aws migration evaluator

Formerly TSO Logic

Business Case Summary

Acme Inc.

Migration Evaluator

Oct 6, 2020

Table of contents

aws migration evaluator
Formerly TSO Logic

Overview

Scope

- 1,220 Servers instances observed
  - 1123 virtualized servers
  - 97 bare metal servers
- 371.4 TB of attached storage

Method

- Agentless Collector

Collection Period

- Oct 15 to Oct 26, 2020

Licensing

- SQL Tagging
  - Tagging completed via auto-discovery from TSO Logic

Business Data

- Environment Groupings
  - 100% servers classified by Environment
- Application Groupings
  - 60% servers classified by Application/Role

aws migration evaluator
Formerly TSO Logic

Executive Summary

The **15.3%** zombie server count offers a good opportunity for savings in this assessment. **827** servers had peak CPU utilization under **20%** over the **12** days we collected, these are great candidates for right-sizing onto more efficient EC2 instances to help eliminate over-provisioning.

	On-Premises *(annual)*	AWS *(annual)*
Compute	$1,529,586	$1,069,397
Storage	$727,917	$318,611
Total	**$2,252,503**	**$1,388,008**
38% Savings via TSO Logic Right-Sizing only		

Modeling

- 3 YR Standard RI/Instance Savings; All Upfront payment
- Storage modeled to EBS
- SQL Licensing costs excluded
- Costs in USD
- US East (N. Virginia)

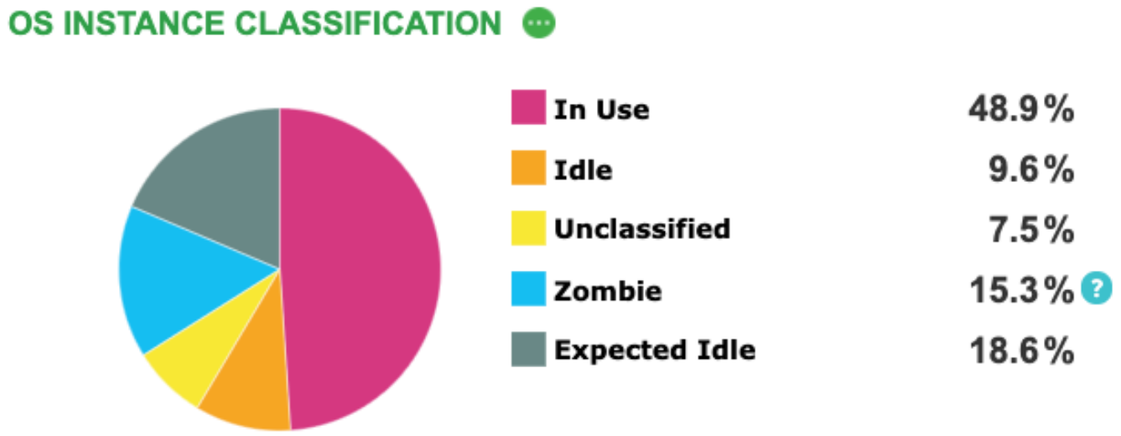
Potential Refinement

- Further confirmation on license mobility for SQL servers will allow for more accuracy in AWS modeling
- Using Environment tagging to target servers for On-Demand modeling (dev/test workloads)

aws migration evaluator
Formerly TSO Logic

Data Insights

Overview of the percentage of time servers were used, environment insights & licensing details.



Environment & Licensing	
Zombies	15% (305 servers removed from future state modeling)
SQL Enterprise	59
SQL Standard	21
Windows Servers	647
Linux Servers	573

- **In Use** – Estimated percentage of time the servers delivered business value by being on and having their CPU utilization above 5% or above 300 MHz for VMware VMs.
- **Idle** – Estimated percentage of time the servers were on but did not deliver business value by having their CPU utilization below 5% or below 300 MHz for VMware VMs.
- **Unclassified** – Percentage of time servers were on but had no metrics available to determine if they were idle or in use.
- **Zombie** – Percentage of servers that were expected to deliver business value, but did not. These are candidates for retiring and not migrating to AWS.
- **Expected Idle** – Percentage of servers expected to not be in use but deliver business value in different ways. Examples include templates or disaster recovery.

