

Oracle WebLogic Server 14c: Administration

This program covers Oracle WebLogic Server 14c (14.1.2.0.0) administration across two parts. WebLogic Server 14c provides Jakarta EE 8 full-platform support, is certified for Java SE 17 and 21, and is built for cloud-native deployment with Docker, Kubernetes (via the WebLogic Kubernetes Operator), and the new WebLogic Remote Console. Note that the legacy browser-based WebLogic Server Administration Console and WebLogic Server Multitenant (domain partitions) have been removed in 14c; management is now done through the WebLogic Remote Console, WLST, WebLogic Deploy Tooling (WDT), and REST.

Part I — Administration I

This part teaches the most important Oracle WebLogic Server 14c administrative tasks and gives an overview of the architecture and concepts of WebLogic Server.

Learn To

- Install, configure, and administer Oracle WebLogic Server 14c
- Create a domain and start servers
- Monitor domain resources
- Set up and use Node Manager
- Deploy applications
- Configure JDBC database resources
- Configure a cluster (static and dynamic)

Benefits to You

After this part you'll be able to improve the performance and scalability of your organization's applications and services with a leading enterprise application server, simplify deployment, and improve time-to-market.

Audience and Prerequisites

- Administrators, Developers, System Integrators, and Systems Administrators
- Some experience with basic Linux commands and system administration

Course Topics

WebLogic Server Overview

- WebLogic Server architecture and application services
- Administration tools: WebLogic Remote Console, WLST, WebLogic Deploy Tooling (WDT), and REST
- Cloud deployment options: OCI, Docker, and the WebLogic Kubernetes Operator

Installing and Patching WebLogic Server

- Installing WebLogic Server 14c (generic, slim, and quick installers)
- Patching WebLogic Server and Zero Downtime (ZDT) patching
- Migration tooling: WebLogic Migration Analysis Tool and OpenRewrite recipes

Creating Domains

- Domain planning and domain modes
- Domain creation tools and templates; using the Configuration Wizard
- Modeling domains with WebLogic Deploy Tooling (WDT)

Starting Servers

- Server lifecycle; starting and stopping servers
- Domain scripts and customizing them
- Restarting failed servers

Configuration and Managed Servers

- Using the WebLogic Remote Console for configuration
- Change management architecture
- Creating and modifying Managed Servers
- Enterprise Manager Fusion Middleware Control (with JRF)

Configuring JDBC

- JDBC review and data source types
- Configuring a JDBC data source; connection pools
- JDBC and Oracle RAC (Active GridLink)

Monitoring a Domain

- Working with WebLogic Server logs
- Monitoring WebLogic Server; JMX, MBeans, and monitoring
- Monitoring dashboards

Node Manager

- Node Manager concepts; configuring and using Node Manager
- Node Manager setup tasks and scripting
- Node Manager best practices

Deploying Applications

- Deployment overview and lifecycle; deployment descriptor concepts
- WebLogic deployment tools; deploying an application; load testing

Network Channels, Clusters, and Transactions

- Network channels, virtual hosts, and the admin port
- Configuring static and dynamic clusters
- Cluster proxies (Oracle HTTP Server); replication groups
- Cluster communication: multicast vs unicast; replication channels; scaling and troubleshooting
- Transactions: persistence, transaction logs, persistent stores, and monitoring

Security and Backup

- WebLogic security architecture; configuring an authentication provider; LDAP authentication
- Troubleshooting authentication

- Backup and recovery concepts; backing up and restoring a domain; upgrading WebLogic Server

Part II — Administration II

A continuation of Administration I, this part covers advanced administrative tasks and best practices: rolling upgrades, domain templates, automatic crash recovery, WLST scripting, REST management, advanced JDBC and deployment, SSL, the WebLogic Diagnostic Framework, and Coherence*Web with managed Coherence servers — increasing the reliability, availability, scalability, and performance (RASP) of your applications.

Learn To

- Upgrade WebLogic products without disrupting client applications (rolling upgrade)
- Create and use domain templates
- Deploy shared libraries and applications using deployment plans and versioning
- Configure advanced JDBC features and multi data sources
- Create and run WLST scripts; manage WLS using REST
- Configure and use Coherence*Web and managed Coherence servers
- Configure SSL, security realms, auditing, and automatic JTA service migration

Audience and Prerequisites

- Administrators, Developers, Implementers, and Systems Administrators
- Required: Oracle WebLogic Server 14c: Administration I (or equivalent experience)

Course Topics

WebLogic Server Review

- WebLogic Server overview; domain, Administration Server, and Managed Servers
- Machines, Node Manager, and clusters; start scripts
- WebLogic tools: WebLogic Remote Console and WLST

Upgrading WebLogic Server

- Upgrade definition; rolling upgrade and the rolling upgrade process
- Using the Migration Analysis Tool and OpenRewrite recipes for application migration

Domain Templates and Crash Recovery

- Domain template, extension template, and custom template concepts
- Configuring Node Manager to start on system boot
- Server automatic crash recovery and restart

WebLogic Scripting Tool (WLST) and REST

- Jython and WLST concepts; JMX concepts; common WLST tasks
- Accessing and managing WLS via REST; WLS REST operations

Security and SSL

- SSL concepts and WebLogic SSL scenarios; keystores; configuring WebLogic SSL
- Security realms; embedded LDAP authentication; configuring auditing

Advanced Deployment

- Shared Jakarta EE library concepts; deploying a shared library
- Application staging modes and deployment plans; deployment plan tools
- Production redeployment; HTTP sessions and redeployment; application versioning

Work Managers and Diagnostics

- Default WebLogic request handling; work manager concepts; creating a work manager
- WebLogic Diagnostic Framework (WLDF): diagnostic images, harvesters, watches/policies and actions, notifications
- Scaling and WLDF

High Availability and Migration

- Disaster recovery; backing up the Administration Server
- Service-level migration and whole server migration; automatic JTA service migration
- Managing data sources and multi data sources

Coherence

- Coherence overview
- Coherence*Web session persistence
- Managed Coherence servers