



Executing Migrations to AWS

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Business drivers for migrating to the cloud



Real customer outcomes



Cost Savings

"realized a 52 percent reduction in TCO"

General Electric

"avoided acquiring additional data center space, saving an estimated \$1M+ over three years"

Lionsgate

"reducing its data center footprint from eight to three by 2018"

Capital One



Staff Productivity

"we have enhanced software development by 20%"

Orbis

"without AWS, we would need the DevOps team to be at least twice the size"

Avizia

"with half the people normally required to build and operate sites"

Bustle



Operational Resilience

"15% increase in availability"

Conde Nast

"We're seeing up to 99.99% availability"

Vodafone Italy

"availability increased from 99.7 to 99.999"

2C2P



Business Agility

"gone from deployments taking 6 weeks to 1 per week"

3M

"set up in about 1/5 of the time it would taken to do a buildout and deployment"

Intuit

"our projects no longer last years, they last months"

Autodesk



Migration challenges

- How do I compare costs to AWS?
- How do I size AWS EC2 instances?
- How do I know if I am picking the right licensing for my Business Case?
- Who else should be supporting the migration?
- My CMDB is out-of-date, what software is running on each server?
- What's my actual utilization?
- What are my application dependencies?
- Large volumes of data - difficult & time consuming to process/plan
- What, how, and when should I migrate which applications
- How do I know that I can operate securely?
- Which tools are available for servers migrations? And for Data migrations?
- How do I know an app migration is complete?
- How do I track progress without slowing down?



