
**+91 99057 40781**

WHATSAPP · USA
**+1 (469) 756-6329**

EMAIL
**contact@DevOpsSchool.com**

**Next step after this level: Tuf Intermediate Training** - Manage TUF keys and delegations safely, automate signing in CI and rotate keys without breaking clients.