

Migration to AWS: Assessment and Planning

Customer: One of India's top Finserv company

About customer

The customer offers a broad range of financial products and services to diversified customer segments and has a sizable presence in the large retail market segment through its life insurance, housing finance, mutual fund and retail financial businesses across domestic and global geographies.

The customer, together with a strong network of sub-brokers and authorized persons, serve approximately 12-lakh strong client bases through 10,052 employees based out of 448 offices across all major cities in India.

Their business comprises of multiple asset classes broadly divided into Credit (retail and corporate), Franchise and Advisory (asset and wealth management, capital markets) and Insurance (Life and General insurance).

Cloud computing technology has gained significant momentum in the financial sector and the customer is looking at building a digital organization to align technology with evolving customer needs and behaviour. Though they have been on the cloud from the beginning, cloud migration has accelerated at a rapid pace and they see the urge to be at par with the growing needs.

Problem statement / Objective

With such a manifold existence, the customer realized it was extremely necessary for them to set up an environment that would not just support diverse applications but also cater to teams and/or projects across multiple locations for their domestic as well as global customers. This was possible only if they migrated their applications to the cloud.

Powerup's scope of work was to carry out a cloud readiness assessment in order to understand how well prepared the customer is for the technology-driven transitional shift. They were to define, plan, assess and report the customer's readiness via Migration Readiness Assessment & Planning (MRAP).

Solution

The customer's MRAP Process: Migration Readiness Assessment & Planning (MRAP) is the process of assessing the current on-premise environment in order to analyze how ready it is to migrate to the cloud and every organization intending to migrate to the cloud must undergo

this. The analysis explains how the entire process works and in what order should the events occur.

The customer carried out MRAP for almost 250 applications and had intended to migrate all the applications that are a part of this assessment.

Pre-requisites: The first step in planning the MRAP exercise was to understand the number and type of applications, identify the appropriate stakeholders for interviews, tools to be installed, different types of installations, creation of project plan, to name a few.

To begin with, RISC networks, an application discovery tool, was configured and installed on customer environment. It allowed all customer-specific data to be kept onsite or in a location of the customer's choice to gather data from the on-premise existing in the customer environment. Application discovery service helped collect hardware and server specification information, credentials, details of running processes, network connectivity and port details. It also helped acquire a list of all on-premise servers in scope along with their IP addresses, business application names hosted on them and the stakeholders using those apps.

Deployment and assessment: Once the application is deployed and have the necessary access, servers need to be licensed so that the RISC tool can start collecting data. It is recommended to have the tool collecting data for at least 2 weeks so that a significant amount of information is captured.

At customer's organization, a total of 363 servers were licensed and almost 216 applications that belonged to 7 different lines of businesses (LOBs) were covered in the process.

Application stacks were built for all applications in scope by grouping applications based on connectivity information. Assessment and group interviews were conducted with application users, namely; application team, network team, security team and DevOps team to cross verify the data provided by the IT team and application team with RISC's grouping and bridging the gaps if any. A proposed migration plan was to be developed post-analysis that would state identified migration patterns for the applications in scope, create customized or modernized target architecture to plan a rapid lift & shift migration strategy.