Create a case for change



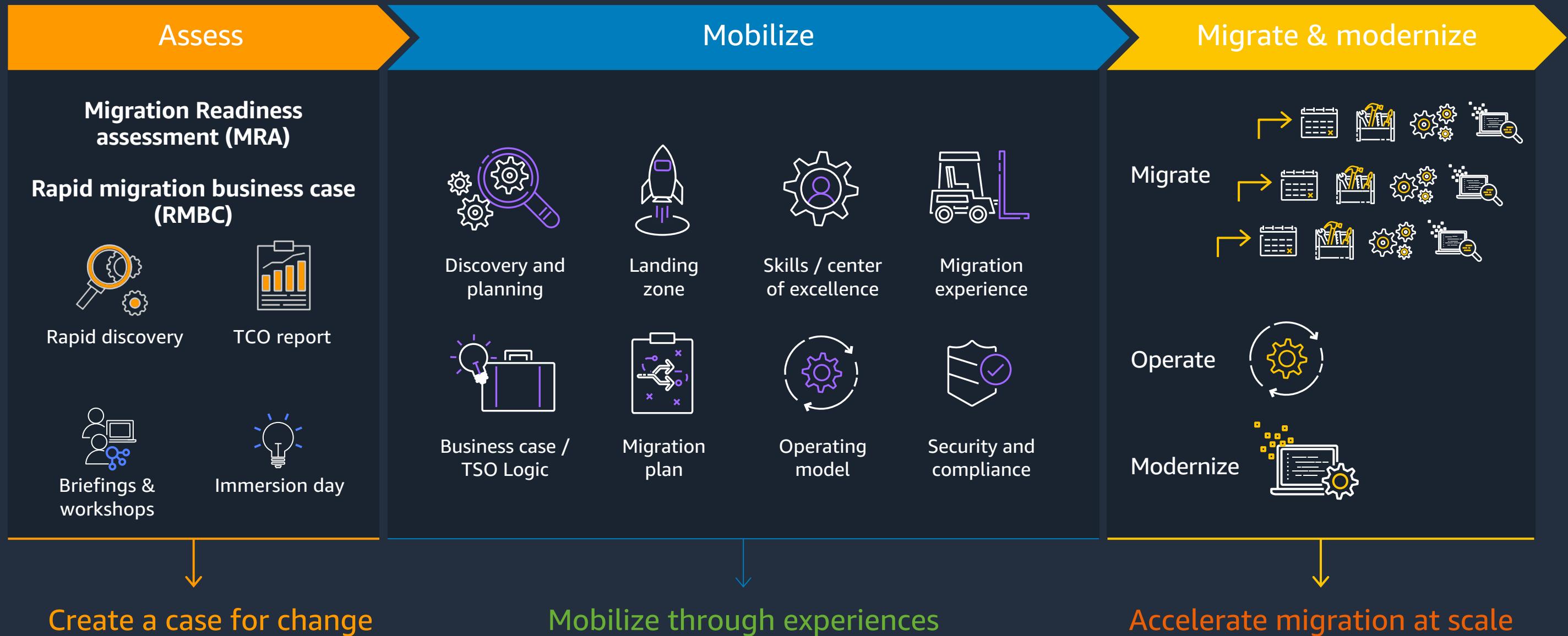
Mobilize through experiences



Accelerate migration at scale



Migration customer journey



Migration process: Assess

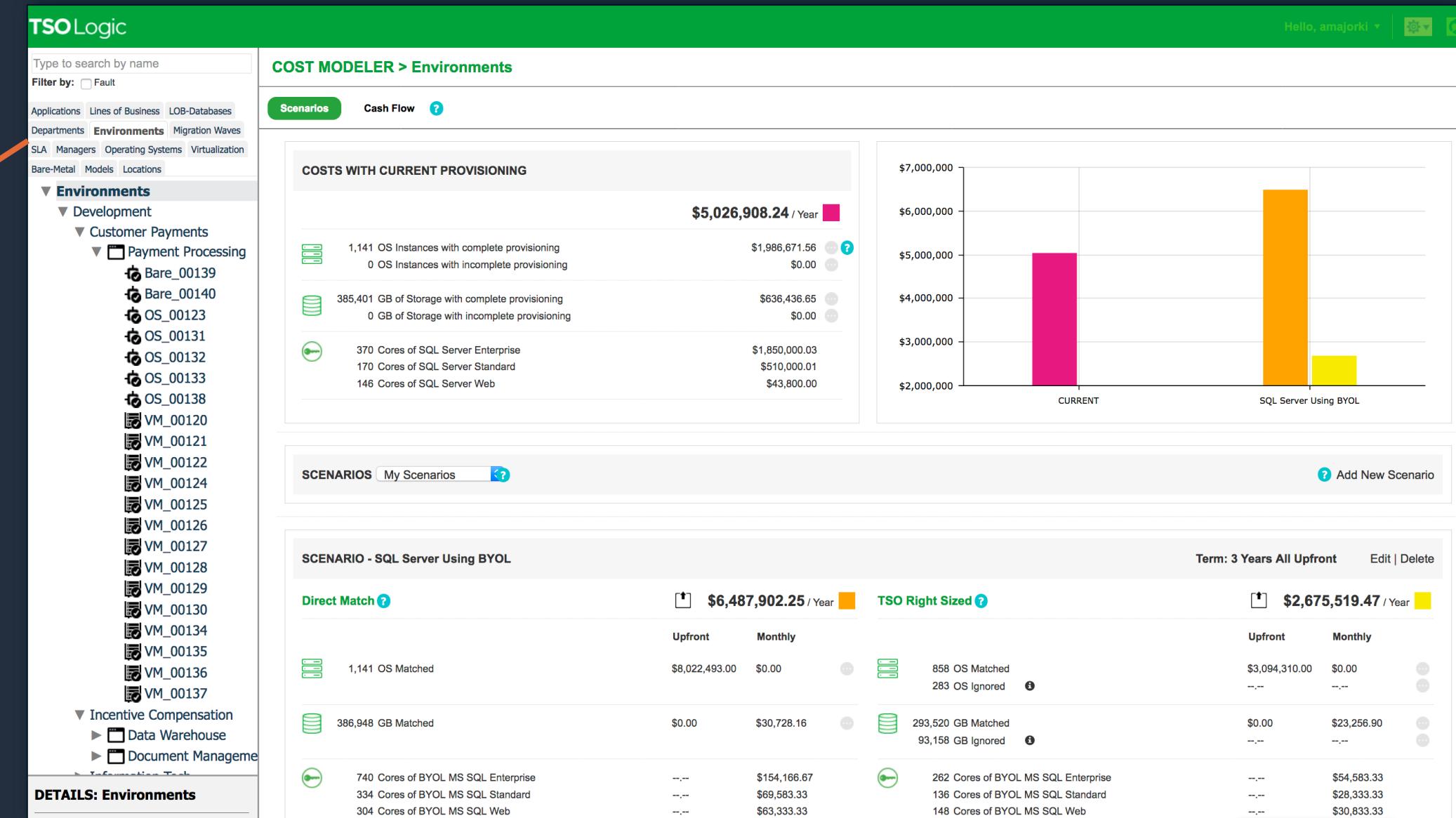


Rapid discovery and TCO Report with TSO Logic



TSO Logic ingests millions of data points about an environment.

Customers can run “pivots”—viewing their IT assets by drilling down into different groupings.



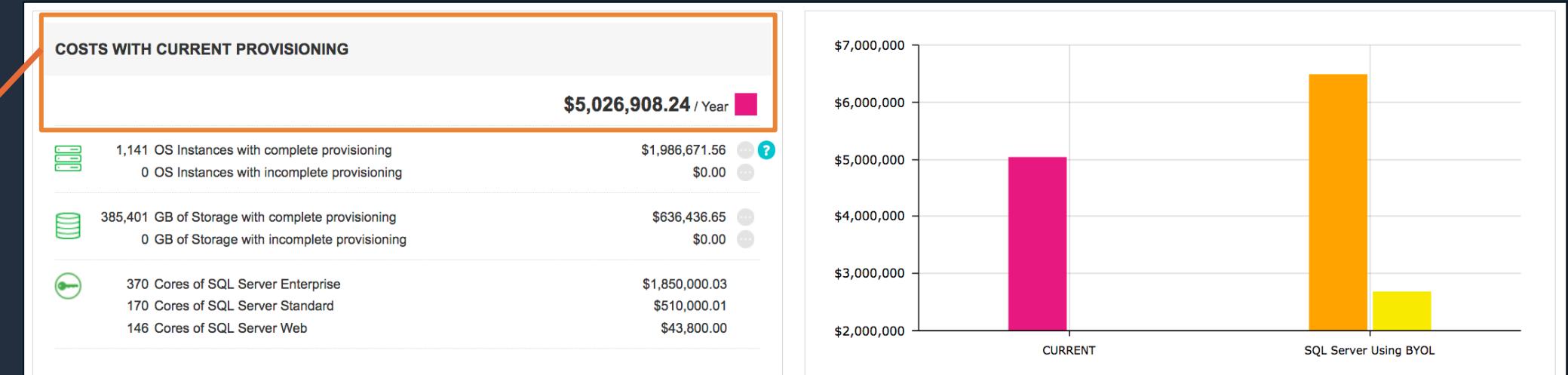
TSO Logic
An Amazon Web Services Company



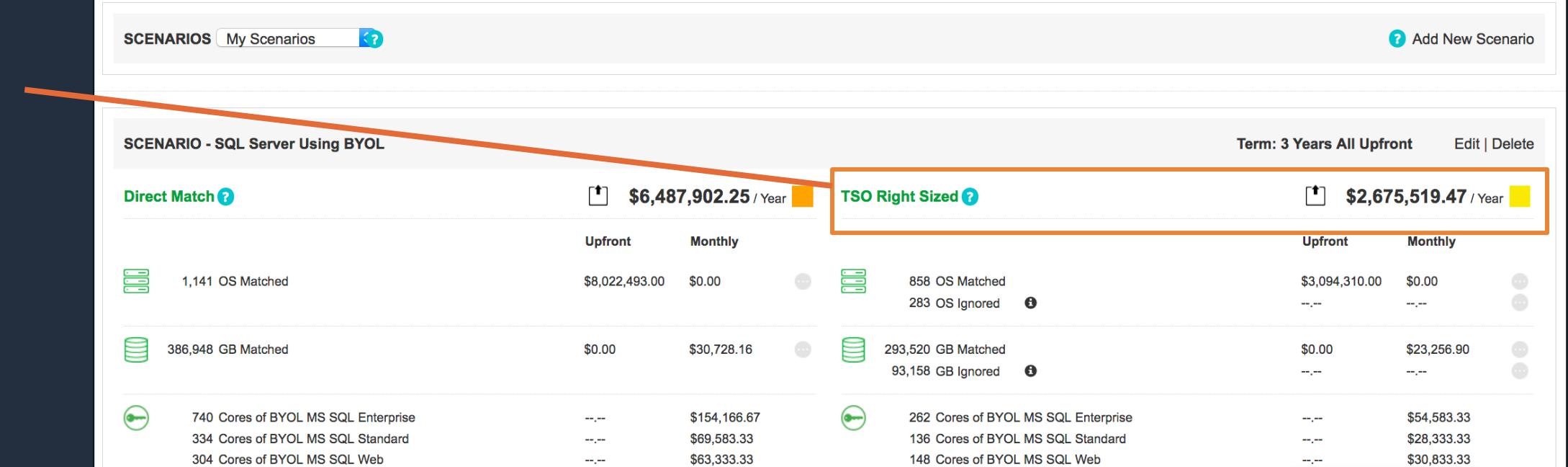
Optimization and Licensing Assessment: Rightsizing to AWS



Directional costing of current compute and storage.



Finds the best-fit, best-price, AWS configuration – based on historical usage.