aws migration evaluator
Formerly TSO Logic

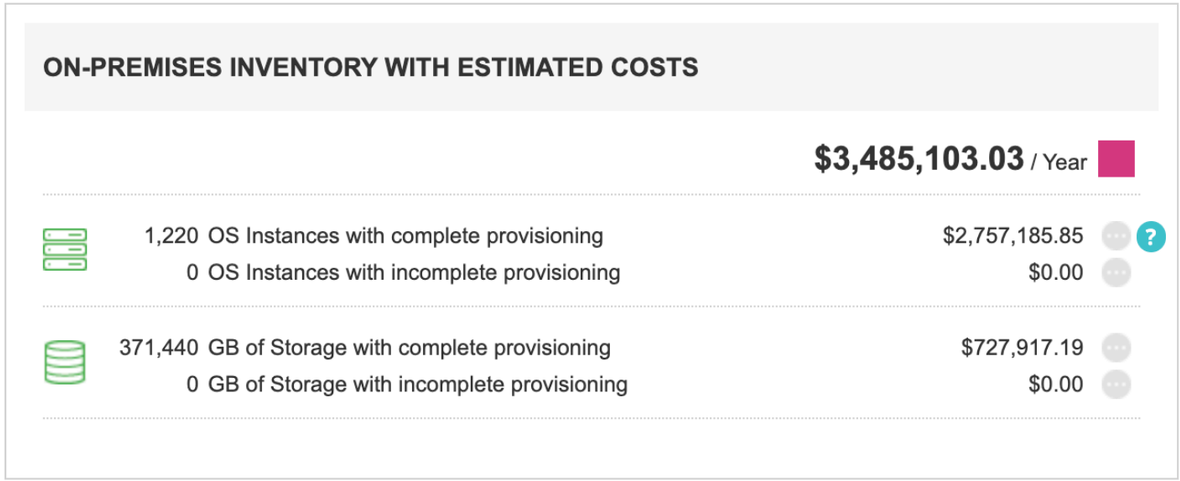
On-Premises Annual Cost Estimation

Included in On-Premises Cost Estimation

- Server hardware based on AWS benchmarks
- Attached storage
- Power
- Software licensing: OS (if applicable)
- MS SQL Server licensing (if applicable)

Excluded in On-Premises Cost Estimation

- Employee costs
- Migration tools
- Professional services
- Shared storage
- Software outside of OS and SQL
- Networking



Currency is in USD, annually. TSO Logic benchmark costs were used for calculating on-premises estimations. OS and SQL licensing can be configured to customer actuals. On-premises licensed SQL cores are counted at the operating system level verses host @ $3,300 per core; operating system @ $300 per OS.

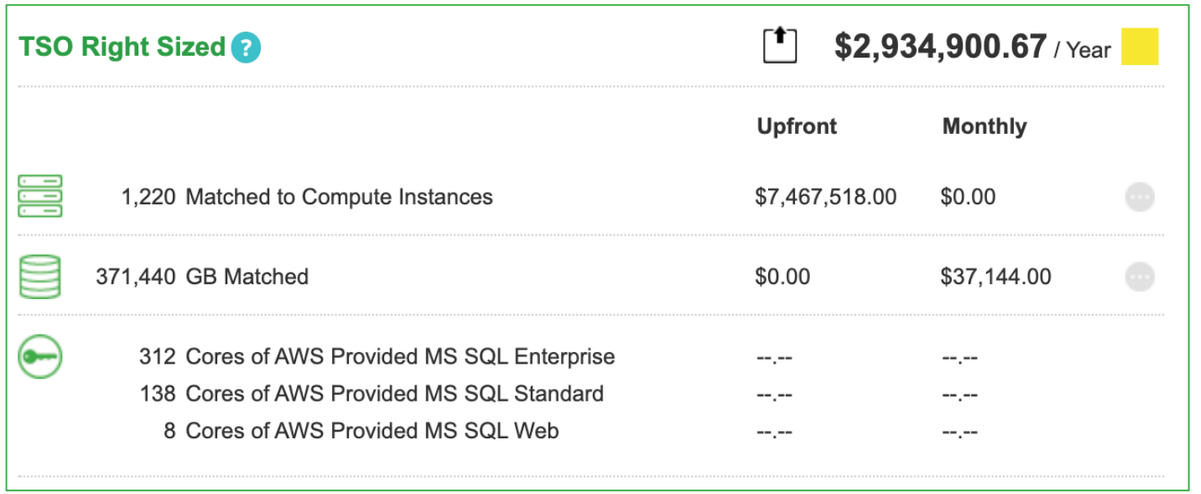
aws migration evaluator
Formerly TSO Logic

3 YR Standard RI/Instance Savings Plan

(Windows Server & SQL Server Included)

