

# Java Spring Boot Kafka Kubernetes Troubleshooting Handbook

## Observability

Metrics, logs, traces, correlation IDs, OpenTelemetry.

## JVM

Heap, GC tuning, memory leaks, thread dumps, profiling.

## Spring Boot

Actuator, HikariCP, async execution, scheduling.

## Kafka

Partitions, consumer lag, retries, DLQ, idempotent producers.

## Database

Indexing, transactions, locking, isolation, connection pools.

## Redis

Caching strategies, TTL, cache stampede.

## Microservices

Service discovery, API gateway, resilience patterns.

## Docker & Kubernetes

Readiness, liveness, HPA, resource limits.

## CI/CD

Blue-green, canary, rollback strategies.

## Production Checklist

Logging, monitoring, alerting, security, backups.