TSO Logic
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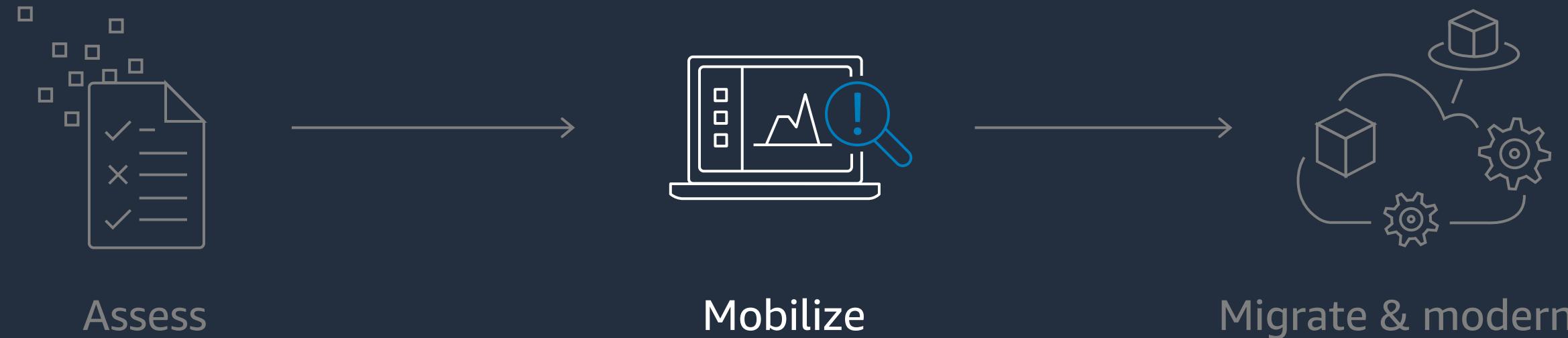
AWS operating cost optimization levers



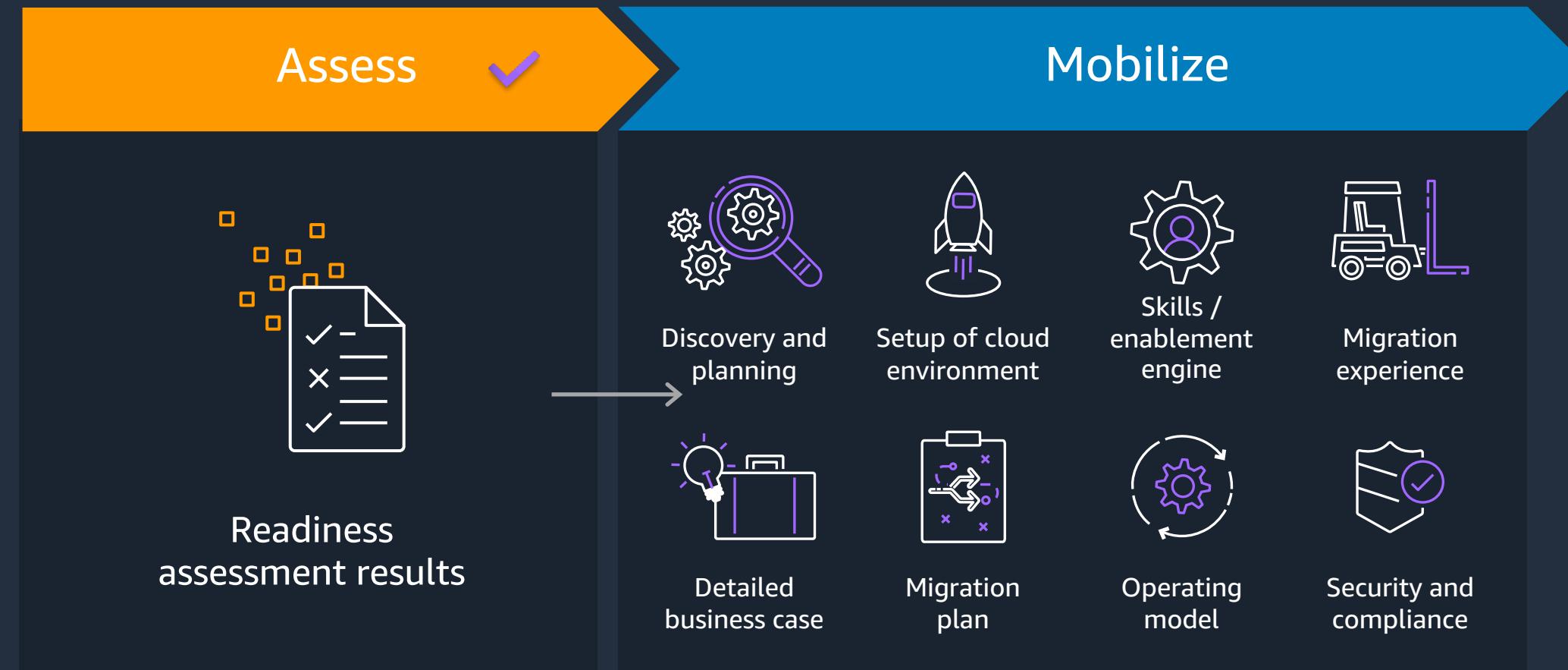
Area	#	Lever	Description	\$ impact
Compute	1.1	Instance right sizing (CPU & RAM utilization)	Mapping servers based on Actual Resource Consumption (ARC) that allows using the lowest cost resource that still meets the technical specifications of a specific workload	
	1.2	Purchasing options elasticity	Applying the most cost efficient purchase option based on time server is used, i.e. Reserved Instances/Savings Plans for machines running 24/7 (e.g. Prod) and on-demand for running limited period of time (e.g. Dev, Test)	
	1.3	Upfront payment	Using all or partial upfront payment option offering additional discount	
	1.4	Servers number rationalization	Eliminating servers that are not needed in the Cloud, e.g. not used / "Zombies", legacy to be retired, not required due to change of architecture (e.g. backup servers, smaller cluster, DR)	
	1.5	AMD instances	Using instances with AMD EPYC processors offering comparable performance at lower cost	
Storage	2.1	Storage utilization	Mapping storage based on used volumes (vs Raw or Provisioned/Usable)	
	2.2	Storage optimization	Applying the most appropriate type of storage (Local, File system, Object) and its class (e.g. local SSD vs HDD, object Frequent vs Infrequent Access) based on the lifecycle policies and other needs	
Licenses	3.1	License optimization	Evaluating license requirements and identifying optimization areas (e.g. move from SQL Server Enterprise edition to Standard, reducing # of cores); Applying the most cost efficient licensing model (BYOL vs LI)	
	3.2	Modernization	Moving from commercial DB engine and/or OS to open source	
Others	4.1	Cloud native solution	Re-factoring applications to cloud native solution (e.g. server-less architecture)	
	4.2	Programs	Applying AWS programs to provide financial and expert support with transformation journey (e.g. migration, modernization, PoC), as well as volume discounts	



