# Docker Implementation on AWS Cloud for ICT Solution Supplier Client


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## THE CUSTOMER

Our client is a leading fintech solution provider specializing in loan and mortgage. They have expertise in automating life cycle of loans which includes origination, servicing and recovery. The solutions are delivered as (certified) SaaS in the market.

## THE CHALLENGE

The client was running applications across different environments (QA/Dev/stage/Prod) on premise which required a lot of physical servers taking up space, increasing maintenance costs and requiring a lot of people to run and solve the complexities.

### Cost

The running and maintenance cost for these several different servers were high. More automations or manual efforts were required for configuring application parameters for various environments. This led to the requirement of more people to handle them which meant a lot of staffing costs. With time and growing data, the number of servers would also keep increasing.

### Time

The client had to follow a lengthy release cycle process for fixes to be deployed on production. Also, maintaining the different environments and keeping them in sync was immensely time consuming.

### Effort

More dependency on hardware (physical servers) led to more manual efforts at maintenance, configuring and making updates.

### Operations

In the existing scenario, making one change to one application would mean changing all on top of the existing framework making it heavier to ship. Also, making updates as per customer requirement on a select environment would mean delaying the release cycle further for all.

## THE SOLUTION

> "Multiple isolated virtual operating environments created with Docker containerization helped in updating, making changes to the solutions and lighter shipping in each environment, since every change will be made to that specific container and not to the whole server."

Implementing Docker containerization on AWS solved the challenge of server dependency with added benefits of cloud. Multiple isolated virtual operating environments created with containerization helped in updating, making changes to the solutions and lighter shipping in each environment, since every change will be made to that specific container and not to the whole server. We put the idea into action by developing a solution for an application over AWS cloud with Universal image structure which the client could use across different environments.

### 1 Time and cost saving

The solution helped the client in faster continuous delivery. It facilitated in rapid releases across various environments. There was less maintenance cost, less resources required, complete automated system across environments leading to decreased cycle time and cost savings. Smooth and rapid deployments were possible using Docker registry approach. More time and effort saving could be done with code reusability.

### 2 Better support

The applications are more secure and scalable on the cloud. Application of Docker containerization on cloud helped the client in providing better support for their end customers. Application containerization also enabled changes to be indexed thus making it easier for the client to include them during releases. Another added advantage is that these isolated containers are easy to scale, modify and are user friendly.

## 3 Smoother operations

The solution enabled use of a single image across environments to configure applications by deploying Universal image making shipping lighter. We also developed python plugin, which would handle run time arguments (more than 50+) via cloud formation and would act as a universal image across all the environments. Now, applications are easy to upgrade for future releases and less effort is required in configuring applications for various end user needs.

# BUSINESS BENEFITS

- Applications are now easy to configure, update and enhance for future need.
- Future customizations like migration to microservices were made possible.
- Enhanced manageability from development to test to production stage.
- Cost reduction of 50-60% for running/ managing/ maintaining (support).
- Docker being an open source application is a cost effective solution.

# TECHNOLOGY SNAPSHOT

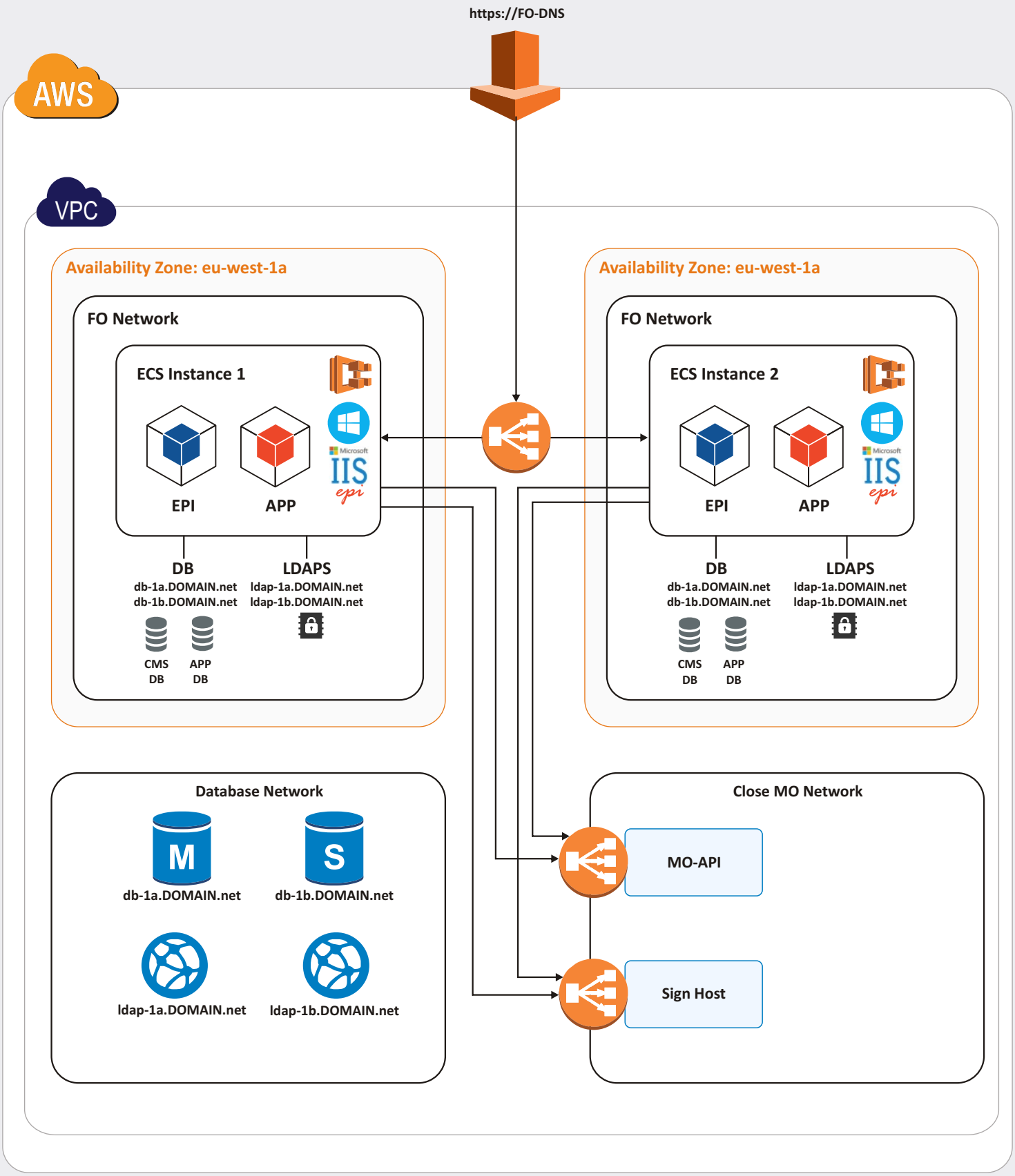
**TECHNOLOGY**
- Docker Containerization

**TOOLS**
- Docker/NewRelic/Splunk

**PLATFORM**
- AWS (ECS/Windows 2016R2)

**LANGUAGES**
- Python
- .Net

# Solution Architecture



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