DevOpsSchool

Course curriculum · November 2026

LEVEL 04 OF 04 · ADVANCED

# Apache Tomcat Server Advanced Training

Build highly available Tomcat clusters with session replication, harden them to benchmark level and plan version migrations.

| | | |
|---|---|---|
| LIVE ONLINE<br>**Max 8-10 hours** | CORPORATE (DAY-WISE)<br>**5 days · Days 1-5** | 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 · 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/tomcat/apache-tomcat-server-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 Apache Tomcat Server course path, you will be able to:

1

### Install and configure Tomcat

Install, configure and deploy applications on Apache Tomcat on Windows and Linux.

2

### Secure and tune servers

Enable SSL, virtual hosts and realms, harden the server and tune threads and memory for production load.

3

### Deliver high availability

Run load-balanced, clustered Tomcat with sticky sessions and session replication.

WHAT THE ADVANCED LEVEL ADDS

### Clustering, session replication, hardening and migration

**Hands-on:** Capstone: highly available Tomcat cluster. Build a three-node Tomcat cluster with session replication behind Nginx, kill a node during a user session and show the session survives.

WHO SHOULD ATTEND

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

BEFORE YOU START

- The Intermediate level, or equivalent hands-on experience.
- You can already: Tune Tomcat threads and memory, read its logs, put Nginx in front for load balancing and automate deployments.
- 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

# Apache Tomcat Server 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: Servlet container concepts, installation and Manager app

Included from Foundation

1. Overview of servlet containers: Servlets, JSP, Jakarta EE and how Tomcat differs from full application servers
2. Tomcat versions: 9.0 (Java EE 8), 10.1 (Jakarta EE 10) and 11.0 (Jakarta EE 11) and their Java requirements
3. Architecture: Server, Service, Connector, Engine, Host and Context components and request flow
4. Setup requirements: choosing a JDK, JAVA_HOME, CATALINA_HOME and CATALINA_BASE
5. Installation on Windows: service installer and zip distribution, service.bat and the Tomcat monitor
6. Installation on Linux: binary tarball, dedicated tomcat user, file permissions and a systemd unit
7. Configuration files and binaries walkthrough: server.xml, web.xml, context.xml, tomcat-users.xml and bin scripts
8. Directory layout: bin, conf, lib, logs, webapps, work and temp and what belongs in each
9. Starting and stopping: startup and shutdown scripts, catalina.sh run and JVM options in setenv
10. Tomcat Manager application: manager-gui and manager-script roles and deploying, reloading and undeploying apps
11. First deployment: dropping a WAR into webapps, context paths and checking catalina and localhost logs

## DAY 2 — Essential: Security basics, SSL and virtual hosts

Included from Essential

12. Security basics: removing default apps, restricting Manager with RemoteAddrValve, shutdown port and server banner
13. Realms and authentication: UserDatabaseRealm, DataSourceRealm, JNDIRealm and LockOutRealm
14. Enabling SSL: creating a keystore with keytool and configuring a security certificate for a website
15. Enabling SSL part 2: PEM keys and certificate chains, SSLHostConfig, TLS protocols and cipher choices
16. SSL configuration on Linux: CA-issued or Let's Encrypt certificates, file permissions and HTTP to HTTPS redirects
17. Connectors: HTTP/1.1 NIO and NIO2, HTTP/2 upgrade and AJP with secretRequired
18. Virtual host overview: the Host element, appBase, aliases and name-based hosting
19. Virtual hosts in shared web hosting: multiple sites on Windows with separate appBase, logs and Manager
20. Virtual hosts on Linux: per-host directories, ownership and testing with DNS or hosts entries
21. Context configuration: context.xml, docBase, reloadable and parallel deployment with versioned WAR names
22. JNDI data sources: JDBC connection pool settings in context.xml and testing connectivity
23. Access logging: AccessLogValve patterns per host and what to capture for audits

## DAY 3 — Intermediate: Logging, tuning, load balancing and automation

Included from Intermediate

24. Logging: JULI, logging.properties, log rotation and switching to Log4j 2 for structured logs
25. Tuning parameters: maxThreads, minSpareThreads, acceptCount, maxConnections, timeouts and shared executors
26. JVM tuning: heap sizing, G1 and ZGC collectors and GC logging configured in setenv
27. Monitoring: JMX, the JMX proxy servlet, JConsole, VisualVM and a Prometheus JMX exporter
28. Reverse proxy with Nginx: proxy_pass, forwarded headers and RemoteIpValve for real client IPs

29. Nginx load balancing on Windows: upstream groups across multiple Tomcat instances
30. Nginx load balancing on Linux: upstream, passive health checks and failover behaviour
31. Multiple instances: one CATALINA_HOME with several CATALINA_BASE directories and ports
32. Automated deployments: Manager text API with curl, Maven deploy plugin and Ansible roles
33. Troubleshooting: thread dumps with jstack, redeploy memory leaks and OutOfMemoryError analysis
34. Containers: running the official Tomcat image in Docker with externalised configuration
35. Patch management: tracking Tomcat security advisories and applying point releases safely

DAYS 4-5 **Advanced: Clustering, session replication, hardening and migration** — New at this level

36. High availability using clustering: SimpleTcpCluster, membership, channel, sender and receiver settings
37. Cluster setup on Windows: multi-node configuration, ports, firewall rules and verification
38. Cluster setup on Linux: multi-node configuration with static membership and testing failover
39. Sticky sessions: jvmRoute, Nginx ip_hash or cookie affinity and their trade-offs
40. Session replication: DeltaManager versus BackupManager, distributable apps and serialisable attributes
41. Persistent sessions: PersistentManager with file or JDBC stores and external session stores
42. Tomcat on Kubernetes: cloud membership providers, readiness and liveness probes and rolling updates
43. Security hardening: CIS Apache Tomcat Benchmark, non-root service, ErrorReportValve and minimal connectors
44. Performance at scale: virtual thread executors on Java 21, JMeter load tests and connector tuning
45. Migration: javax to jakarta with the Apache Tomcat migration tool and upgrading 9.0 to 10.1 and 11.0
46. Operational governance: standard builds, configuration as code, patch cadence and change control
47. Capstone: a clustered, TLS-enabled Tomcat platform behind Nginx with monitoring and runbooks

PRACTICE

## Hands-on labs

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

FOUNDATION **Install Tomcat and deploy a web app**
Install Tomcat on a Linux VM as a systemd service, enable the Manager application for an admin user and deploy a WAR file through it.

ESSENTIAL **Serve two HTTPS sites from one Tomcat**
Configure two name-based virtual hosts on Linux, each with its own application and TLS certificate, and redirect all HTTP traffic to HTTPS.

INTERMEDIATE **Load balance Tomcat instances behind Nginx**
Run two Tomcat instances on Linux, place Nginx in front as a load balancer, tune thread pools and verify behaviour under a short load test.

ADVANCED **Capstone: highly available Tomcat cluster**
Build a three-node Tomcat cluster with session replication behind Nginx, kill a node during a user session and show the session survives.

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 Apache Tomcat Server 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 APACHE TOMCAT SERVER 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/tomcat/

ENROL OR RESERVE A SEAT
**Apache Tomcat Server Advanced Training**

WHATSAPP · INDIA
**+91 99057 40781**

WHATSAPP · USA
**+1 (469) 756-6329**

EMAIL
**contact@DevOpsSchool.com**