Migration process: Mobilize



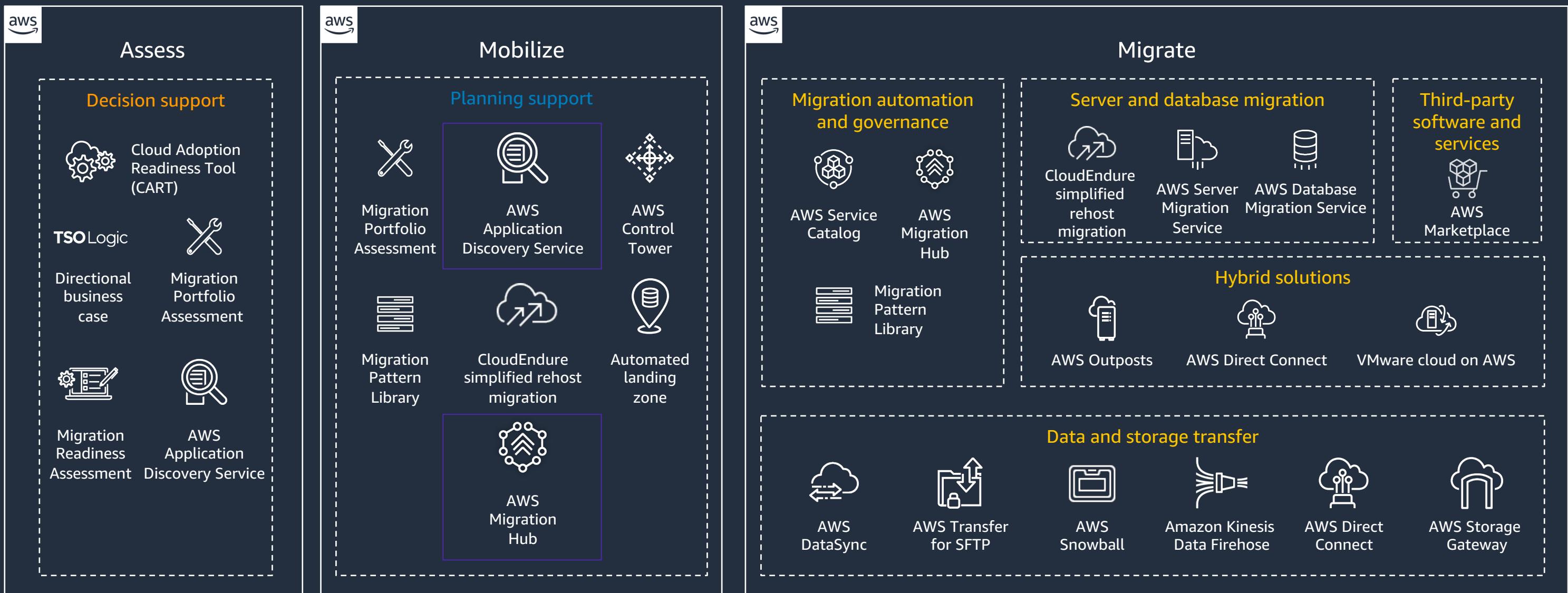
Use assessment results to improve your migration readiness and planning, and mobilize resources