MRAP Deliverables

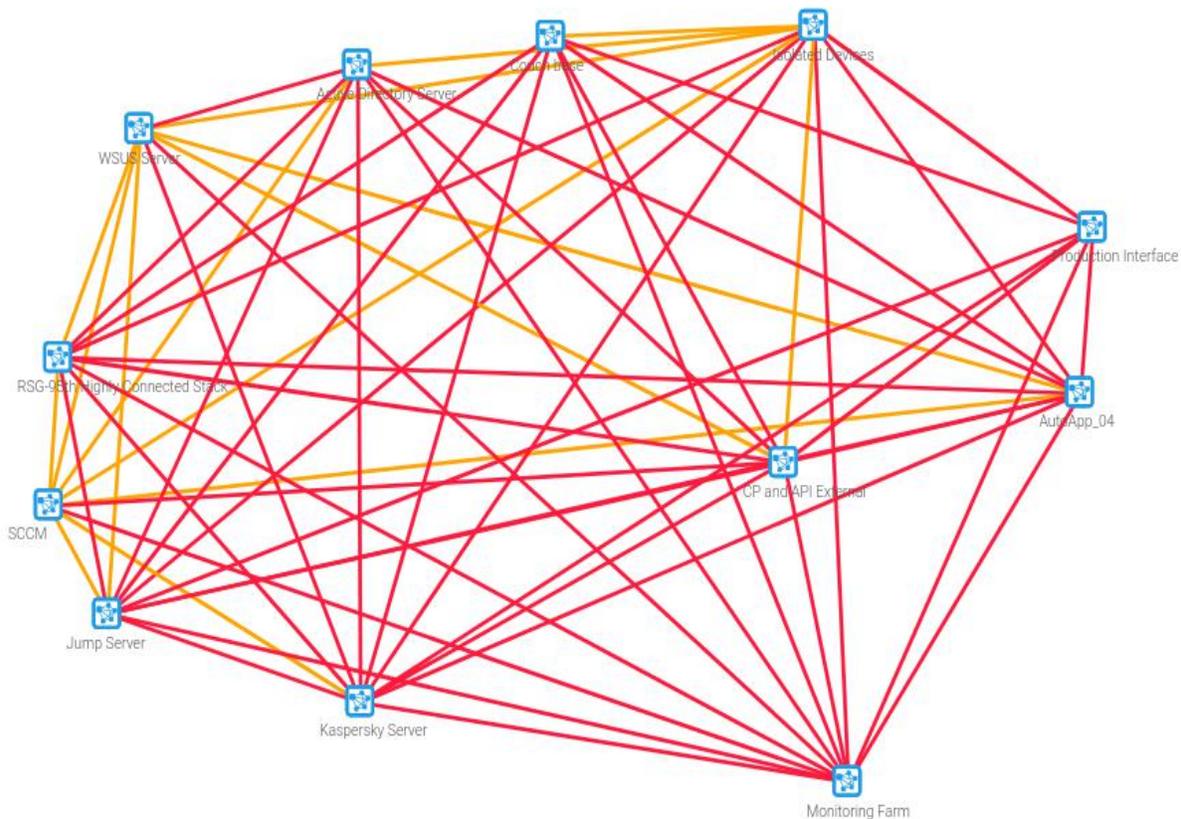
A comprehensive and detailed MRAP report included information on the overall current on-premise architecture, infrastructure and architecture details for all identified applications, suggested migration methodology for each application, migration roadmap with migration waves, total cost of ownership (TCO) analysis and an executive presentation for business cases.

The purpose of an AWS Landing Zone is to provide a framework for creating, automating, baselining, and maintaining a multi-account environment. This is considered as a best practice usually recommended before deploying applications on AWS.

The customer, with Powerup' guidance, decided to set-up and maintain the following AWS Landing Zone accounts –

- Organization account - master account
- Core accounts - Shared Services Account, Centralized Logging Account
- Business unit accounts - UAT Account & Production Account

Topology Diagram from RISC tool showing the interdependence of various applications and modules:

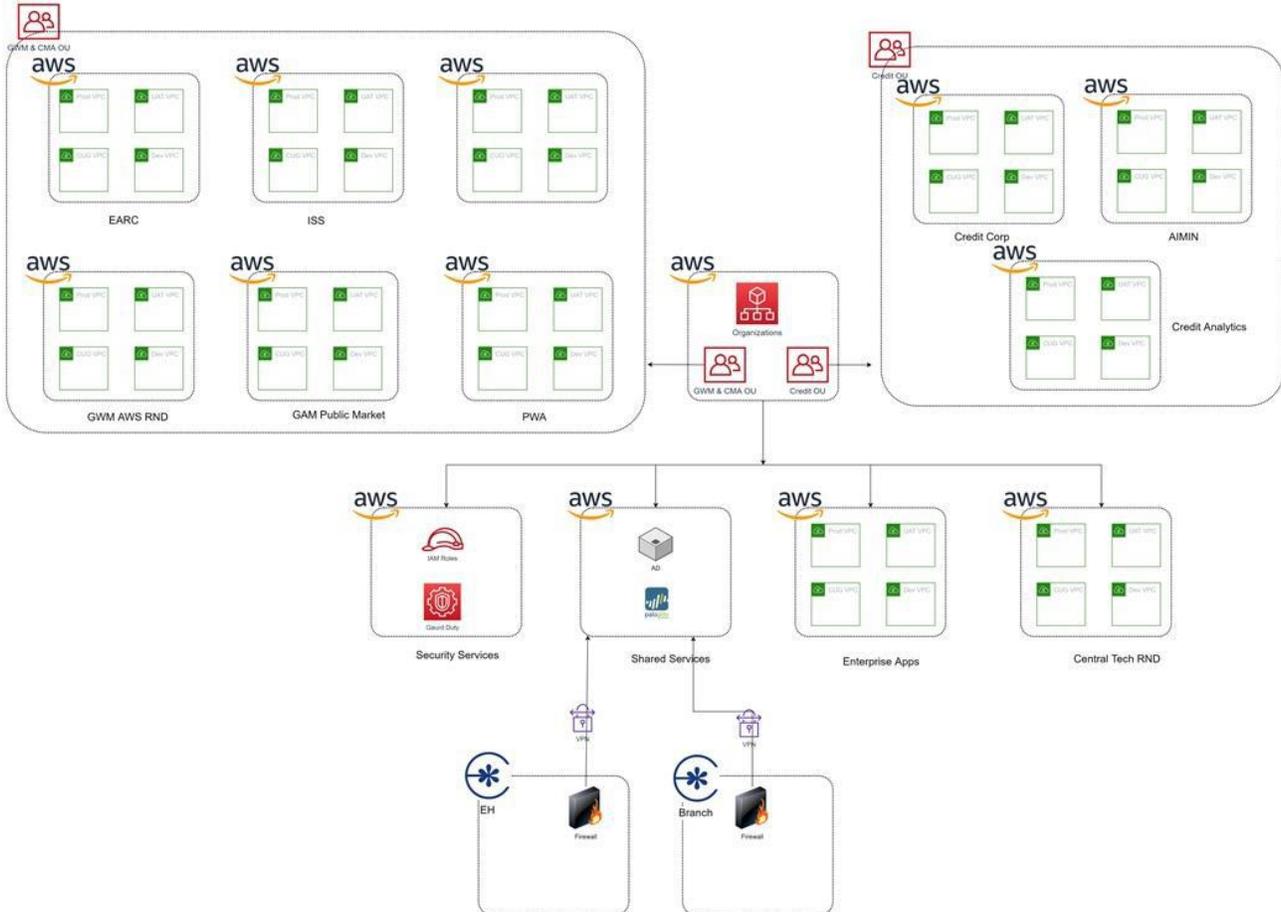


The report would also provide details on each application across LoBs that would cover the following information:

- Current Application Architecture
- To be Architecture on Cloud
- Current Application Inventory Details with Utilization.
- Recommended Sizing on Cloud
- Network Topology for each application.

- Migration Methodology - 7 Rs of Migration - Rehost, Refactor etc.

The MRAP report depicted in-depth details on the **customized AWS Architecture for the customer:**



Identifying the migration pattern for all applications was the key. Target architecture for applications was created in such a manner that it could be changed or improvised, if required, in the future. This architecture catered to not just application and network deployment but also covered non-functional requirements, data security, data sizes, operations and monitoring and logging.

A VPN tunnel setup between the customer House and AWS Transit Gateway while the Transit Gateway was deployed in the Shared Services account to communicate with Virtual Private Networks (VPC) from other accounts.

Sensu Monitoring Server and Palo Alto Firewall were deployed in the Shared Services Account.

Shared services account was used to host Active Directory (AD) and a bastion host.

Production environment was isolated as the customer had several applications running development, test and production from the same account.

Key Findings from the customer MRAP

- Current Infrastructure provisioned was utilized to only 30%.
- Close to 20% servers are already outdated or turning obsolete within the next one year.
- OS Split - 70% Windows, 20% RHEL, 10% OpenSource Linux Distributions.
- Database (DB) Split - 70% SQL Server, 20% Oracle, 10% - MYSQL, PostgreSQL, MariaDB, MongoDB. Databases are being shared across multiple applications.
- Upto 76 applications are running on the same servers.
- Multiple DB engines on the same DB server.
- Servers are being shared across LOBs
- Close to 20% Open Source applications are running on Windows/RHEL - this can be easily moved to Amazon Linux (opensource) during migrations.
- Close to 20% of applications can be moved to new AMD/ARM architectures to save cost.
- Upto 50% savings on TCO can be achieved over the next 5 years by moving to AWS

Outcome/Result

With the MRAP assessment and findings in place, the customer now has greater visibility towards cloud migration and the benefits it would derive from implementing it. With a rapid lift & shift migration strategy, they could now look at better resource utilization, enhanced productivity and operational efficiency going forward.

Summary

The customer offers a broad range of financial products and services to diversified customer segments that include corporations, institutions and individuals across domestic and global geographies. Financial service providers have long been at the forefront of cloud adoption and the customer has been no exception. Cloud migration has accelerated at a rapid pace across multiple business groups and the customer plans to stay abreast with the growing surge. The idea was to migrate their applications one- by- one to AWS.

For this purpose, a migration readiness assessment for almost 250 applications was conducted which included stakeholder interviews and tool data analysis. A rapid lift and shift migration were intended to be implemented as quickly as possible.

Powerup's scope of services was to define and plan a business case for the Migration Readiness Assessment & Planning (MRAP) by gathering data from the existing setup and validating the same in terms of understanding how well equipped the customer is for cloud migration. An MRAP report would then be drafted which would act as a roadmap to the actual migration.