ALTEN CALSOFTLABS
AN ALTEN GROUP COMPANY

Migrating Web Application to AWS Cloud

THE CLIENT

The client is a marketing leader in healthcare sector.

BUSINESS NEED

The client wanted ALTEN Calsoft Labs to do the following for them.

- Migrate the existing CapEX model (buy the dedicated hardware and depreciate it over a period of time) based web application to AWS Cloud Computing Environment
- Ensure the data security and high availability

TECHNOLOGY USED

- Cloud Environment: Amazon Web Service
- Server: IIS
- DBMS: MS SQL Server 2008
- Operating System: Windows Server 2008

SOLUTION DELIVERED

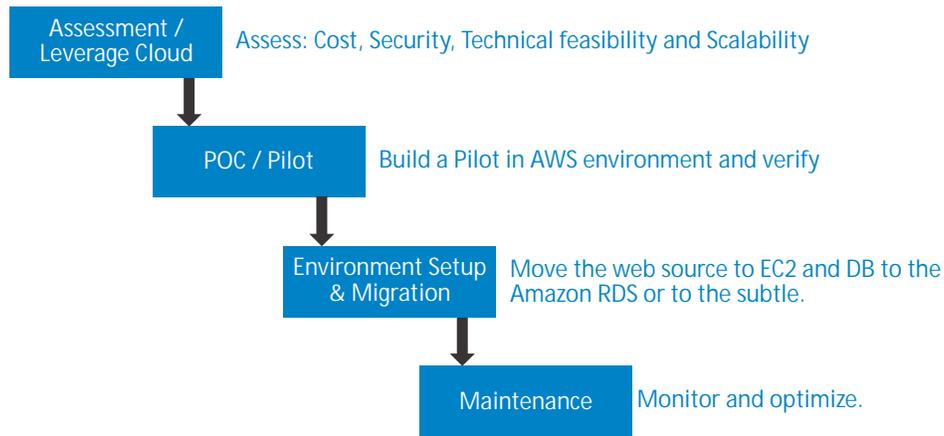The Data center specific Web application has been migrated to AWs in four phases, as shown in the above model.

Assessment/Leverage Cloud

A great quality time was invested to understand the existing environment and correlating/building a suitable AWS environment, which was achieved based on the following factors,

- Defining the required hardware and software environment over the AWS
- Ascertaining the cloud model private/public/hybrid
- Ensuring the data security and layout the compliance that is to be followed
- Analyzing the feasibility for Horizontal/Vertical scalability of the environment
- Comparing cost consumed in the CapEx / Data Center vs AWS Cloud environment, and finding the benefits of ROI

POC / Pilot

Based on the assessment, an EC2 instance and Amazon RDS – MS SQL Server 2008 was created. The WCF Service hosted in IIS and in windows services were deployed in the EC2 instance, following which the demo was given to stakeholders to ensure that the application functionalities were intact and performance of the application was very well in the acceptable criteria. During the POC phase, the EC2 instance type, RDS configuration, migration time and effort had been estimated. The tests ware iterated with different EC2 instance type and RDS configuration, till the acceptance criteria were met.

```
┌─────────────────┐
│  Assessment /   │   Assess: Cost, Security, Technical feasibility and Scalability
│ Leverage Cloud  │
└────────┬────────┘
         │
         ▼
   ┌──────────────┐    Build a Pilot in AWS environment and verify
   │  POC / Pilot │
   └──────┬───────┘
          │
          ▼
   ┌─────────────────┐   Move the web source to EC2 and DB to the
   │ Environment Setup│   Amazon RDS or to the subtle.
   │   & Migration    │
   └────────┬─────────┘
            │
            ▼
      ┌──────────────┐   Monitor and optimize.
      │  Maintenance │
      └──────────────┘
```

In our migration scenario, the iterative method was performed and identified as:

⊙ EC2: M4.10xLarge

⊙ RDS: db.r3.4xlarge, SQL Server Enterprise Edition

Environment Setup and Migration

The EC2 instance of Windows Server 2008 with IIS and Amazon RDS – MS SQL Server 2008 were created on a public cloud. The existing data from the Data center was exported to the RDS – MS SQL Server, and the Web services were hosted in the IIS. The physical data files that were required to support the application was moved to the EC2 instance. A public IP was created in AWS and associated with the EC2 instance. Route53 was used for creating the domain name and mapped to the public IP of the EC2 instance.

Maintenance & Optimization

In this phase the application performance had been monitored and automation had been employed for the Database backup and the hard drives.
Required alerts like Database backup start / complete action, continual high CPU usage had been configured and automated email was sent to the concerned stakeholders on that events.

BUSINESS BENEFITS

⊙ High availability

⊙ Maximum flexibility

⊙ Anytime anywhere use