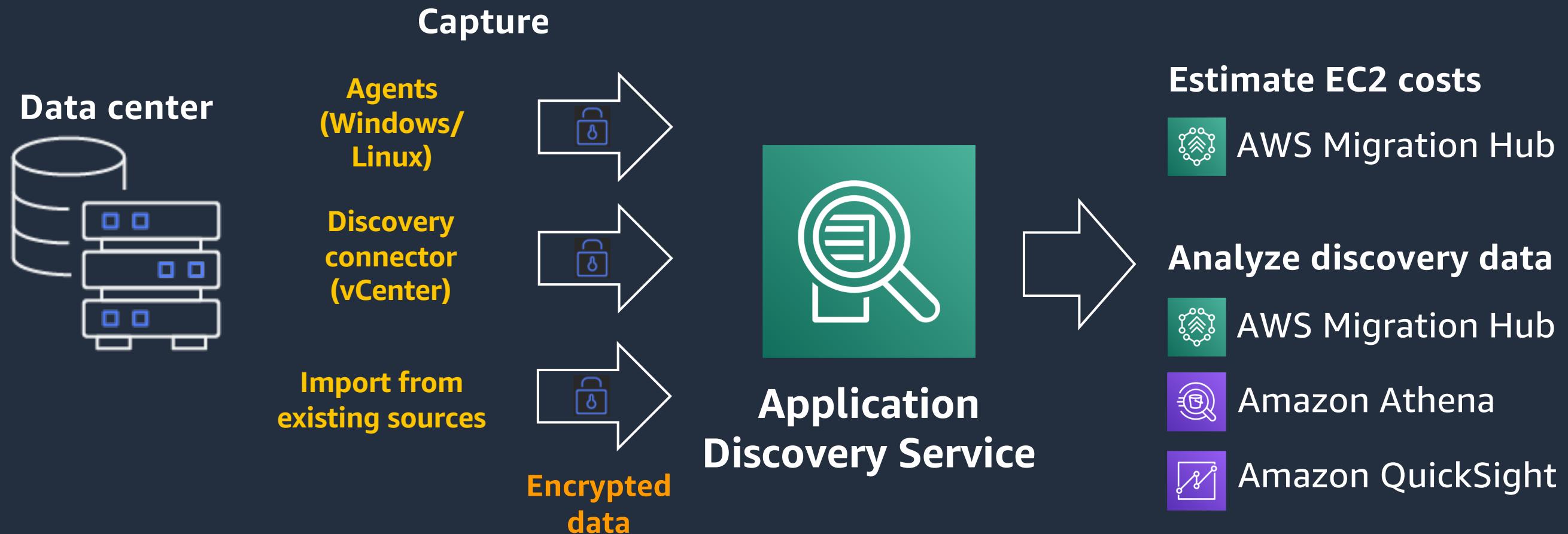
Mobilize

Broadest and deepest set of capabilities to accelerate your migration

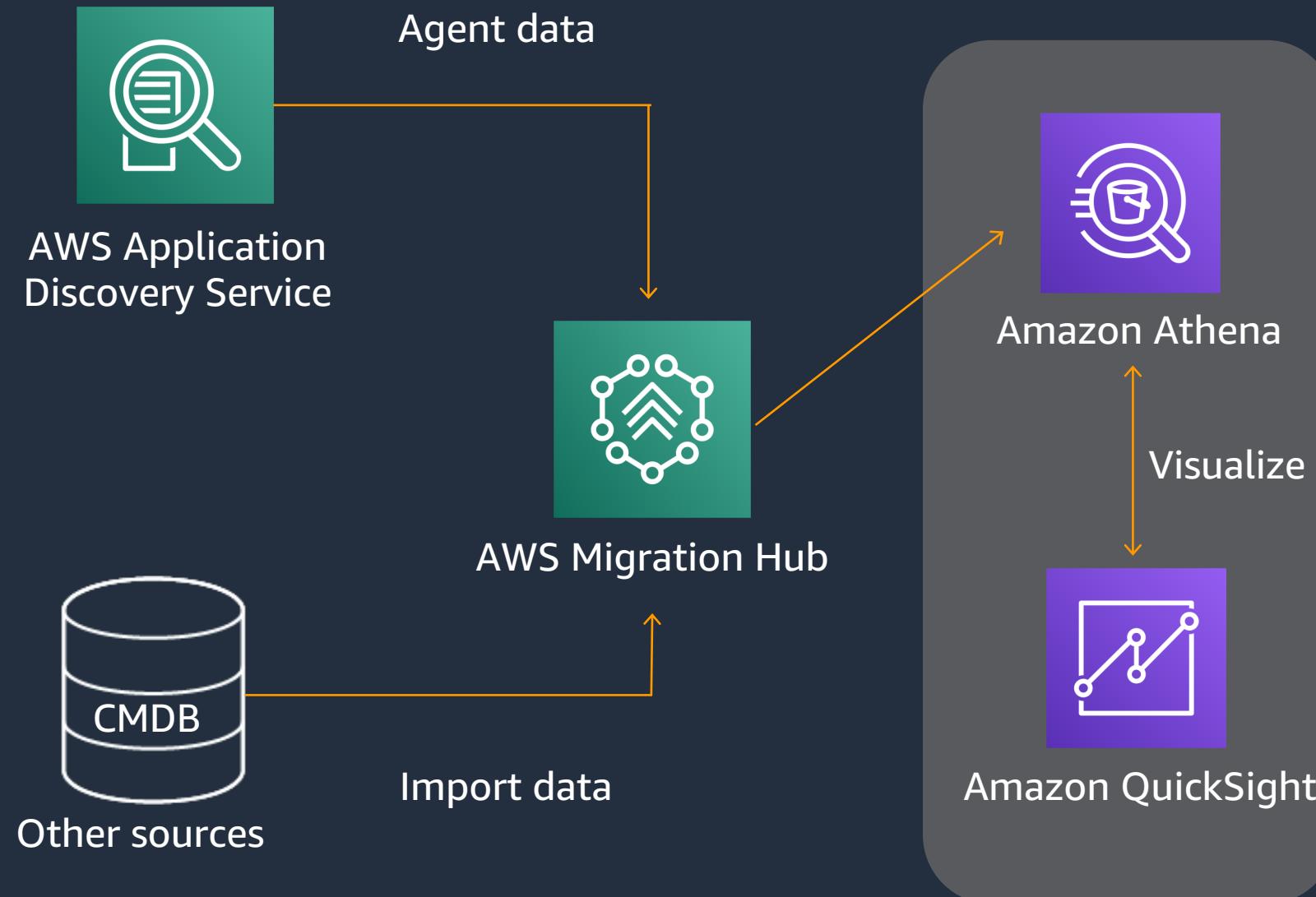


How to perform discovery

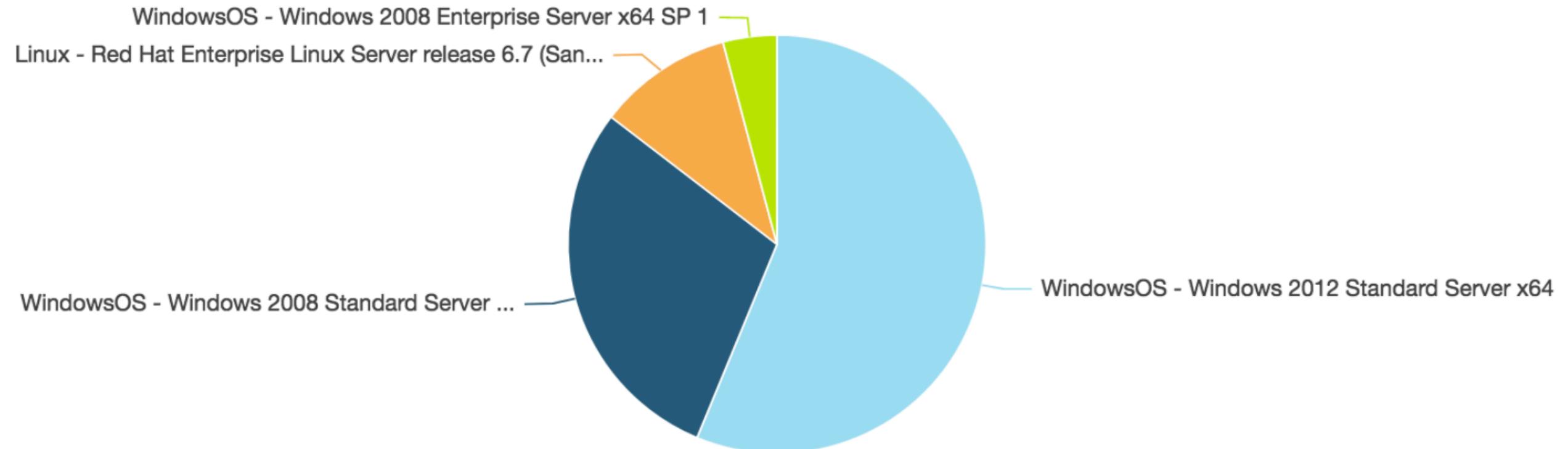
Capture and visualize system inventory, performance, and dependencies



