VNA-SB-048 | Orphaned Oracle Stack Rescue (Discoverer, Workflow & EBS CEMLI) | WebLogic J2EE Monolith to OCI Kubernetes (OKE) & Helidon

On-Premises Oracle WebLogic Server J2EE Monoliths to OCI Kubernetes (OKE), Helidon & APEX

Transition from Expensive On-Premises WebLogic Server 12c/14c Clusters, EAR/WAR Monoliths & EJB 2.x/3.x to Oracle Container Engine for Kubernetes (OKE) + WebLogic Kubernetes Operator / Helidon + APEX UI with automated binary/AST metadata profiling, deterministic cost-control levers, auto-generated BRD and test documentation, and a fixed-fee 4-phase delivery roadmap.

Search Queries & Scope Covered: oracle weblogic to oci oke kubernetes migration | weblogic kubernetes operator deployment | refactor java ee ejb to helidon ords | reduce weblogic enterprise license cores

SOURCE LEGACY STACK (STACK X)	MODERNIZED TARGET ARCHITECTURE (STACK Y)
Expensive On-Premises WebLogic Server 12c/14c Clusters, EAR/WAR Monoliths & EJB 2.x/3.x	**Oracle Container Engine for Kubernetes (OKE) + WebLogic Kubernetes Operator / Helidon + APEX UI**

WEBLOGIC LICENSE CUT	DEPLOYMENT TIME	CONTAINER PLATFORM	LEGACY JSP/STRUTS UI
50% - 80%	**Minutes (GitOps)**	**OCI OKE Managed**	**Uplifted to APEX**

1. Problem Space & Architectural Bottlenecks

- Critical business operations remain trapped in Expensive On-Premises WebLogic Server 12c/14c Clusters, EAR/WAR Monoliths & EJB 2.x/3.x, creating audit risk, manual reconciliation overhead, and rising support costs.
- Duplicate queries, cloned reports, and undocumented triggers make impact analysis slow and expensive across ejb / servlet classes & jdbc data sources.
- Lack of automated binary-to-database metadata mapping causes traditional consulting shops to pad estimates with 40% manual discovery buffers.
- Leadership needs a predictable, fixed-fee phased timeline with verifiable test specifications and zero-downtime cutover guarantees.

2. Technical Solution & Reference Architecture

2.1 Automated Phase 0 AST & binary scan mapping Expensive On-Premises WebLogic Server 12c/14c Clusters, EAR/WAR Monoliths & EJB 2.x/3.x artifacts directly to live Oracle dictionary metadata and profiling production data.

2.2 Target architecture built on Oracle Container Engine for Kubernetes (OKE) + WebLogic Kubernetes Operator / Helidon + APEX UI, consolidating cloned queries into governed core SQL views with runtime Smart Filters.

2.3 Automated generation of full Business Requirements Documents (BRD), Technical Approach Docs, Testing Specifications, and Verified Test Results.

2.4 Zero-trust SSO/MFA (Entra ID / Okta) paired with database-enforced row-level security (VPD / RAS) and SQLcl Liquibase CI/CD pipelines.

3. Artifact-by-Artifact Conversion & Modernization Matrix

Legacy Artifact / Baseline Workload	Modernized Oracle / Cloud Target	Engineering Method & Outcome
Source Tier: Expensive On-Premises WebLogic Server 12c/14c Clusters, EAR/WAR Monoliths & EJB 2.x/3.x	Oracle Container Engine for Kubernetes (OKE) + WebLogic Kubernetes Operator / Helidon + APEX UI	Automated AST & Metadata Uplift (85%-95%)
Primary Footprint: WebLogic Domains & EAR/WAR Applications	Oracle APEX 24.2 Redwood UI + PL/SQL APIs	Binary-to-DB Metadata Mapping + Pilot Sprint
Workload & Queries: EJB / Servlet Classes & JDBC Data Sources	Canonical Core SQL Views + Runtime Smart Filters	Query Fan-Out Clustering (75%-90% Reduction)
Undocumented Legacy Business Rules & QA	Auto-Generated BRD, Approach Doc, Test Specs & Results	100% Automated Documentation & utPLSQL / Playwright

4. Oracle APEX & Ancillary Engineering Toolchain

- Oracle APEX 24.2 & Universal Theme (Light Architecture)
- Oracle Database 23ai / Autonomous Database (ATP / ADW)
- Viscosity Automated Binary (.fmb/.rdf) & AST Metadata Profiler
- Auto-Doc Engine (BRD, Approach Doc, Test Specs & Test Results)
- Oracle REST Data Services (ORDS) & APEX Office Print (AOP)
- SQLcl Liquibase CI/CD, utPLSQL & Playwright Regression Suites

> ***Anonymized Production Proof:*** *Modernized a cluster of legacy WebLogic J2EE enterprise applications onto OCI Container Engine for Kubernetes (OKE) and ORDS REST APIs, cutting middleware licensing and infrastructure run-rate by 64%.*

5. Principal Architect Q&A

Q: What are the primary levers that control the cost of WebLogic J2EE to OCI OKE & Helidon?

A: Cost is controlled by five levers: (1) collapsing cloned query fan-out across ejb / servlet classes & jdbc data sources into canonical core SQL views, (2) percentage of business logic already in database packages vs. UI triggers, (3) production data quality profiled during Phase 0, (4) external integration/SSO count, and (5) cutover downtime requirements.

Q: How does your tool convert binaries (.fmb, .rdf, etc.), map database metadata, and generate documentation?

A: Our automated analyzer parses legacy binaries and source files, extracts every trigger, query, and UI control, cross-references them against live database dictionary metadata (ALL_TAB_COLUMNS, ALL_DEPENDENCIES), profiles actual column data distributions, and automatically generates the Business Requirements Document (BRD), Technical Approach Doc, Test Specifications, and Verified Test Results.

Q: What does a typical project timeline look like from kickoff to production cutover?

A: Projects follow four gated phases: Phase 0 (Weeks 1-2: Binary AST Scan, Data Profiling & Auto-Generated BRD), Phase 1 (Weeks 3-6: Core Schema Uplift & Working Pilot), Phase 2 (Weeks 7-12: Automated Conversion Sprints & Test Spec Execution), and Phase 3 (Weeks 13-16: Parallel Run, Zero-Downtime Cutover & 30-Day Hypercare).