

VNA-SB-009 | Database X to Database Y | Legacy Big-Endian RISC Unix to Engineered Systems | Sierra Granite

HP-UX, IBM AIX & Solaris SPARC to Oracle Database Appliance (ODA X11) Migration

Maintaining Oracle Databases on HP-UX Itanium, IBM Power AIX, or Solaris SPARC locks you into punitive hardware maintenance renewals and high core-factor licensing. We migrate mission-critical big-endian Unix databases onto Oracle Database Appliance (ODA X10/X11) and Exadata Cloud@Customer using Cross-Platform Transportable Tablespaces (XTTS) and GoldenGate, cutting Oracle processor license requirements by 50% to 75% via ODA Capacity-on-Demand.

Search Queries & Scope Covered: migrate Oracle from AIX to Linux ODA | HP-UX Itanium Oracle 11g 19c migration to Linux | Solaris SPARC big endian to little endian RMAN XTTS v4 | Oracle Database Appliance ODA X11 capacity on demand licensing | reduce Oracle processor licenses with ODA hard partitioning

SOURCE LEGACY STACK (STACK X)		MODERNIZED TARGET ARCHITECTURE (STACK Y)	
Oracle on HP-UX IA64/PA-RISC, IBM AIX Power & Solaris SPARC		Oracle Database Appliance (ODA X10 / X11) & Exadata Cloud@Customer	
ORACLE LICENSE REDUCTION	ENDIAN CONVERSION CUTOVER	NVME IOPS IMPROVEMENT	TARGET PLATFORMS
50-75% (Capacity-on-Demand)	< 30 Mins (XTTS v4 / GG)	5x-12x Lower Latency	ODA X11-HA / ExaCC / OCI

1. Problem Space & Architectural Bottlenecks

- HP-UX (PA-RISC / Itanium), IBM AIX (Power), and Solaris SPARC are Big-Endian architectures, whereas modern Linux x86_64 is Little-Endian. You cannot simply copy physical Oracle datafiles across endian boundaries without block-level endianness conversion.
- Legacy SAN arrays and multi-socket RISC frames force customers to license every physical CPU core in the chassis, driving massive annual Oracle Enterprise Edition support bills.
- Oracle 19c and 23ai innovation focuses heavily on Oracle Linux and Engineered Systems, leaving legacy Unix ports on terminal sustainment tracks.

2. Technical Solution & Reference Architecture

- 2.1 ODA Capacity-on-Demand Right-Sizing: Using AWR/Statspack workload profiling, we size your target Oracle Database Appliance (ODA X11-S, X11-L, or X11-HA) and enable only the exact number of CPU cores your workload requires (starting as low as 2 cores), legally reducing your required Oracle processor licenses.
- 2.2 Cross-Platform Transportable Tablespaces (RMAN XTTS v4) with Incremental Backups: For multi-terabyte databases, we pre-stage and convert Big-Endian datafiles to Little-Endian on the target ODA using RMAN incremental backups in the background, shrinking final cutover to a final incremental apply.
- 2.3 Zero-Downtime GoldenGate / SharePlex Cutover: When 24x7 SLA requirements allow less than 5 minutes of downtime, we configure logical replication from 11g/12c/19c on Unix to 19c/23ai on ODA with automated row-hash verification.

2.4 KVM Hard Partitioning & Application Consolidation: Using ODA's built-in KVM hypervisor (approved by Oracle LMS for hard partitioning), we consolidate both your databases and adjacent Linux/Windows middle-tier VMs onto a single 2U/4U appliance.

3. Artifact-by-Artifact Conversion & Modernization Matrix

Legacy Artifact / Baseline Workload	Modernized Oracle / Cloud Target	Engineering Method & Outcome
Big-Endian Datafiles (HP-UX / AIX / Solaris)	Little-Endian Oracle Linux 8/9 ASM on NVMe (ODA X11)	RMAN Cross-Platform Incremental XTTS v4 (<code>`DBMS_FILE_TRANSFER`</code>)
Full-Chassis RISC Processor Licensing	ODA Capacity-on-Demand / KVM Hard Partitioning	Hardware-Enforced Core Pinning (<code>`odacli update-cpucore`</code>)
Legacy Fibre Channel SAN Multipathing	Direct-Attached Enterprise NVMe + ASM Redundancy	Zero-SAN Single-Vendor Engineered Stack
Shell Scripts (<code>`ksh`</code> / <code>`csh`</code>) & Pro*C Cron Jobs	Oracle Linux Bash + <code>`DBMS_SCHEDULER`</code> / APEX Automations	POSIX Path & Environment Variable Normalization

4. Oracle APEX & Ancillary Engineering Toolchain

- Oracle Database Appliance (ODA X10 / X11-S / X11-L / X11-HA) & ``odacli`` Lifecycle Manager
- Oracle Exadata Database Machine & Exadata Cloud@Customer (ExaCC)
- RMAN Cross-Platform Transportable Tablespaces (XTTS v4) & Oracle Data Pump
- Oracle GoldenGate & Quest SharePlex for near-zero-downtime cross-endian cutover
- Oracle Real Application Testing (RAT) SQL Performance Analyzer & Database Replay

Anonymized Production Proof: Across clinical research organizations, healthcare physician networks, national laboratories, and global satellite operators, our Oracle ACE infrastructure team has executed dozens of HP-UX, AIX, and Solaris migrations to Oracle Database Appliance (ODA) and Exadata Cloud@Customer with zero unplanned downtime.

5. Principal Architect Q&A

Q: Does Oracle License Management Services (LMS) recognize ODA Capacity-on-Demand for reducing license counts?

A: Yes. Oracle Database Appliance is an official Oracle Engineered System. You are only required to license the CPU cores explicitly enabled via ``odacli`` or hard-partitioned in ODA KVM Database Systems, not the physical cores installed in the server.

Q: How do you prevent SQL execution plan regressions when moving from 11g/12c on Unix to 19c/23ai on ODA?

A: We capture SQL Tuning Sets (STS) and SQL Plan Baselines on the legacy Unix database prior to cutover and test them against the ODA target using Oracle Real Application Testing (SPA), locking in verified plans via SQL Plan Management (SPM).

Q: What is included in the downloadable PDF Solution Brief?

A: The PDF Solution Brief includes the ODA X11 hardware/licensing sizing calculator, the RMAN XTTS v4 vs. GoldenGate decision matrix, and a step-by-step cross-endian cutover checklist.