Migration planning using Athena and Amazon QuickSight



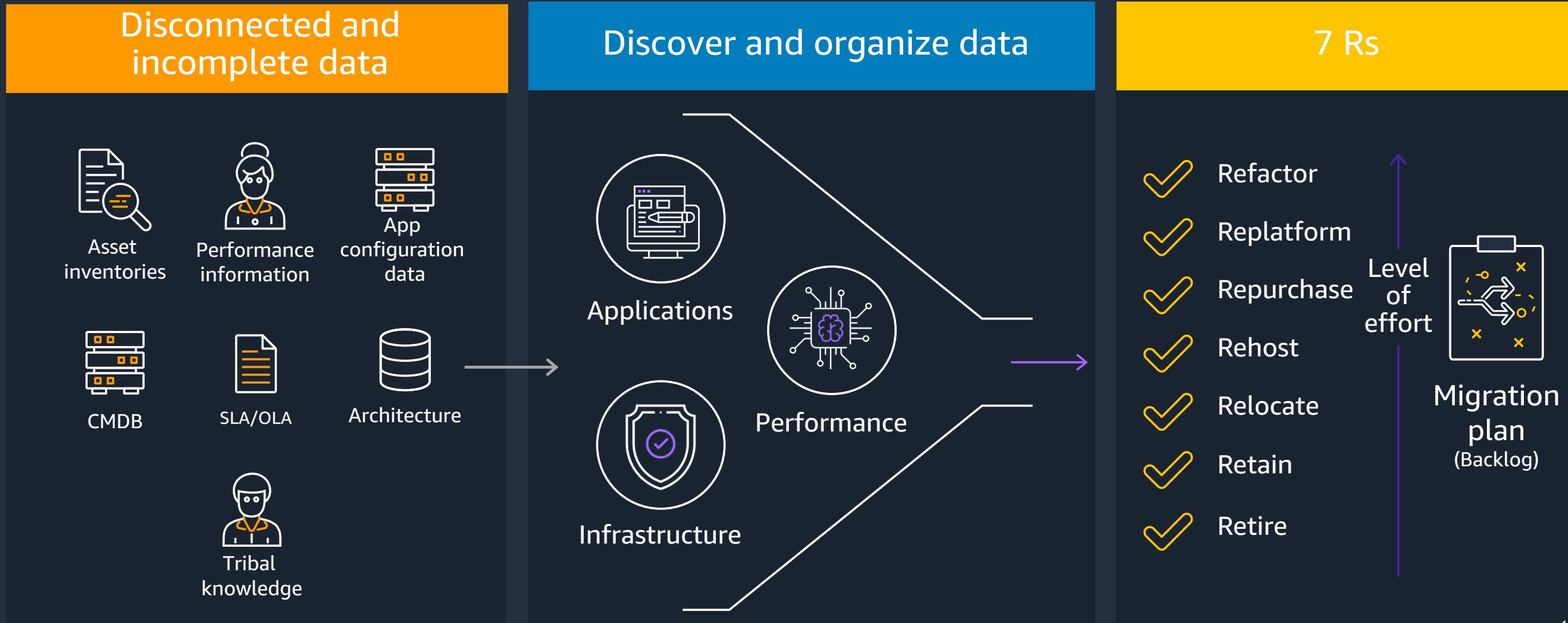
Operating system info in Amazon QuickSight



