

WebSphere+ WebLogic+ Tomcat+ Jboss+ Apache+ Kubernetes - L2 Academy | Training Curriculum

IBM Websphere Application server Course Content (3 days)

Introduction

- ✓ What is WebSphere
- ✓ The WebSphere family
- ✓ Various WAS editions
- ✓ The J2EE Platform
- ✓ What is new in WAS 9.x

Architecture, Component, Installation & Configuration

- ✓ Understanding of Server profiles
- ✓ Base Server architecture and components
- ✓ WAS ND architecture and components
- ✓ Installation of WAS ND – IMC installation Manager (GUI and CLI)
- ✓ Manage Profiles - About all Profile type in WAS 9.x
- ✓ Cells, Nodes, Clusters
- ✓ Topologies for best practices
- ✓ Deploy the Sample Application

Administrative Console

- ✓ Where the console resides
- ✓ Navigating the GUI Configure
- ✓ Application server
- ✓ Install & Configure Web Server
- ✓ Web server plug-in
- ✓ Single cell configurations
- ✓ Access the Console via Port Numbers
- ✓ Server Environments
- ✓ Single cell configurations
- ✓ Multiple cell configurations
- ✓ Multiple cell configurations
- ✓ Mixed node versions in a cell

Deploying and configuring Enterprise Applications

- ✓ Overview of Enterprise application
- ✓ Deploying and configuring Enterprise applications
- ✓ Setting up resources (JDBC,JMS)
- ✓ Application server properties
- ✓ Web container properties
- ✓ EJB container properties

Distributed Servers and Repositories

- ✓ Network deployment(WAS-ND)
- ✓ Creating cells
- ✓ Federating nodes
- ✓ Configuration Federated repositories (LDAP)
- ✓ Configuration of SSO
- ✓ Repository: Cell, Nodes, Servers
- ✓ Repository: deployment manager
- ✓ Job manager
- ✓ Nodeagent and Administrative agent
- ✓ Managing remote Web servers

Cluster and Topologies

- ✓ Creating clusters
- ✓ Adding servers to clusters
- ✓ Cluster management
- ✓ Network dispatcher
- ✓ Vertical scaling
- ✓ Horizontal scaling
- ✓ Multi clustering

Administrative Security

- ✓ Configuring User registries and repositories
- ✓ Custom registry security

Troubleshooting and Monitoring

- ✓ Console messages
- ✓ Trace facility
- ✓ Log analyzer

Weblogic Application server Course Content (2 days)

Architecture & Concepts

- Weblogic Architecture, Domain and Domain Home
- Types of Servers, Cluster and Dynamic Cluster 12c
- JDBC, JMS, Node Manager, Security Realm and MultiTenancy

Weblogic Install & Configure

- Installation Overview
- Configure Domain Overview
- Directory Binaries & Domain and JDK Installation
- Install Weblogic Server 12c & Configure Domain Weblogic 12c
- Extending Domain and Install Configure Hands-on Exercise

FileSystem & Start-Stop

- Directory Structure Weblogic Server
- Domain Configuration
- Start-Stop Admin & Managed Server
- Start-Stop Node Manager
- Enabling Auto Login by Using the Boot Identity File

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Console

- Introduction and Need of Admin Console
- Introduction to FMW Control
- What can we do with FMW Control
- FMW Control VS WLS Admin Console & QA

Datasource (JDBC) & Deployment

- Overview of JDBC
- Types of Data Sources
- How Data Source Works
- Overview and Types of Applications
- Deployment Staging Modes and Q&A

Java Messaging Service (JMS)

- Overview of JMS
- JMS Server Migratable Targets & JMS Modules
- JMS SubDeployment & JMS Destinations & JMS Bridge

HA & Clustering

- Overview of Cluster
- Pack Unpack & Demo on HA Clustering
- Dynamic Cluster & Cluster Messaging Communication
- JNDI WL Domain
- Load Balancing Algorithms
- Cluster Topologies & Demo on JNDI and Dynamic Cluster

Security & SSL/TLS

- Create User Group with Default Authentication
- Light Weight Directory Access Protocol & Demo on User Group LDAP

Patching & Upgrade

- Patching in FMW_ What, Why & How

Tomcat Application server Course Content (2 days)

Introduction

- Overview of the Apache Software Foundation and the Jakarta Project
- Overview of Java EE as a platform
- Overview of the features and functionality specifically provided by Tomcat
- The Tomcat family
- Various Tomcat editions

Installing Tomcat

- Installing the Java Runtime Environment (JRE)
- Performing the Tomcat installation (with nuances specific to your operating system discussed)

