VNA-SB-049 | AWR Performance Tuning & Turnkey Oracle ACE Pods | Oracle Standard Edition 2 (SE2) High Availability & OCI DBCS Migration

Oracle Standard Edition 2 (SE2) 19c/23ai High Availability, Standby & OCI Base DB Modernization

Transition from Oracle SE2 Single-Point-of-Failure Servers, Lost 19c SE2 RAC Clusters & 16-Thread Bottlenecks to OCI Base Database Service HA / Refreshable Clone PDBs + GoldenGate Free CDC + AWR Tuning with automated binary/AST metadata profiling, deterministic cost-control levers, auto-generated BRD and test documentation, and a fixed-fee 4-phase delivery roadmap.

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SOURCE LEGACY STACK (STACK X)	MODERNIZED TARGET ARCHITECTURE (STACK Y)
Oracle SE2 Single-Point-of-Failure Servers, Lost 19c SE2 RAC Clusters & 16-Thread Bottlenecks	**OCI Base Database Service HA / Refreshable Clone PDBs + GoldenGate Free CDC + AWR Tuning**

SE2 FAILOVER RPO/RTO	EE LICENSE SHOCK	16-THREAD CPU CAP	CUTOVER DOWNTIME
Near-Zero	**100% Avoided**	**Tuned & Unblocked**	**< 10 Minutes**

1. Problem Space & Architectural Bottlenecks

- Critical business operations remain trapped in Oracle SE2 Single-Point-of-Failure Servers, Lost 19c SE2 RAC Clusters & 16-Thread Bottlenecks, creating audit risk, manual reconciliation overhead, and rising support costs.
- Duplicate queries, cloned reports, and undocumented triggers make impact analysis slow and expensive across peak concurrent sessions & pl/sql workloads.
- 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 Oracle SE2 Single-Point-of-Failure Servers, Lost 19c SE2 RAC Clusters & 16-Thread Bottlenecks artifacts directly to live Oracle dictionary metadata and profiling production data.

2.2 Target architecture built on OCI Base Database Service HA / Refreshable Clone PDBs + GoldenGate Free CDC + AWR Tuning, 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: Oracle SE2 Single-Point-of-Failure Servers, Lost 19c SE2 RAC Clusters & 16-Thread Bottlenecks	OCI Base Database Service HA / Refreshable Clone PDBs + GoldenGate Free CDC + AWR Tuning	Automated AST & Metadata Uplift (85%-95%)
Primary Footprint: Oracle Standard Edition (SE / SE2) Databases	Oracle APEX 24.2 Redwood UI + PL/SQL APIs	Binary-to-DB Metadata Mapping + Pilot Sprint
Workload & Queries: Peak Concurrent Sessions & PL/SQL Workloads	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:*** *Architected a resilient high-availability and disaster-recovery topology for a mid-market manufacturing enterprise after Oracle 19c removed SE2 RAC, achieving sub-minute failover without Enterprise Edition license costs.*

5. Principal Architect Q&A

Q: What are the primary levers that control the cost of Oracle SE2 High Availability & OCI Migration?

A: Cost is controlled by five levers: (1) collapsing cloned query fan-out across peak concurrent sessions & pl/sql workloads 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).