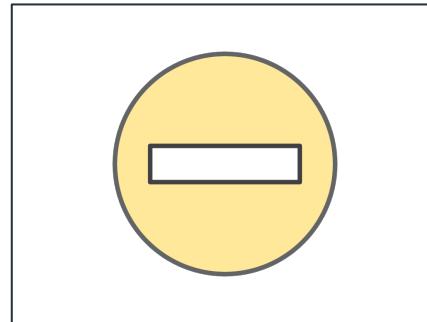


Mobilize

Determine the right migration pattern for your apps



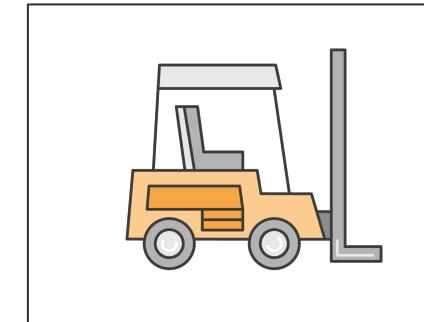
R's explained



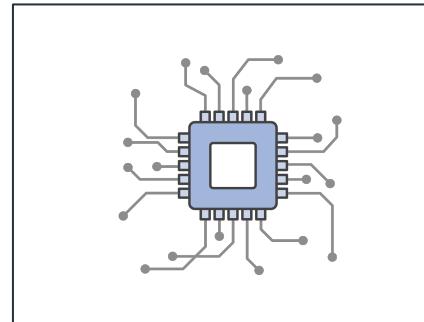
Retire



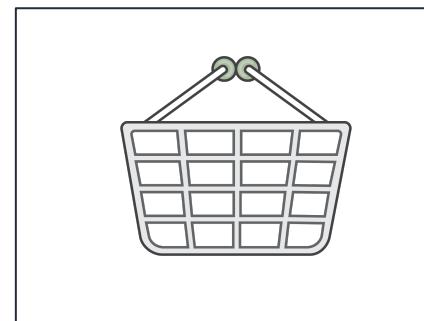
Retain



Relocate



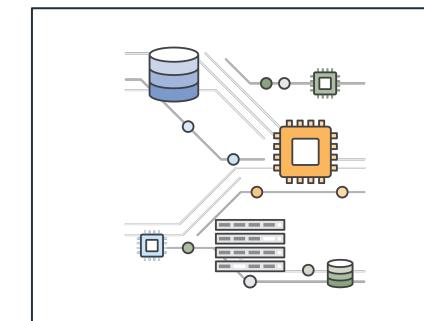
Rehost



Repurchase

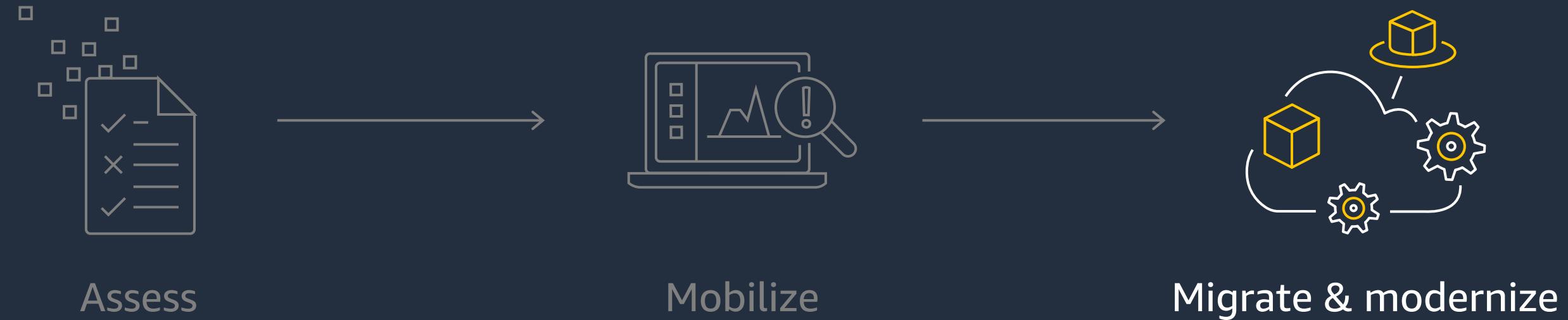


Replatform



Refactor

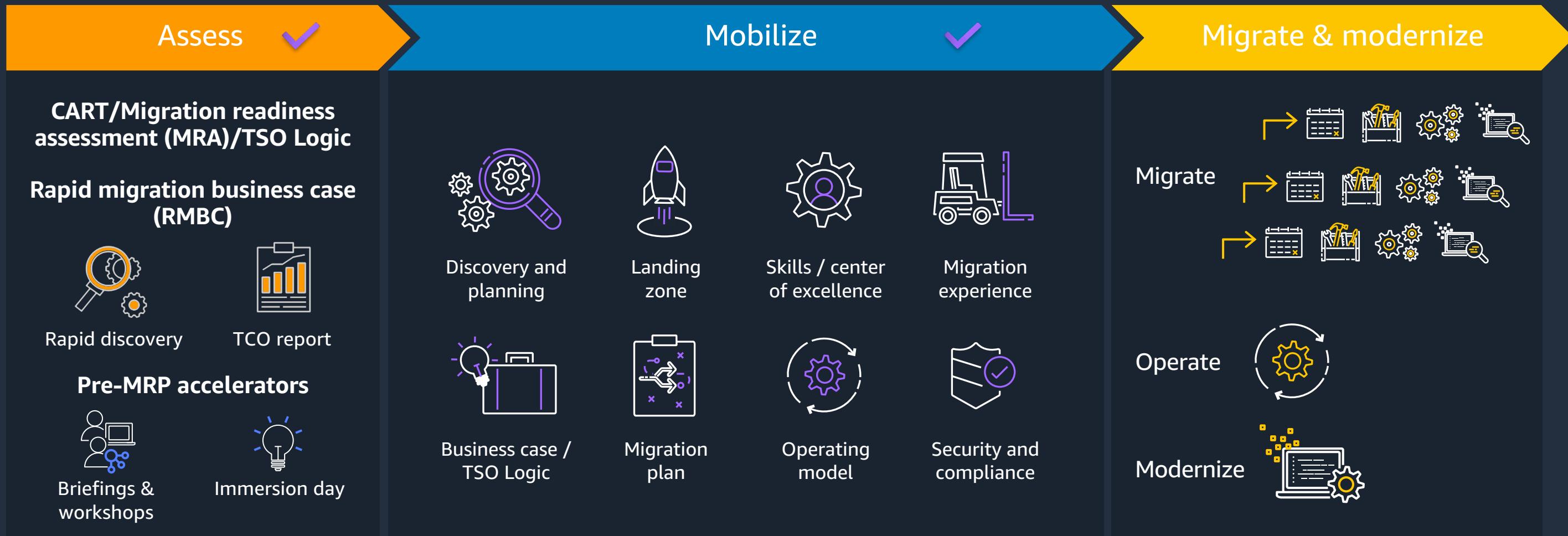
Migration process: Migrate and modernize



