POWER GENERATION & UTILITIES

WINDOWS WORKLOAD MIGRATION TO AWS

HELPED ONE OF THE LEADING PRIVATE POWER GENERATION BUSINESSES IN INDIA WITH **WINDOWS WORKLOAD MIGRATION TO AWS.**

Start Date – 3rd January 2018 **Status –** In Progress

CLIENT OVERVIEW

The company is an effective and one of the leading private power generating businesses in India. In developing 5400 MW of coal-based Thermal Power (2700 MW at each site) in Amravati and Nasik, the power-generating firm has already invoked an investment of INR 17000 cr.

CUSTOMER OBJECTIVE

- The customer was looking for lift-shift Windows workload to AWS due to a retiring hardware on-premise.
- Direct Connect connections would be utilized for data flow between the on-premises infrastructure and AWS.
- The business drivers for migrating to cloud from an on-premise setup was
  - o Reducing Capital Expenditure (CapEx): Customer with its on-premise IT infrastructure setup needed to procure hardware based on its growing requirements. This included compute, storage, and networking devices. Moreover, organizations needed to retire and refresh hardware as soon as the new hardware is available to take advantage of improved performance and efficiency, which is quite costly.
  - o Business Agility: Customer existing infrastructure was prone to downtime and scaling the infrastructure was a huge challenge.
  - o 24x7 Remote Monitoring and Support was required for the provision infrastructure to monitor the workload and report and remediate any anomalies looking into the criticality of business applications
  - o Resource Housekeeping: Customer was finding it difficult to keep track of existing on-prem resources so they decide to migrate it to cloud, where at the time of migration multiple non-critical workloads can be discarded.

LANDSCAPE

- Total 46 Production servers and 9 Dev/Test/QA ones. Mostly Windows including DC, AD , Tally, IIS websites, Windows Native FTP except for the SAP infrastructure which is based on RHEL hardware
- VMWare virtualization ESXi 5.5 is used for hosting the VMs.
- Two critical workloads are running –
  - o SAP
  - o Microsoft DC and ADC
  - o Tally
  - o IIS Website and FTP
  - o NexGen WAF (Fortinet and WAF)

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 Domain Controller and Additional Domain Controller purpose.

iii. Windows EC2 instance were proposed for the Microsoft Tally Workloads purpose.

iv. Windows EC2 instance were proposed for the Application hosting purpose and MS Windows with SQL was proposed for the database .

v. Windows EC2 instance were used for the Native Windows FTP solution

vi. Linux servers were proposed for the firewalls

vii. RHEL servers were proposed for migration of SAP workload

viii. Security was one of the main focus so we Proposed third party Firewall and next generation WAF.

ix. All the servers were kept in the private subnet and all the traffic from internet was coming though the firewall

x. For enhancing the security to a further level we used Security Groups with the EC2 Instances.

xi. Along with above security measures we have also used Basic Free-Tier Guard Duty.

xii. 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 .

xiii. The customer had a requirement for 24*7 monitoring of their cloud infrastructure and the same was addressed by managed service support which includes the monitoring, Support & management.

xiv. To address the connectivity issues all the Branch Offices were connected through MPLS with HO

xv. Direct Connect link was proposed between the corporate DC and AWS VPC to maintain the connectivity and give access to the servers in private subnets

- **Deployment**

i. After the solution was agreed upon, smooth deployment process was initiated which also included educating the customer on the ease to move & 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