AWS Modeling Parameters

Location:	US East (N. Virginia)
Instances:	• 3 Year • Standard Reserved • All Upfront payment
Modeling:	• TSO Right Sizing
Licensing:	• Windows licenses included • SQL licenses included
Currency:	• USD annually
Savings Plan Rate Estimate:	• $248.15 Commit / Hour



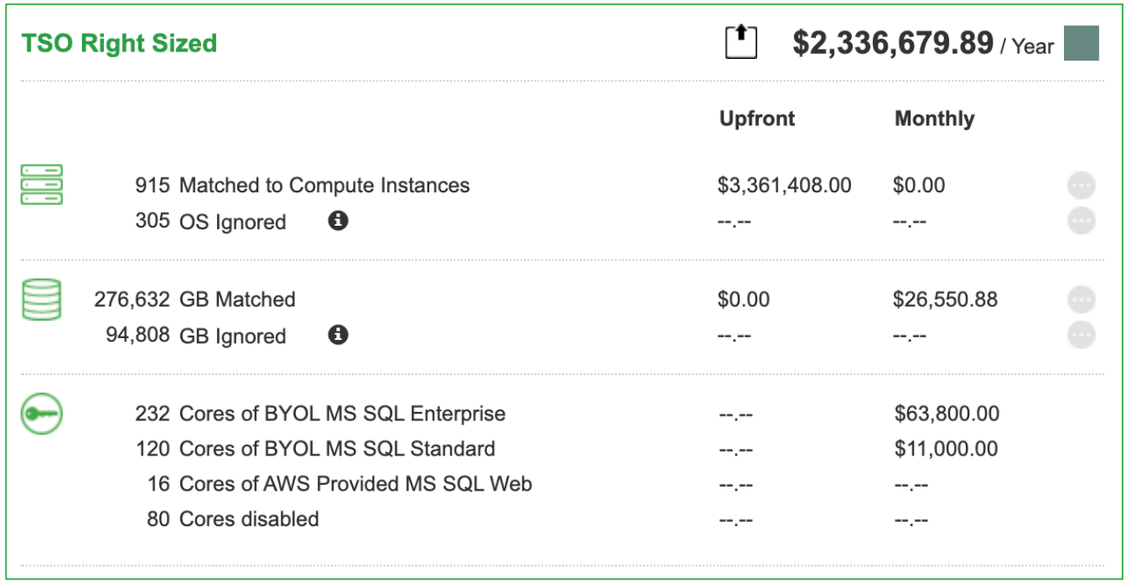
While this doesn't take into account the cost of change, migration tools, and services, the intent of our software is to provide a directional business case based on your actual data.

3 YR Standard RI/Instance Savings Plan

(Windows Server Included, SQL Server BYOL)

AWS Modeling Parameters

Location:	US East (N. Virginia)
Instances:	• 3 Year • Standard Reserved • All Upfront payment
Modeling:	• TSO Right Sizing
Licensing:	• Windows licenses included • BYOL SQL Server @ $3300/core (Ent) and $1100/core (Std)
Currency:	• USD annually
Savings Plan Rate Estimate:	• $127.91 Commit / Hour



