Cloudwrxs Modernises TCC's Oracle E-Business Suite Disaster Recovery on AWS

Overview

Tabuk Cement Company (TCC), one of Saudi Arabia's major cement manufacturers, relied on ageing SPARC/Solaris infrastructure to run its mission-critical Oracle E-Business Suite (EBS) R12 and Oracle Database 19c workloads. The entire production environment operated from a single physical site, creating a high-risk dependency with no Disaster Recovery (DR) capability. Hardware limitations, extensive EBS customisations, and constrained budgets prevented TCC from performing a full production migration or an on-premise infrastructure refresh.

Cloudwrxs, leveraging its AWS expertise and partnership with Stromasys, designed a cloud-based DR solution using Charon-SSP SPARC emulation on Amazon Web Services (AWS). This approach enabled TCC to modernise its DR posture without modifying the application stack or replacing production SPARC systems, while laying a foundation for future transformation.

The combined solution consisted of a successful Proof of Concept (PoC), full DR migration, and the creation of a modern User Acceptance Testing (UAT) environment on AWS.

Key Challenges

1. Single Point of Failure for Mission-Critical ERP
   Production workloads were operated from a single data centre, creating high vulnerability in the event of system or facility failure.

2. Ageing, High-Maintenance SPARC Hardware
   Legacy servers required specialised maintenance and had limited vendor support, driving both operational and financial risk.

3. Solaris OS Incompatibility with Cloud Providers
   Native migration was impossible due to Solaris constraints, requiring specialised SPARC emulation.

4. Complexity of Highly Customised Oracle EBS
   Heavy customisation demanded careful validation, sizing, and performance tuning to ensure DR performance.

5. Requirement to Preserve Existing Capital Investment
   SPARC hardware remained under vendor support until 2034, meaning TCC needed a DR strategy without forced re-platforming.

Solution: AWS-Based Emulation, DR Migration, and Environment Modernisation

1. Proof of Concept (PoC): Validating Solaris Workloads on AWS

Cloudwrxs built a cloud-based PoC using Stromasys Charon-SSP on AWS to emulate the Solaris environment. The PoC successfully demonstrated that Oracle EBS workloads could run reliably in an emulated SPARC environment in the cloud, giving TCC confidence to proceed.

2. DR Migration on AWS

Cloudwrxs implemented a complete DR environment for Oracle EBS R12 on AWS, using:

- Stromasys Charon-SSP for SPARC emulation
- Oracle Data Guard for continuous database replication
- AWS CloudFormation for consistent, repeatable deployments
- Optimised EC2 instance sizing for balanced performance and cost efficiency

- Regular DR failover and restoration tests to validate RPO/RTO targets

This DR environment is fully aligned with regulatory, audit, and operational resilience requirements.

3. UAT Environment Build

Cloudwrxs created a fresh UAT environment on AWS using controlled Docker-based builds. This environment enabled testing and development without depending on ageing on-premise hardware and provided a safe foundation for future upgrades.

Cloudwrxs Migration & Implementation Steps

Cloudwrxs delivered the migration using a structured, AWS-aligned methodology:

1. AWS Landing Zone & Security Foundation
   Implementation of IAM guardrails, encryption baselines, logging, and compliance controls.

2. Provisioning of Compute & Storage Resources
   Deployment of dedicated EC2 instances for application, database, and licensing services.

3. Installation & Configuration of Charon-SSP on AWS
   Emulation layer deployed to replicate Solaris 11 workloads seamlessly.

4. Oracle Application & Database Restoration
   Backup restoration, application tier reconstruction, and configuration of Oracle Data Guard.

5. DR Validation & Failover Certification
   Performance, functional, and failover testing conducted to meet defined RTO/RPO.

6. UAT Build & Handover
   Delivery of a modern, clean UAT environment for development and change testing.

How AWS Services Enabled the Solution

1. Amazon EC2 provided scalable compute for Charon-SSP SPARC emulation.
2. AWS KMS enforced encryption for DR data at rest.
3. Amazon S3 delivered durable backup storage for Oracle workloads.
4. AWS CloudFormation automated consistent infrastructure deployment.
5. Amazon VPC ensured isolated, secure network architecture.
6. Amazon CloudWatch provided real-time operational monitoring and alerting.
7. AWS IAM enforced strict access governance.
8. Elastic instance sizing allowed DR workloads to scale on demand.

Results: How AWS Delivered Measurable Impact

1. Operational Cloud-Based DR Environment ensuring fast recovery and high resilience.
2. One-hour RTO achieved, vastly outperforming legacy DR capabilities.
3. 25% reduction in power consumption through the decommissioning of legacy DR hardware.
4. Equal or improved DR performance using optimised EC2 instances.
5. Elimination of SPARC hardware maintenance costs and spare parts dependency.
6. Integration with modern cloud services, enabling future modernisation.
7. Reduced downtime risk through cloud-based redundancy.

8. Improved audit and compliance posture with AWS security and governance controls.

How Services Were Delivered

Cloudwrxs handled the full lifecycle of the migration, including:

- Assessment workshops
- Architecture design
- Cost modelling
- Migration to AWS

Post-migration, Cloudwrxs provided:

- 24×7 monitoring and incident response
- Patching and OS maintenance
- Backup monitoring and validation
- DR drills and failover testing
- Security audits and compliance reviews
- Oracle and SAP Basis support

These services ensured the environment remained secure, compliant, and continuously optimised.

Business Outcomes (Before vs After Migration)

Outcome 1: Business Continuity & Resilience
Before: Single-site hosting with no DR capability.
After: AWS-based DR ensures rapid recovery and uninterrupted operations.

Outcome 2: Cost Efficiency & Infrastructure Optimisation
Before: High hardware maintenance costs and power usage.
After: Elastic AWS compute lowered operational costs and eliminated hardware dependency.

Outcome 3: Modernisation Readiness
Before: Legacy Solaris constrained transformation initiatives.
After: Cloud-based workloads enable phased Solaris-to-Linux modernisation.

Outcome 4: Enhanced IT Productivity
Before: Manual processes and limited monitoring.
After: CloudWatch, automation, and managed services improved IT efficiency.

Outcome 5: Compliance & Audit Improvement
Before: Legacy infrastructure created audit and resilience gaps.
After: AWS governance, encryption, and validated DR procedures improved compliance.

Customer Impact

TCC's leadership reported increased confidence in operational stability:
"Now the business feels more confident because the disaster recovery process can reduce potential downtime and keep systems running smoothly."

Conclusion

Cloudwrxs and AWS delivered a modern, resilient DR solution for TCC without requiring immediate platform migration or replacement of production SPARC servers. This successful engagement demonstrates a proven pathway for organisations operating legacy Solaris workloads to:

- Strengthen business continuity
- Reduce operational cost and risk
- Modernise progressively and safely
- Leverage AWS as a foundation for future transformation

This blueprint now serves as a repeatable model for modernising legacy Oracle and Solaris environments across the region.