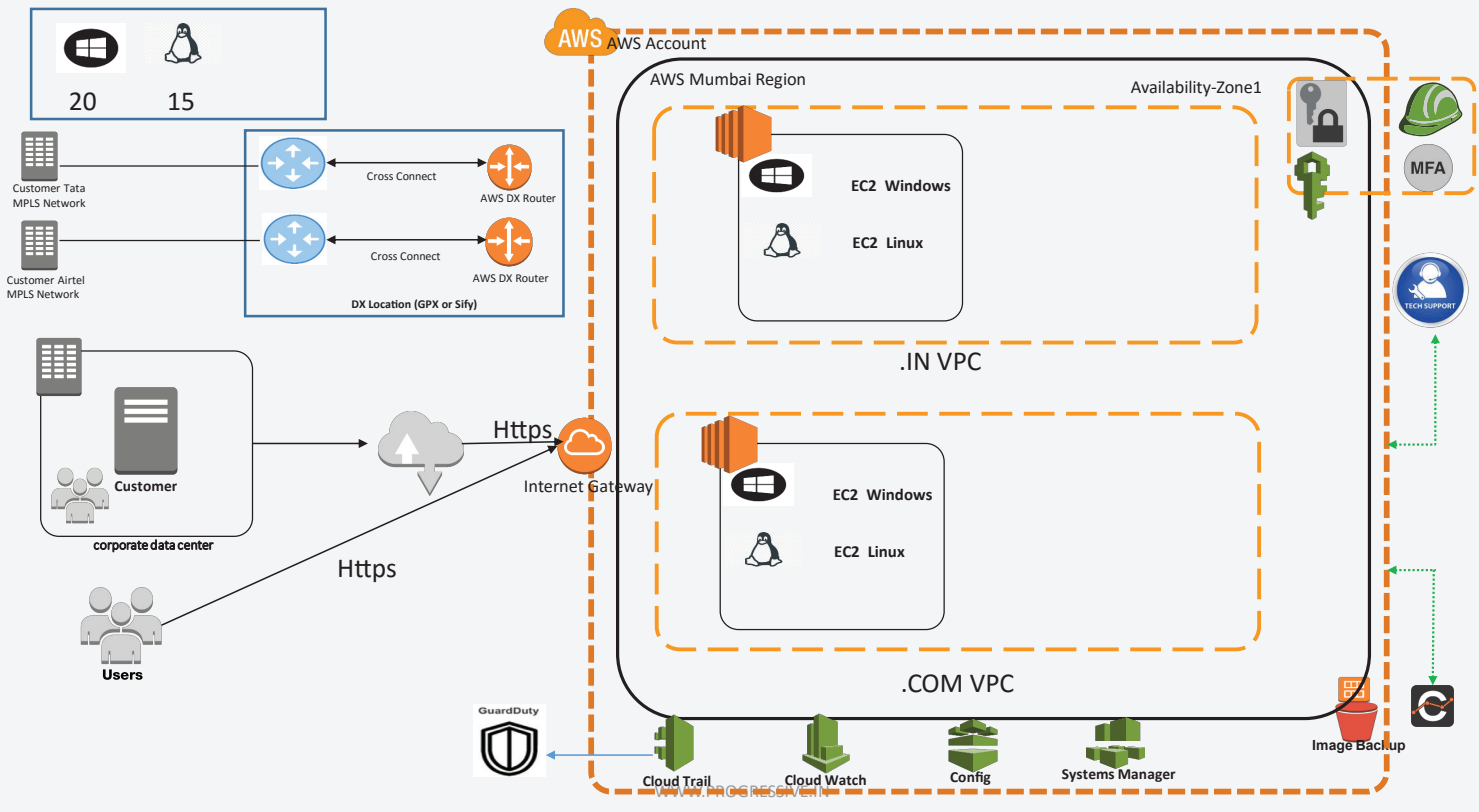
iii. Integration of both Native and other monitoring tools with ITSM platform (Symphony Summit) made a good experience for real-time incident management. Even, change and CI items were managed properly.

iv. Centilytics is used as the cloud management platform for providing better visibility and manging spends on the cloud, Also, Reporting, Governance was made easy through this tool.

OS PLATFORMS

Windows and Linux

SOLUTION ARCHITECTURE



SERVICES USED

DIRECT CONNECT | THIRD PARTY NEXTGEN FIREWALL AND WAF | SECURITY GROUPS

VPC | GLACIER | S3 | CLOUDWATCH | CLOUDTRAIL | EC2 | EBS

EBS SNAPSHOTS | CONFIG

OUTCOMES

- DC and ADC Performance and availability also improved post migration
- Performance of the Windows application has improved after migration to latest Windows platform. Also, the EC2 performance being superior than the on-premise server has given a boost to the user experience.
- Performance of the SAP Environment has also improved post migration to latest RHEL platform. Also, the EC2 performance being superior than the on-premise server has given a boost to the user experience.
- As Managed Services Provider we have helped the client optimize cost of the infrastructure by 30% using Cloud Management Platform recommendations.
- A continuous monitoring and Support & Remediation has helped ensure proactive alerting of infrastructure issues.

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. Currently customer has opted the consumption mode as Reserved Instance (RI) for the whole infrastructure.