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Deploying and Managing On-premises IT Infrastructure on AWS Cloud for a Leading Banking and Financial Company

CASE STUDY

About Client

Leading asset management company

Industry

Capital Markets

Service

Cloud

Business **Need**

The client wanted to move its It infrastructure on Cloud to ensure a stable, secure, and flexible IT infrastructure that could be available around the clock to implement intelligent automation solutions. These automation solutions were required to handle high-volume requests, which would help with the service level consistency and optimization of workforce alignments.

Business **Challenge**

- Needed flexible IT infrastructure to support growing economy
- Scalability issues with applications
- Availability issues with application hosting
- Low performance issues with applications
- Agility issues
- Needed better security measures to handle data security breaches
- Needed cloud native databases like Amazon Aurora instead of existing licensed based databases
- Needed better and quicker data retrieval
- Needed pay-as-you-go model for cost optimization
- Required logical segregation of network

Business **Solution**

Our deep domain expertise and proven credentials backed by our AWS Advanced Consulting Partner status made us a partner of choice for our client to deploy and manage their on-premises infrastructure on AWS cloud and leverage the many cloud benefits.
Following services were shortlisted for deployment on the AWS cloud:

- Amazon Identity and access management
- Amazon Simple storage service
- Amazon EC2
- Amazon VPN
- Amazon Relational Database service
- AWS Trusted Advisor
- Amazon CloudWatch
- Amazon KMS
- Amazon CloudTrail
- Amazon Flow log
- Amazon Guard Duty
- AWS Config
- AWS Inspector
- Amazon Cloud Formation
- AWS Elastic Kubernetes service
- AWS Lambda
- AWS Relational Database service AWS Glacier

Solution **Approach**

Our solution approach involved an accurate plan that entailed comprehending the current challenges of the client and creation of a roadmap to where the client intended to reach. We proposed a complete upgrade. Hosting monolithic IIS MSSQL standard application on AWS was built using the below listed well architected standards:

- Single source of truth with separate landscape for production and non-production environment
- Next generation firewall to protect against Gen-5 attacks
- Communication of App and DB traffic via NGFW
- Identity and access management with least privilege mechanism, MFA for the user credentials
- SQL log shipping for HA and Near DR and direct connect using different ISP for redundancy
- HA for required applications and its placement behind the internal application load balancer
- VPC endpoints to access AWS services privately from AWS LAN network instead of letting them traverse internet. Example of such services- EKS cluster, AWS S3
- Snapshot policy for all the servers apart from the Commvault backup that has been configured on a virtual machine
- Configuration of Application servers at multiple AZ with load balanced using AWS Application load balancer
- Enablement of CloudTrail logs for the user activity logging for customer account and

moved the logs to S3 bucket for audit purpose and long-term retention
- Kubernetes Cluster deployment
- Configuration of Servers with auto start/stop mode for cost optimization
- Restriction of access to Production servers via bastion hosts for additional layer of security
- Configuration of Lambda for achieving custom DNS query resolving from on-premises to Application load balancer
- Configuration of AWS inspector for findings that are non-compliant to CIS benchmarks in the architecture components deployed
- Using AWS Config for CMDB management
- Configuration of Guard Duty for analysis of DNS, VPC and CloudTrail logs
- Configuration of Snapshot Lifecycle Policy for the servers in AWS
- Configuration of VPC flow logs to monitor traffic coming in to the NIC of the server and outgoing traffic

Third-party **Tech-stack**

- Third party monitoring using Site 24 x 7
- Incident management using Fresh Service
- Commvault for backup using native snapshots
- Access management using Acros
- Next-gen firewall using Palo Alto
- Firewall and log management using Minefield
- Third party SaaS using Cloudflare
- WAF Application monitoring using New Relic

Platform

Operating System

- Windows 2008 R2 Datacenter edition (Custom Hardened Image)
- Windows 2012 R2 Datacenter edition (Custom Hardened Image)
- Amazon EKS Images
- Windows 2016 Datacenter edition (Custom Hardened Image)
- Centos 7

Database

- MSSQL Standard Edition 2012
- MSSQL Standard Edition 2014
- Postgre SQL RDS 11.5
- MSSQL Standard Edition 2014
- Oracle RDS Standard 12.0.0

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Business **Impact**

Incident management
- Service desk web portal for managing the incidents, alerts, sending alerts to user
- 24 X 7 help desk on Phone, Email, web-based support for customers
- Users enabled to raise tickets via email, self-service portal, phone, in person as per ITIL standards

Security
- Multi-level data security with password and data encryption
- Enterprise Grade Next generation firewall implementation (Palo Alto)
- Advanced Threat Prevention
- Advanced cyber security

Reliability
- Durable data storage provided by Amazon S3

Cost Optimization
- Servers can now run only for the duration as per requirements
- Reduced capital expenditures on hardware, software

Server Monitoring
- A quick weekly summary on the status and performance of server

Report
- Availability summary, Busy Hours, Health Trend, Performance reports
- History of all interactions between customer and help desk

Productivity
- Improved efficiency by freeing up valuable financial and IT staff resources

DR
- Availability of data restoration of applications on cloud in case of outages

About **NSEIT**

NSEIT Limited is a digital native technology company that engineers world-class solutions to help our global customers accelerate their digital transformation journeys. Our key service pillars are Application Modernization, Business Transformation, Data Analytics, Infrastructure & Cloud Services, and Cybersecurity, through which we create intuitive digital experiences and tangible business impact. For over two decades, our innate drive for excellence has made us the partner of choice for global organizations. At NSEIT, we fuel digital progress.

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