Examining the Tomcat installation directories

- bin
- conf
- lib
- logs
- temp
- webapps
- work

Configuring Tomcat

- server.xml
- web.xml
- context.xml

Tomcat Valves

- AccessLog
- RequestFilterValve
- Selective coverage of other filters as needed in your environment
- Discussion of how filters are progressively replacing valves

Memory management and JMX monitoring

- Understanding Java garbage collection
- Using JAVA_OPTS, JMX and JConsole to monitor and tune Tomcat memory usage
- Sizing Tomcat's JVM memory heap
- Using JMX and JConsole to configure Tomcat via Tomcat's MBeans
- Updating Tomcat's configuration via JMX "on the fly" without restarting Tomcat
- Load testing with JMeter
- Using VisualVM (new monitoring tool built into JDK 6) and PSI Probe
- Controlling JMX MBeans via Ant

Logging

- JULI logging
- log4j logging
- Understanding exceptions and thread dumps

Connecting databases with Tomcat applications

- Classic JDBC approach
- Better approach: JNDI resources
- Setting up and monitoring database connection pools

Security

- How to configure Tomcat with a security manager
- File system security
- Java security manager
- Realms, authentication, and authorization
- SSL Certification , CSR
- Closing potential security holes in Tomcat's default configuration

- Turning off the shutdown port
- Ensuring directory listings are disabled
- Removing unnecessary applications
- Password protecting the JMX port (if open)
- Turning off unnecessary connectors
- Hardening the remaining connectors

Tomcat 8.x/9.x/10.x New Features

Running Tomcat behind Apache httpd or IIS

- Use of Webserver, Advantage of Tomcat behind Apache httpd or IIS?
- Installing mod_jk or mod_proxy_ajp and mod_proxy_balancer
- Proxying traffic to Tomcat via AJP
- Monitoring the status of your web server's connection to Tomcat
- Load balancing Tomcat via mod_jk or mod_proxy_balancer

Tomcat Clustering

- Configuring mod_jk (in Apache or IIS) or mod_proxy_balancer (Apache 2.2 or later only) as a load balancer

Tomcat Patching

- How apply Patches in Tomcat server
- Revert Applied patches

JBoss Application server Course Content (2 days)

Introduction

- The Jboss family
- Various Jboss editions
- The Application Server Environment
- Aspects of JBoss
- WildFly and Enterprise Editions
- JBoss Component Tour

Installation

- Installation Options
- Installing Java
- Installing the JBoss Application Server

JEE Architecture

- Java Enterprise Edition (JEE) Applications
- Web Components
- Business Components
- Web Services
- JBoss and Middle Tier Architecture

Administrative Tools

- Using the Command Line Interface (CLI)
- Using the Web Admin Console
- Scripting Tasks with CLI
- JBoss and JMX

Configuration in Standalone mode

- Configuring JBoss for Standalone Mode
- The standalone.xml Configuration File
- The Standalone Mode Directory Structure

Configuration in Domain mode

- Configuring JBoss for domain mode
- The domain.xml and host.xml Configuration Files
- Domain Controllers and Host Controllers
- Using Server Groups

Managing the Application Server

- Starting and Stopping JBoss Instances
- Instance Life Cycle in Standalone Mode
- Instance Life Cycle in Domain Mode
- Backup and Recovery Options

Working with Logs

- Configuring and Using the Logging Subsystem
- Configuring the Built-in Handlers

Deploying Applications

- WAR Files, EAR Files and Deployment Descriptors

- Standalone Mode Deployment
- Domain Mode Deployment
- Server Group Deployment
- Deploying with CLI
- Deploying with Web Admin Console

Configuration of DataSource

- Communicating with databases
- JDBC Drivers
- Defining a Datasource
- Database Connection Pooling

JMS Messaging and Concept

- Introduction to JMS
- JBoss Messaging
- Configuring Connection Factories, Topics and Queues

Web Tire Configuration/ Webserver Configuration with Jboss

- JBoss Web Configuration
- Web Deployment Descriptors
- Web Connectors
- Configuring Apache Servers
- Web Services and JAX-WS

Configure Cluster in Jboss

- High Availability Solutions
- JBoss Clustering
- Load Balancing Configuration
- Standalone and Domain Mode Clusters

Concept and Configure Security in Jboss

- The JBoss Security Model
- Using Login Modules
- Securing Web Applications and JMS Destinations
- Configuring HTTPS Connectors
- Using a Password Vault

Below Topic need to cover in Kubernetes Course (1 Day)

1. Introduction
2. Architecture (apiserver, etcd, controllers, etc.)
3. Installation and Setup.
4. Scheduling
5. Logging and Monitoring
6. Application deployment and management
7. Cluster Maintenance
8. Security
9. Storage
10. Networking
11. Backups
12. Upgrades
13. Tools
14. Public cloud overview of AWS, Azure and Managed Kubernetes Services (AKS, EKS)