

Global Automobile Company – E-Business Suite Migration to AWS



Our customer, an automobile company, headquartered in the United States, has a global footprint that spans more than 100 operating locations across North America, Europe, the Philippines and Uruguay. Our customer provides sellers and buyers across the global wholesale used-vehicle industry with remarketing solutions. Their unique end-to-end platform supports whole car, financing, logistics and other ancillary and related services.

Executive Summary

Our customer was hosting their Oracle ERP environments on-premises on VMware infrastructure. They wanted to migrate some of their business operations to AWS, aiming for much more stable, state-of-the-art infrastructure. This migration marked phase one of a multi-initiative strategy to achieve infrastructure upgrades and operational savings. The primary objective was to migrate the core EBS and other integrated systems to AWS EC2 compute and FSxN storage solutions, while also leveraging AWS’s comprehensive backup methods. Additionally, the team aimed to develop a roadmap for enhancing the Disaster Recovery strategy.

The Apps Associates team focused on migrating the EBS and COSMOS (Custom WebLogic) application to AWS using a Lift & Shift approach.

Environment

Production Environment Statistics:

- **Products:** Oracle DB 12.1.0, E-Business Suite 12.2.7
- **Operating Systems:** Oracle Enterprise Linux 6.10
- **Size of the Databases:** E-Business Suite: 6 TB
- **Size of Application File System:** 500GB

Driving Factors

Our customer aimed to consolidate infrastructure management across individual business units by adopting a common platform. Their strategic vision involved establishing a new foundation on Amazon Web Services (AWS) to align with their planned strategy and reduce costs. The existing ERP environment operated on version 12.2.7, with a database version of 12.1.0.2. Notably, the ERP system ran on RHEL 6.10, which had reached its end of life. To enhance application resilience, disentangle from other business units, and exit their current data centers, they embarked on a journey to migrate workloads to the AWS cloud.

High Level Steps of the Upgrade

The Apps Associates team migrated six instances of EBS R12 with 6TB of data to AWS. The production cutover was executed in a window of less than 20 hours downtime. The team stabilized performance across the board for all concurrent jobs & BI data extracts and provided automation for cloning non-Prod environments. In addition, the native AWS service “Trusted Advisor” was leveraged post-upgrade for recommendations to address security, performance and fault tolerance concerns.

The AWS Migration Service (MGN) was leveraged to migrate on-premises servers including the legacy COSMOS application, which runs on a WebLogic server. COSMOS is the core application for our customer’s business operation. AWS RDS instance was used as a repository database for the COSMOS application.

As part of the migration, an upgrade to the current Linux & Oracle DB versions was executed in order to be compliant with the latest patches and to reduce security vulnerabilities across the platform. Proposed DR strategy revamps current single zone Disaster recovery strategy to multi-zone Disaster recovery strategy with reduced RTO & RPO and provides options to offload BI data extracts to improve performance

Challenges

Our customer was running on the RHEL 6.10 operating system. One of the key Oracle Application utilities (autoconfig) was not working properly after migrating to AWS due to driver conflict issues with the latest generation of EC2 instance types (C6/M6/R6). After a concerted effort, the Apps team identified that the conflict was not noticed with the lower generation instances (c4/m4/r4) and therefore decided to use them for the final migration strategy. The Apps team recommended KAR to upgrade the OS to RHEL 8.0 to avoid future EC2 instance issues due to lack of OS support and functionality, which was later accomplished via a separate project.

The load balancer for the legacy cosmos application was not effective due to the nature of the COSMOS application. The Apps team suggested the use of two load balancers and to handle the traffic to load balancer through Route53 and a weight rule.

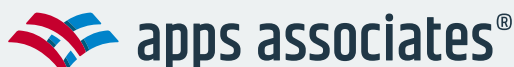
Signature images on check printing was not working due to the introduction of the load balancer but was resolved by placing an entry in Route53 to resolve our customer's DNS servers.

Benefits realized after the upgrade:

- Segregation of business applications
- Reliable, scalable infrastructure
- Shared storage used for ERP application nodes, thus reduction in storage and increased cost savings
- Simplified clone automation using EBS snapshot backups
- Simplified ERP application patching due to the introduction of a shared APPL_TOP model

About Apps Associates

Apps Associates is a premier enterprise applications and technology advisor, counseling and executing across every stage of the enterprise transformation journey - not just the destination. For more than two decades, Apps Associates has closely collaborated with decision makers across nearly every industry, offering end-to-end integration, modernization, and cloud migration services. By helping to break down the silos within today's most complex business challenges, Apps Associates is unlocking solutions and efficiencies that scale into future opportunities.



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