

Apache Tomcat Administration for Linux (3 Days)

This Tomcat Administration for Linux class covers the important topics of administering the Tomcat server including installation, directory structure, configuration using server.xml, web application deployment, the manager tool, JNDI data sources, logging, and monitoring and management of the server.

Note: This course is appropriate for users of all versions of Tomcat.

COURSE BENEFITS

- Learn about the history of Tomcat.
- Learn how to install Tomcat
- Learn about the directory structure and batch files.
- Learn how to configure Tomcat.
- Learn how to work with Web applications.
- Learn to work with the Tomcat Manager including how to assign security roles.
- Learn to work with JNDI data sources and JDBC
- Learn about security and permissions.
- Learn how to generate a keystore file.
- Learn logging techniques.
- Learn how to monitor Tomcat's performance.
- Learn about clustering including directory setup.

AVAILABLE DELIVERY METHODS

Public Class

Public expert-led online training from the convenience of your home, office or anywhere with an internet connection. Guaranteed to run .

Private Class

Private classes are delivered for groups at your offices or a location of your choice.

COURSE OUTLINE

Tomcat Introduction

- History of Tomcat
- Version Number and Features
- Tomcat Components
 - Catalina
 - Jasper
 - Coyote
- JEE Overview
 - MVC Design Pattern
 - Servlets/JSP
 - Directory Structure
 - JNDI

Installing Tomcat

- Download
- Installation
- Environment Variables
- Starting the Server
- Verifying Server Operation
- Stopping the Server

Tomcat Directory Structure

- Batch files in /bin
 - .exe files
- /conf
 - server.xml
 - context.xml
 - web.xml
- /logs
- /webapps
- /lib
- /work
- /temp

Configuring Tomcat

- Role of server.xml
- Instance Layout
 - Server
 - Service
 - Virtual Host
 - Context
- server.xml elements
 - <Server>
 - <Service>

- <Connector>
- <Engine>
- <Host>
- <Context>
- <Realm>
- <Valve>

Deploying Web Applications

- JEE Specification for Web Applications
 - Servlets and JSP
 - Model View Controller (MVC) Design Pattern
 - Directory Structure
 - web.xml
- Document Base
- Context and the Document Base
- Default Context Descriptor
- Placing the Web Application Folders and Files under the Application Base
- Deploying a WAR file
- AutoDeploy

The Tomcat Manager

- /manager Web Application
- Managing Web Applications
 - Deploying
 - Listing Deployed Applications
 - Reload Existing Applications
 - Starting/Stopping
 - Undeploying
- Listing Server Status
- Listing Security Roles in the User Database

JNDI Data Sources and JDBC

- JNDI
- JDBC
 - Drivers
 - Data Sources in JDBC 2.0 and Later
 - Connection Pooling
- Commons Database Connection Pooling
 - Installation
 - Guarding against Application Program Failure
 - Configuration
- Data Source Definition
 - Web Application context.xml
 - context.xml in /conf
 - GlobalNamingResources in server.xml
- Troubleshooting

Security

- Web Application Security
- Java SecurityManager
 - Overview
 - Standard Permissions
 - Tomcat Permissions
 - Starting Tomcat with a Security Manager Using the Default Policy File
- Secure Socket Layer (SSL)
 - Generating a keystore File
 - Modifications to serverxml for SSL Support in Tomcat
- tomcat-users.xml

Logging

- Logging Overview
- Web Application Logging Techniques
 - javautilllogging
 - javaxservletServletContext
 - log4j

Monitoring and Performance Tuning Tomcat

- Tomcat
- JVM
- JMX (Java Management Extensions)
- JMX MBeans in Tomcat
 - Engine
 - JKMain
 - String Cache
 - Server
 - Users
- Configuring Tomcat to use MBeans
- Accessing MBeans
 - jconsole
 - jVisualVM
 - PSI Probe

Clustering

- Using Clustering for Replication and Load Balancing
- Running Multiple Instances of Tomcat
 - Directory Setup
 - Port Number Modifications
 - All to All with DeltaManager
 - Backup to One Cluster with BackupManager
- Enabling Session Replication
 - Session Persistence Using Shared File System
 - Session Persistence using Shared Database: Database Table
 - In-memory Replication Using SimpleTcpCluster
- Load Balancing Using mod_jk Connector to Apache2x Web Server

CLASS MATERIALS

Each student will receive a comprehensive set of materials, including course notes and all the class examples.

CLASS PREREQUISITES

Experience in the following *would be useful* for this Tomcat class:

- Experience with Java is helpful.