



FINANCIAL  
SERVICES



APPLICATION  
HOSTING ON AWS



A LEADING MICROFINANCE INSTITUTION SAVED OVER 20% OF COST AND IMPROVED **SECURITY POSTURE BY MIGRATING THEIR LINE OF BUSINESS APPLICATION** (BRANCH & REPORTING SERVICES) ON AWS.

**Start Date** – 30th March 2019 **Status** – In Progress



## CLIENT OVERVIEW

The customer is a leading microfinance institution focused on providing micro loans to women customers predominantly in rural regions of India. The company follows a joint liability group (JLG) model of microfinance. The institution provides financial assistance through micro loans such as income generating loans to women engaged in small businesses.



## CUSTOMER OBJECTIVE

Customer was exploring a low CapEx infrastructure hosting and services for their application which serves as Reporting & Services application and Branch Service Application. This application is key to processing and tracking branch-wise business-related service requests.



## LANDSCAPE

- This is a .NET based application and the same will be accessed by mobile users and branch users.
- Mobile & Web Applications are public facing whereas Services Application is internal facing.
- Required servers for mobile/web/service application are Windows server.
- The shared DB server is Windows with SQL Server.



## SOLUTION APPROACH

- **Assessment & Solution**
  - i. After due diligence on the required infrastructure assessment which include hardware, security, network etc., the solution was designed.
  - ii. Windows EC2 instance were proposed for the Application hosting purpose and MS Windows with SQL was proposed for the database .
  - iii. Security posture for the applications hosted on cloud was a major concern for the customer which was addressed by allowing restricted access through EC2 security groups.
  - iv. Scheduling the UAT servers to be switched off during non-operational hours ensured cost optimization and reduction over the traditional approach.
  - v. Looking into the TCO calculation, initially Pay as per Usage model was suggested and once the full infrastructure is hosted, we can optimise the same .
  - vi. The customer had a requirement for 24x7 monitoring of their cloud infrastructure and the same was addressed by managed service support which includes the monitoring, support & management.
  - vii. Connectivity to instances on cloud from multiple branch locations & accessing the SSRS URL hosted on DB server were addressed by establishing secure IPsec tunnels.
- **Deployment**
  - i. After the solution was agreed upon, smooth deployment process was initiated which also included educating the customer on the ease to move and start on cloud.
  - ii. The deployment planner had all the milestones and timelines mentioned which ensured that the project was completed on time with the sheet.
- **Validate**
  - i. Post successful deployment of resources on cloud, the infrastructure was validated on all the pointers (security, accessibility, etc.) before handing it over to the client.
  - ii. After the application was tested by the customer on all the parameters, a cut-over date was agreed for Go-Live.
  - iii. Post Go-Live, a validation tracker was sent to the customer, which ensured all the agreed activities had been done.
- **Transition**
  - i. Smooth transitioning and handover to support was ensured by having proper KT sessions with the team and introducing them to the customer.
  - ii. Inventory, Credentials, Security Status, Server Hardening & Patching, best practices operational checklist were handed over.
- **Tools and services used**
  - i. Native AWS monitoring services (CloudWatch, CloudTrail, Config) for auditing and monitoring. Also, the Nagios XI, one of the third-party monitoring tools, was configured to monitor the infrastructure .
  - ii. AWS System Manager was enabled for management of the system requirement like automatically collect software inventory, apply OS patches, create system images, and configure Windows operating systems.
  - iii. Integration of both Native and other monitoring tools with ITSM platform (Symphony Summit) made a good experience for real-time incident management. Even, change and CI items were managed properly.
  - iv. Centilytics is used as the cloud management platform for providing better visibility and managing spends on the cloud, Also, Reporting, Governance was made easy through this tool.