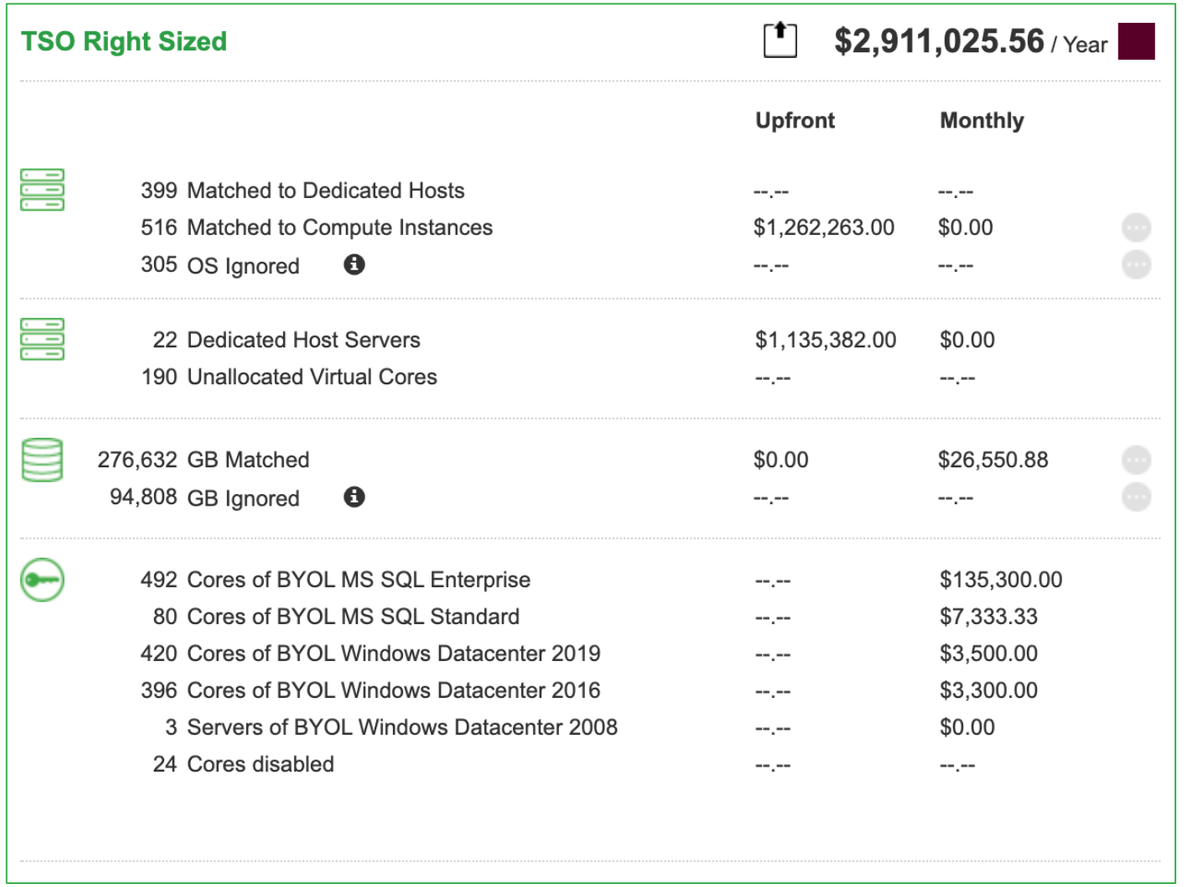
While this doesn't take into account the cost of change, migration tools, and services, the intent of our software is to provide a directional business case based on your actual data.

3 YR Dedicated Host Model

(Windows and SQL Server BYOL)

AWS Modeling Parameters

Location:	US East (N. Virginia)
Instances:	• 3 Year • Standard Reserved • All Upfront payment
Modeling:	• TSO Right Sizing
Modeled to Dedicated Host:	• Windows Server 2008, 2012, 2016, 2019 • SQL Server Std & Ent
Dedicated Host Licensing:	• BYOL Windows Server @ $100/core • BYOL SQL Server @ $3300/core (Ent) and $1100/core (Std)
Modeled to Compute Instances (EC2)	• Any non-Server Windows (Windows 7, 10, Vista) • Any non-Windows (Linux, RHEL)
EC2 Licensing:	• Windows licenses included
Currency:	• USD annually
Savings Plan Rate Estimate:	• $91.23 Commit / Hour



While this doesn't take into account the cost of change, migration tools, and services, the intent of our software is to provide a directional business case based on your actual data.

Blended Model – RIs & On-Demand

(SQL Server BYOL)

AWS Modeling Parameters

Location:	US East (N. Virginia)
Instances:	• 3 Year AURI (Prod) • 3 Year AURI – DH (Prod SQL) • On-Demand (Non-Prod)
Modeling:	• TSO Right Sizing
Licensing:	• Windows licenses included • BYOL SQL Server @ $3300/core (Ent) and $1100/core (Std)
Currency:	• USD annually

	On-Prem Estimate	On Demand 8 Hours / Day	3 Year AURI – DH / Shared
Non-Production	$1,073,340	$262,395	
Production	$2,411,763		$436,567
Total	$3,485,103		$698,962
80% Savings			

While this doesn't take into account the cost of change, migration tools, and services, the intent of our software is to provide a directional business case based on your actual data.

Migrate Faster with VMware Cloud on AWS

Reduce migration effort from months to weeks

AWS offers a faster, easier and cost-effective path to the cloud with VMware Cloud on AWS. You can seamlessly extend, migrate and manage workloads with familiar VMware tools (e.g. HCX, vCenter, vMotion), current skills, existing processes and optimized access to AWS services. Based on the **1241** servers we assessed, **755** are candidates for VMware Cloud on AWS. Customers with a similar footprint reported additional migration-related cost savings of $460,550 from a 54% faster migration with VMware Cloud on AWS*.

