

## JBS-107: WildFly 10/Jboss EAP 7 Application Server administration

**Course Length:** 4 days

**Course Description:** This course provides hands-on and in-depth coverage on configuring and managing WildFly 10 and JBoss EAP 7 servers - the latest release in the very popular JBoss® series of application servers. This course incorporates WildFly 10's new features and changes compared to earlier WildFly releases. EAP 7 is the supported release of the WildFly 10 server.

The course is very hands-on, with brief hands-on mini-labs throughout the material which illustrate a topic and help with retention. It also includes numerous larger hands-on labs to dig deeply into a topic.

This course covers all the important administrative tasks that are required to administer this new version of the server. It starts with basic structure, architecture and installation, and moves on to working with the various management tools and deploying applications. Configuration and management of all the important services and subsystems are covered, as is security, domains, and clustering. All management tools are covered, including direct editing of XML configuration files, using the CLI (Command Line Interface), and using the Web-based Management Console. See the list of Skills Gained and the Detailed Outline for more details.

The course is focused, informative, and created by experts in the JBoss/WildFly AS. It will demystify the many important capabilities and structure of WildFly 10, and leave you well prepared to install, configure, and manage server installations.

**Prerequisites:** To get the most benefit from this JBoss Training course, you should be familiar with the basic principles of web/application server administration.

**Supported Platforms:** WildFly 10 and JBoss EAP 7 on both Linux and Windows Operating Systems

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## Course outline

### Session 1: WildFly Introduction and Installation

- Java EE Overview and Architecture
- WF 10 Background and Overview
- Installing and Starting WF 10
- Server Suspend Mode (WF 9+)
- Working with WF 10
- Documentation Overview

### Session 2: Structure and Architecture

- WF10 Directory and File Structure
- Server Architecture and Configuration
  - Server Config File - Extensions, Subsystems, Schemas, Paths
  - Interfaces and Socket Bindings

### **Session 3: Configuration and Management - Part 1**

- Overview of Management Options
- Understanding the Management Model and the XML Config Files
- Using the CLI (Command Line Interface)
  - Overview
  - Navigating the Management Tree
  - Working with Operations and Commands
  - Creating/Deleting Nodes
- Using the Management Console

### **Session 4: Application Deployment**

- Java EE Deployment Archives (JARs, WARs, EARs)
- Deployment/Undeployment with the CLI and Management Console
- Deployment Scanner - Auto-Deployment in WF 10
- Marker Files and Auto-deployment

### **Session 5: Configuration and Management - Part 2**

- JBoss Modules and Modular Classloading
- Defining a Module
- Working with Dependencies
- Server Logging
- Handlers, Log Levels, Formatters and Pattern Strings
- Configuring Application Logging
- Configuring Audit Logging

### **Session 6: Subsystem Configuration**

- JNDI and Naming Overview
- Naming Subsystem Overview and Configuration
- Datasource and JCA Overview
- Datasource and Driver Configuration (XML, CLI, and Admin Console)
- Datasource Monitoring, and Tuning
- Thread Pools - History and Current Configuration
- Undertow Web Container
  - Undertow Overview
  - Undertow Configuration - listeners and workers (XML and CLI)
  - Host and Filter Configuration
  - HTTP/2 Support (WF 9+)
- The H2 Database and ExampleDS
- EJB Container/Subsystem (SLSB Pooling, MDB, SFSB Cache, Monitoring)
- Other Subsystems in Brief (remoting, ee, Infinispan)

### **Session 7: Messaging in WF 10**

- Messaging and JMS (Java Message Service) Overview
- HornetQ Overview
- Messaging Subsystem Configuration (XML, CLI, and Admin Console)
  - General Configuration
  - Connectors and Acceptors
  - Configuring Connection Factories
  - Configuring Queues and Topics (XML, CLI, and Admin Console)
  - Monitoring and Managing
  - Address and Security Settings

## Session 8: Security

- WildFly EE Security Overview
  - General Requirements
  - Security Realms and Domains
  - RBAC - Role Based Access Control
- Management Interface Security (Security Realms, Local Access, Properties Files/LDAP, add-user)
- Application Security
  - Java EE Security Overview
  - Authentication, Authorization, Identity
  - Login Modules (Security Domains) - UsersRoles, Database, Ldap
  - Security Info Caching
- Role-Based Access Control (Overview, Standard Roles, Configuration)
- Resource Security (TLS/SSL/HTTPS)
- The Vault - Protecting Sensitive Strings

## Session 9: Clustering and HTTP Load Balancing

- Clustering Overview
- WildFly 10 Cluster Overview (including HA Singleton)
- Cluster Configuration - JGroups
- Architectures - Load Balancers and Client Interceptors (Proxies)
- HTTP Load Balancing
  - WF10 built-in load balancer
  - Apache httpd load balancer
  - mod\_cluster Overview
  - httpd.conf Configuration
  - Installation Choices
  - modcluster Subsystem Configuration
  - Management

## Session 10: WF 10 Domain Mode - A Hands-On Exploration

- Domain Mode Overview
- Domain Topology - Domain Controllers, Host Controllers, Server Groups
- domain.xml - Domain Configuration, Server Groups
- host.xml - Domain Controller
- host.xml - Host Controllers, Processes and Server Instances
- Management - Management Console and CLI
- Deployment/Undeployment - via Management Console and CLI

## Session 11: Tuning and Monitoring

- Enabling Statistics
- Web Container (Undertow) Tuning - Statistics, Worker Threads
- EJB Tuning - Bean Instances, Thread Pools
- Database Access / Datasources
- Clustering Communication and Replication
- Monitoring Runtime Data
- Java Virtual Machine (JVM) Awareness
  - Heap Size
  - Garbage Collection (GC) Overview and Generational GC