KOENIG SOLUTIONS · COURSE OUTLINE

Tomcat - From Basic to Expert + Docker

Learn to install, configure, secure, tune and deploy Tomcat, including clustering, load balancing and running Tomcat with Docker.

4 Days	8	28	22
8 HOURS A DAY	MODULES	TOPICS	HANDS-ON LABS

COURSE OVERVIEW

This course aims to empower participants with a thorough understanding of Tomcat from basic to advance and tomcat with Docker.

WHO THIS COURSE IS FOR

- **System Administrators**
- **DevOps Engineers**
- **Application Administrators**
- **Infrastructure Engineers**
- **Java Web Administrators**

PREREQUISITES

- Basic Knowledge of networking and Java

TOOLS AND REQUIREMENTS

Lab Requirement

- Windows/linux machine with internet connection
- Tomcat Version: Latest

LEARNING OBJECTIVES

- Describe Tomcat architecture and its folder and configuration structure
- Configure Tomcat and Apache HTTP Server deployment architecture
- Implement SSL configuration for Tomcat and Apache HTTP Server
- Configure virtual hosts and high-availability clustering
- Apply load balancing across Tomcat instances using NGINX and Apache
- Configure session replication, sticky sessions and connection pooling
- Analyse heap memory and garbage collection behaviour
- Apply performance tuning and run Tomcat within Docker containers

COURSE SYLLABUS

8 Modules, 28 Topics

01 — Lab

Introduction to Tomcat and Installation

TOPICS

What is tomcat? · Tomcat Architecture · Understanding Folder Structures in Tomcat · Tomcat Configuration File Arch · Understanding Server Configuration file · Users & Roles Arch

02 — 6 Labs

Configuration of Tomcat & Apache HTTP Server

TOPICS

What is Deployment Architecture? · Apache HTTP Server Introduction Arch

03 — Lab

Tomcat SSL Configuration + Apache HTTP SSL Configuration

TOPICS

SSL Introduction · SSL Trust & Key Store

04 — 2 Labs

Virtual Host and HA Clustering

TOPICS

Introduction to Virtual Host · Type of Cluster Arch · LB Algorithms Arch

Load Balancing — 3 Labs

06 — 3 Labs

Session Management and Connection Pooling

TOPICS

Sticky Sessions Introduction · Session Replication Introduction · Understanding JNDI · Understanding Connection Pooling

07 — Lab

Understanding Tomcat Heap and Garbage Collection

TOPICS

Basic Understanding on Memory · Understanding Heap Generations · Understanding Out Of Memory Exception · Heap Values Explained

Custom Error Page and Tomcat Logging — 2 Labs

09 Lab

Performance Tuning and Optimization

TOPICS

Performance Tuning Overview · Connectors and Executor Thread Optimization · Enable HTTP Response Compression

10 2 Labs

Tomcat With Docker

TOPICS

Introduction to Containers · Introduction to Docker · Docker Essential Commands · Understanding Docker Images

HANDS-ON LABS

Practise What You Learn

#	MODULE	ACTIVITY
01	**Introduction to Tomcat and Installation**	Download and install tomcat
02	**Configuration of Tomcat & Apache HTTP Server**	■ Accessing Default Applications ■ Setting Up Users & Roles ■ Auto Deployment in Tomcat ■ Deployment from Web Console ■ Disabling Auto Deployment ■ Apache HTTP Server Installation & Overview
03	**Tomcat SSL Configuration + Apache HTTP SSL Configuration**	Tomcat SSL Configuration
04	**Virtual Host and HA Clustering**	■ Configuring Virtual Host ■ Setting Up Multiple Tomcat Instance
05	**Load Balancing**	■ Load Balancing Tomcat using NGINX ■ Setting up Apache and Mod_Jk Connector ■ Distributing Traffic with Apache Load Balance
06	**Session Management and Connection Pooling**	■ Configuring Sticky Sessions on NGINX and Apache LB ■ Configuring Session Replication ■ Creating JNDI and JDBC Connection Pooling
07	**Understanding Tomcat Heap and Garbage Collection**	Memory Optimization - Heap and Metaspace
08	**Custom Error Page and Tomcat Logging**	■ Configuring Custom Error Page ■ Configuring Tomcat Logging
09	**Performance Tuning and Optimization**	Setting Up Monitoring

#	MODULE	ACTIVITY
10	**Tomcat With Docker**	■ Downloading and Installing Docker ■ Hosting Tomcat on Container with Custom WAR file

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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