## OS PLATFORMS

Windows

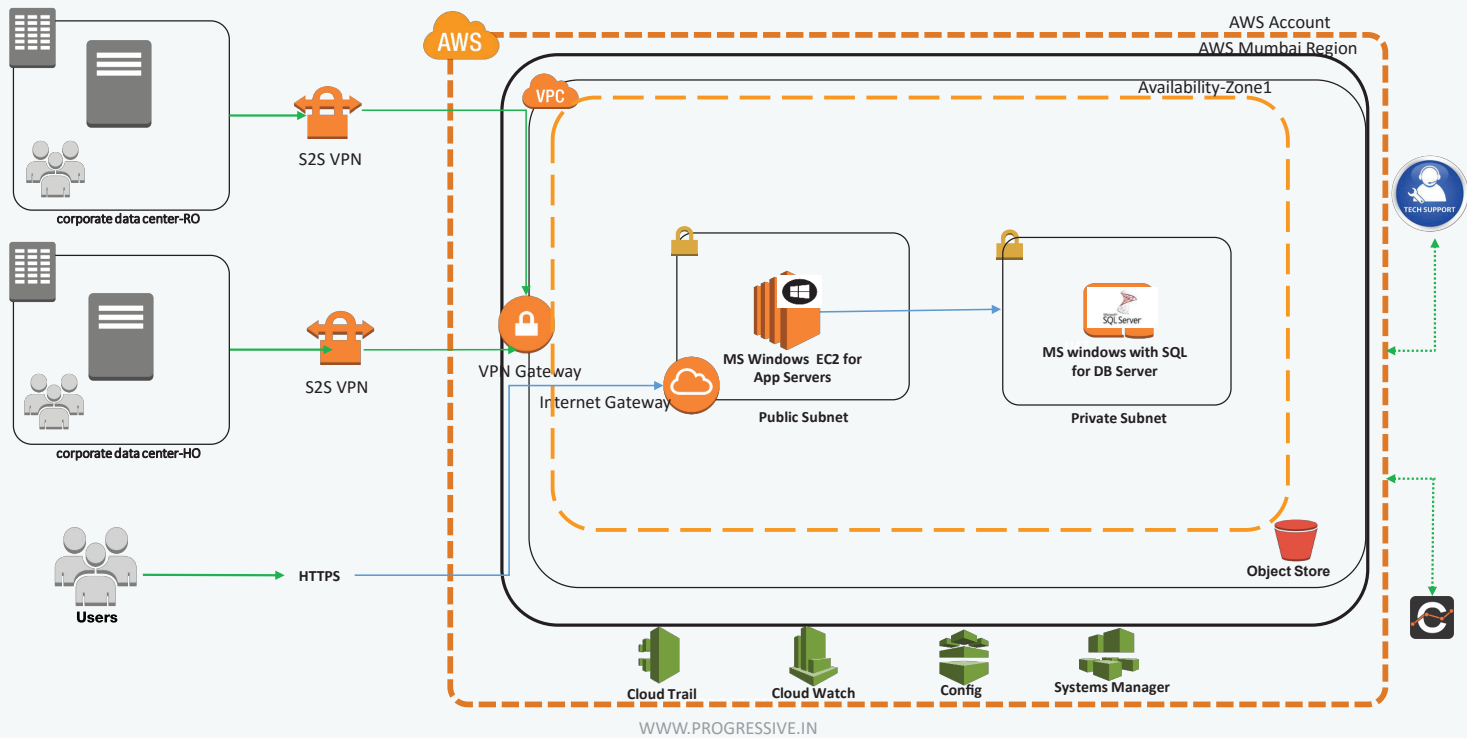


## DESIGN CONSIDERATIONS

- Segregation of subnets based on workload.
- S3 bucket was created for storing objects.



## SOLUTION ARCHITECTURE



## OPERATIONAL BEST PRACTICES

### 1. Patching Automation

AWS Systems Manager Patch Manager automates the process of patching managed instances with security-related updates. For Linux-based instances, you can also install patches for non-security updates.

### 2. Backup & DR

For Backup of EC2 instances, native image based incremental backup will be triggered & which will further be integrated with our in-house auto-backup tool for automatic scheduling & alerting for every successful & unsuccessful backup.

### 3. Firewall & Security

AWS EC2 Security Groups will act as the firewall to allow the access only from defined IPs in the security rules.

VPC Flow logs have also been proposed (as a future roadmap) which is a feature that enables you to capture information about the IP traffic going to and from network interfaces in your VPC.

### 4. WAF & Security

It is highly recommended to have a WAF in place for protection of all public facing websites from Top 10 Vulnerability attacks.

AWS Native Service such as GuardDuty has also been proposed with the architecture. GuardDuty is a threat detection service that continuously monitors for malicious or unauthorized behavior to help protect AWS accounts & workloads.

### 5. Tagging Recommendations

It is highly recommended to tag all AWS Resources.



## SERVICES USED

EC2

VPN GATEWAY

SECURITY GROUPS

CLOUDWATCH

CLOUD TRAIL

SYSTEM MANAGER

AWS CONFIG

S3



## OUTCOMES

- Accessibility to production server became easy for their remote offices.
- Automation of the EC2 snapshot has eased the snapshot management.
- Security posturing and cost governance using Centilytics – Cloud Management Platform has been made easy for the customer.
- By availing the 24x7 managed service, it became hassle-free for the customer to get any remote support.
- The cost is brought down by 40% of total estimation by shutting down during non-development hours.

The customer has opted 24x7 managed service support where Progressive Infotech is offering Proactive Monitoring, support, advisory, and management of the infrastructure. As part of the managed service deliverables, Progressive Infotech is committed in providing better customer experience through Alert Management, Security Controls, Infrastructure & Cost Optimization. Server start/stop has been enabled for the required business hours.