Parameter	VMware Cloud on AWS	Amazon EC2 + EBS
Compute	19 Hosts, 2 Clusters	442 EC2 Instances, 20 EC2 Hosts
Storage	Included	198 TB of EBS
Support	Included**	Not Included
Bring your Own SQL Licenses	144	181
Annual Cost	**$692,653.00**	**$537,926.45**
20.4% Decrease in SQL Server Licenses needed 28.76% Increase in Cost		

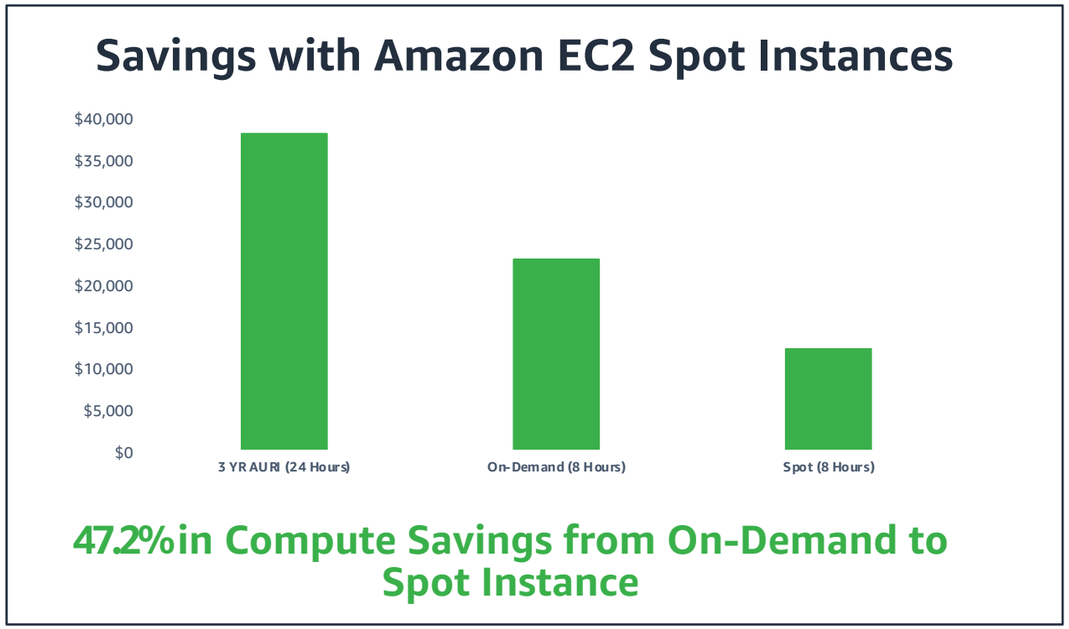
Modeling

- 3 YR Standard RI/Instance Savings; All Upfront payment
- Dedicated hosts for Windows Server and SQL Server workloads
- Over subscribed CPU up to 1.5x on VMC hosts
- BYOL SQL Licensing physical cores
- Costs in USD
- Region – us-east-1
- Candidates: Currently running on VMware and were in scope for the Amazon EC2 + Amazon EBS model

If you would like to explore this option further, please let us know and we will engage you with one of our experts from our VMware Cloud on AWS team.

*Estimated based on IDC White Paper: The Business Value of Hybrid Cloud with VMware, 2019. Excluded in the table shown.
**VMC on AWS support includes 24x5 chat support and 24x7 GSS phone support..

Reduce Costs Further with Amazon EC2 Spot Instances



For the 1220 servers we assessed across your entire portfolio, 79 are candidates for running on Amazon EC2 Spot Instances as they were:

- Non-Production
- Running RHEL or Linux
- Not running MS SQL Server Enterprise or Standard

For these 79 servers, switching to Amazon EC2 Spot Instances would save you 47.2% over running On-Demand and 68.2% over a 3 Year Reserved Instance

Amazon EC2 Spot Instances are spare Amazon EC2 capacity available for up to a 90% discount compared to On-Demand prices. If AWS needs the capacity back, the instance will be terminated following a 2-minute warning. On average, instances are interrupted <5% of the time. Check out the Spot Instance Advisor page for interruption rates by instance type and region.

