Course duration

- 4 days

Course Benefits

- Understand WildFly architecture and JEE server structure
- Install and configure the server
- Understand the structure of both standalone installations and domain-based installations
- Understand the management model and the XML configuration files
- Use the management tools including direct editing of XML, using the CLI (Command Line Interface), scripting, and the Web management console (new design in WF 13)
- Understand deployment types and packaging (JARS, WARS, EARS ...), and deploy applications
- Understand modular classloading in WildFly Server, and how it affects application deployment and dependencies
- Configure and monitor the Web container
- Configure important services, including datasources, JNDI, EJB, JMS messaging, and logging
- Understand and configure WildFly security using the classic (default) security configuration
- Be familiar with the new Elytron security model
- Use monitoring tools, and identify areas for tuning
- Understand and use clustering with WildFly, including including load balancing with the built-in front-end load balancer and Apache httpd and mod_cluster
- Understand and administer a domain of WildFly servers

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

1. WildFly Introduction and Installation

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1. Java EE Overview and Architecture
2. WildFly Server Background and Overview
3. Installing and Starting WildFly Server
4. Server Suspend Mode
5. Working with WildFly Server
6. Documentation Overview

2. Structure and Architecture
    1. WildFly Server Directory and File Structure
    2. Server Architecture and Configuration
        1. Server Config File - Extensions, Subsystems, Schemas, Paths
        2. Interfaces and Socket Bindings
3. Configuration and Management - Part 1
    1. Overview of Management Options
    2. Understanding the Management Model and the XML Config Files
    3. Using the CLI (Command Line Interface)
        1. Overview
        2. Navigating the Management Tree
        3. Working with Operations and Commands
        4. Creating/Deleting Nodes
    4. Using the Management Console (new design in WF 13+)
4. Application Deployment
    1. Java EE Deployment Archives (JARs, WARs, EARs)
    2. Deployment/Undeployment with the CLI and Management Console
    3. Deployment Scanner - Auto-Deployment in WildFly Server
    4. Marker Files and Auto-deployment
5. Configuration and Management - Part 2
    1. JBoss Modules and Modular Classloading
    2. Defining a Module
    3. Working with Dependencies
    4. Server Logging
    5. Handlers, Log Levels, Formatters and Pattern Strings
    6. Configuring Application Logging
    7. Configuring Audit Logging
6. Subsystem Configuration
    1. JNDI and Naming Overview
    2. Naming Subsystem Overview and Configuration
    3. Datasource and JCA Overview
    4. Datasource and Driver Configuration (XML, CLI, and Admin Console)
    5. Datasource Monitoring, and Tuning
    6. Thread Pools - History and Current Configuration
    7. Undertow Web Container
        1. Undertow Overview
        2. Undertow Configuration - listeners and workers (XML and CLI)
        3. Host and Filter Configuration
        4. HTTP/2 Support
    8. The H2 Database and ExampleDS
    9. EJB Container/Subsystem (SLSB Pooling, MDB, SFSB Cache, Monitoring)

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    10. Other Subsystems in Brief (remoting, ee, infinispan)
7. Messaging in WildFly Server
    1. Messaging and JMS (Java Message Service) Overview
    2. ActiveMQ Artemis Overview
    3. Messaging Subsystem Configuration (XML, CLI, and Admin Console)
        1. General Configuration
        2. Connectors and Acceptors
        3. Configuring Connection Factories
        4. Configuring Queues and Topics (XML, CLI, and Admin Console)
        5. Monitoring and Managing
        6. Address and Security Settings
8. Security
    1. WildFly/JEE Security Overview
        1. General Requirements
        2. "Legacy" Security and Elytron Security
        3. Security Domains and Realms
        4. RBAC
    2. Securing the Management Interfaces
    3. Application Security
        1. Java EE Security Overview
        2. Authentication, Authorization, Identity
        3. Linking Applications to a Security Domain
        4. Security Info Caching
    4. RBAC - Role Based Access Control
    5. Resource Security
        1. Configuring TLS/SSL/HTTPS
        2. Credential Store - Protecting Sensitive Strings
    6. [Optional] Overview of Elytron Security Subsystem
        1. Overview< and Architecture
        2. Configuration Overview
        3. Usage Overview
9. Clustering and HTTP Load Balancing
    1. Clustering Overview
    2. WildFly Server Cluster Overview (including HA Singleton)
    3. Cluster Configuration - JGroups
    4. Architectures - Load Balancers and Client Interceptors (Proxies)
    5. HTTP Load Balancing
        1. Built-in load balancer
        2. Apache httpd load balancer
        3. mod_cluster Overview
        4. httpd.conf Configuration
        5. Installation Choices
        6. modculster Subsystem Configuration
        7. Management
10. WildFly Server Domain Mode
    1. Domain Mode Overview
    2. Domain Topology - Domain Controllers, Host Controllers, Server Groups

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3. domain.xml - Domain Configuration, Server Groups
4. host.xml - Domain Controller
5. host.xml - Host Controllers, Processes and Server Instances
6. Management - Management Console and CLI
7. Deployment/Undeployment - via Management Console and CLI

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

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 *is required* for this JBoss/WildFly class:

- Some experience with web/application servers and databases.

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