Common Amazon EC2 Spot workloads include:

- Containerized workloads (e.g. Kubernetes)
- Big data / analytics (e.g. Hadoop, Apache Spark)
- High performance computing
- Stateless applications
- Test and Development

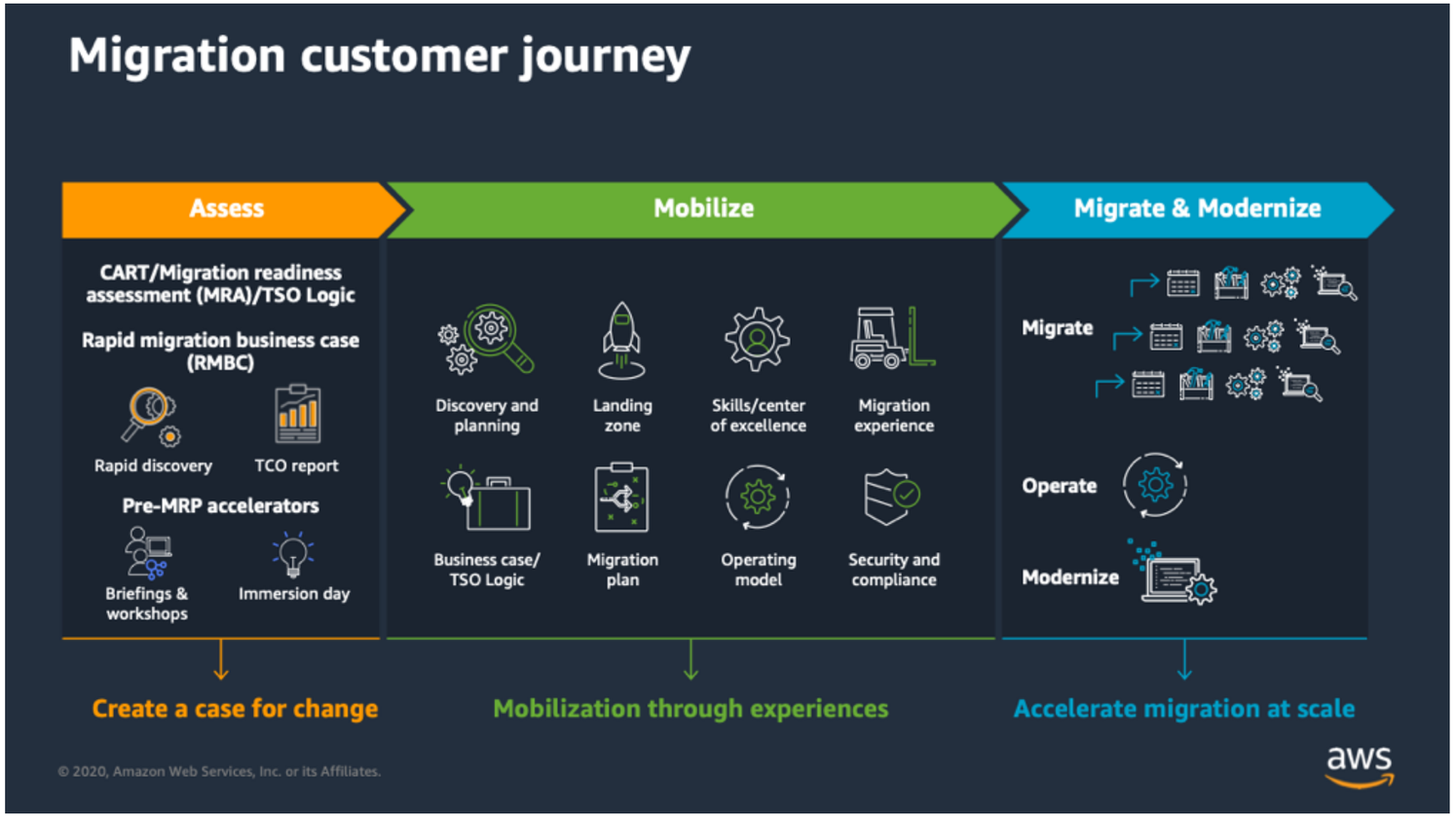
Learn how Skyscanner utilized Amazon EC2 Spot Instances to cost effectively migrate their Kubernetes clusters out of their data centers to AWS.

If you would like to explore this option further, please let us know and we will engage you with one of our experts from our Amazon EC2 Spot Instances Team.

Please note, Spot pricing is based on averages in US East (N. Virginia) for *the previous 30 day period.*

Next Steps

- Work with your AWS Account team to determine your next best step
- Learn about the other services AWS provides to accelerate your migration to the cloud: https://aws.amazon.com/products/migration-and-transfer/



aws migration evaluator

Formerly TSO Logic

Thank You!