Migration customer journey



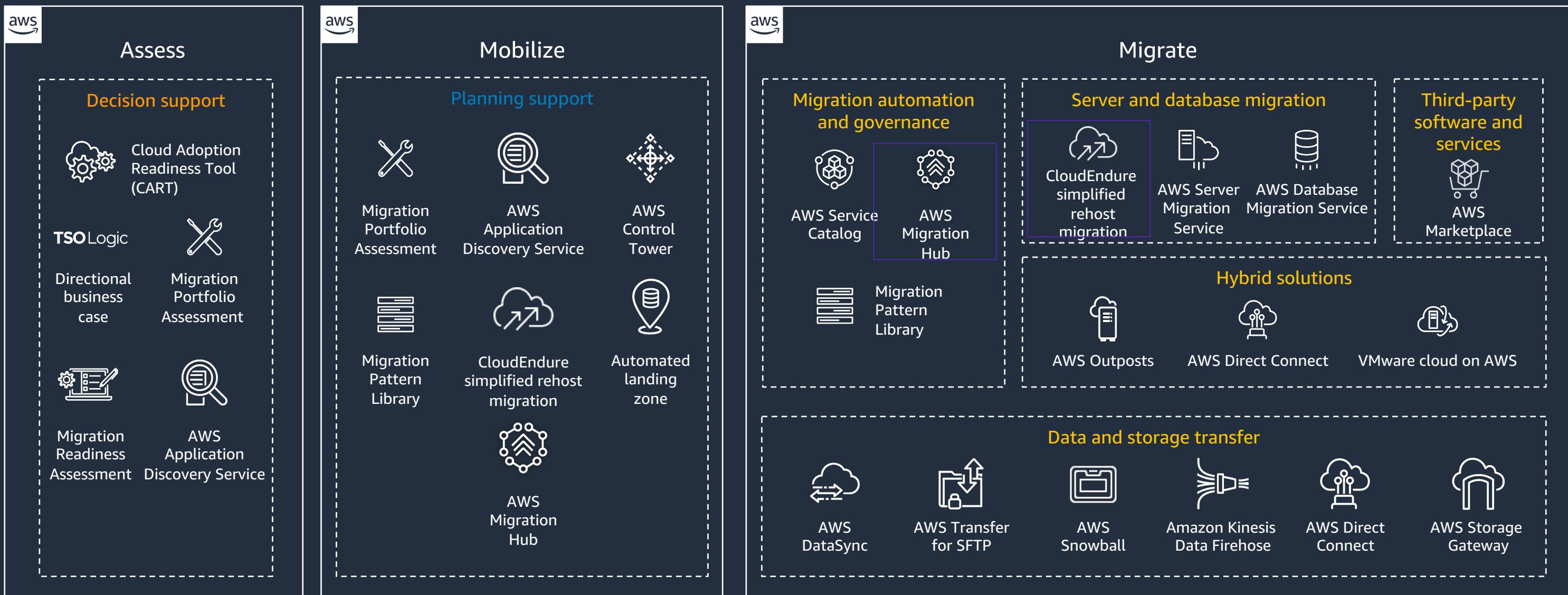
Migrate & modernize



Broadest and deepest set of capabilities to accelerate your migration



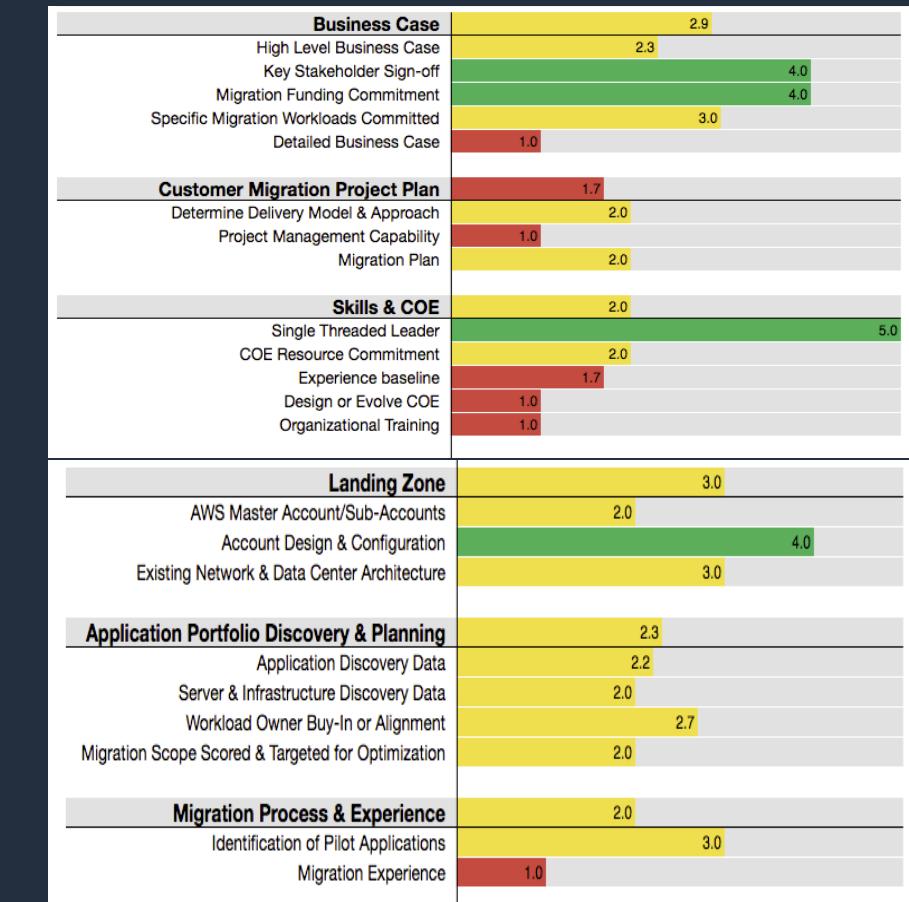
Migrate & modernize



Using a Readiness Assessment to build an Action Plan



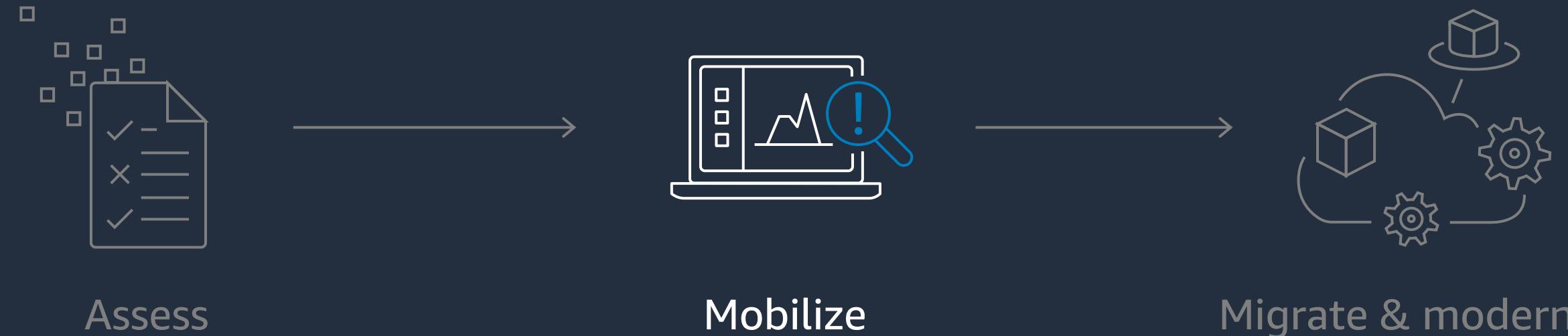
- Questions to identify readiness and gaps to migrate at scale
- Followed by an action plan proposal to close the gaps (e.g. Accelerators, a Mobilize project plan by ProServe / partner)



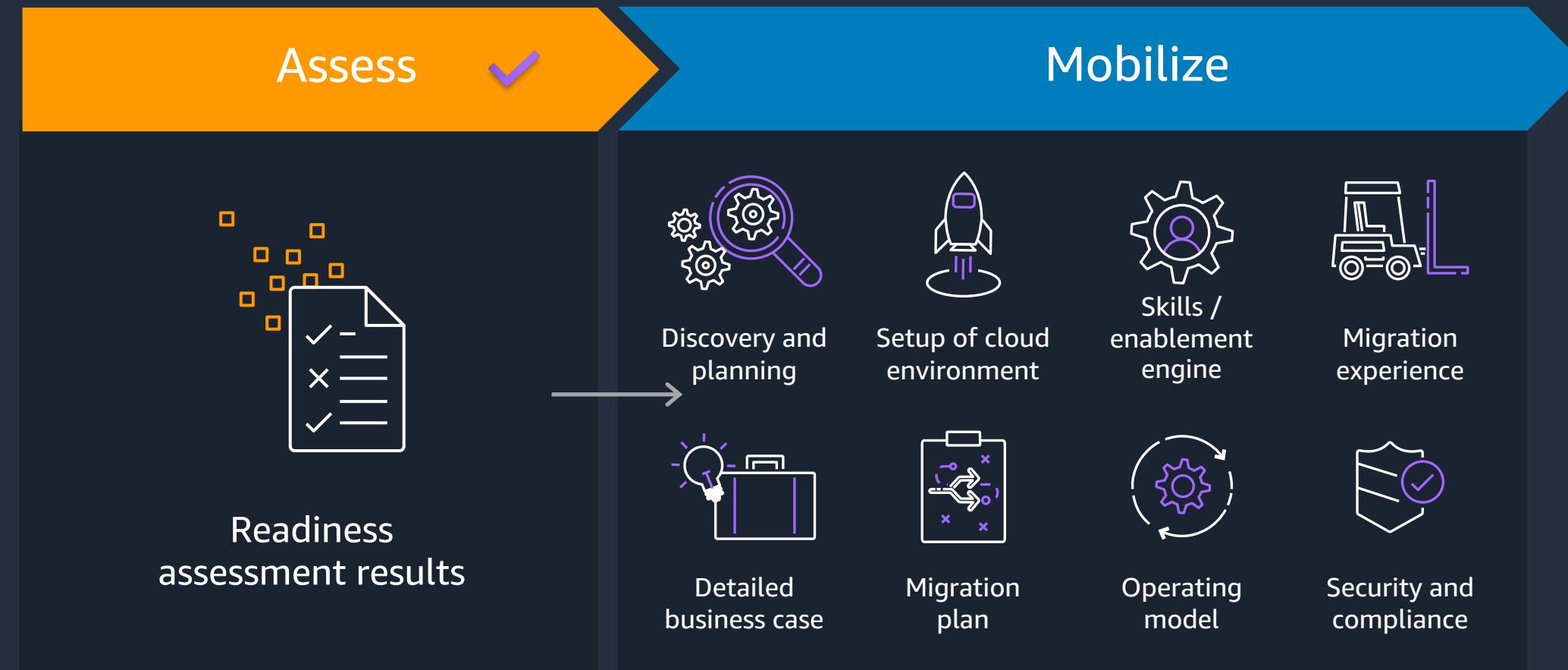
Lightweight version available for everyone:
<https://cloudreadiness.amazonaws.com/#/cart>



Migration process: Mobilize



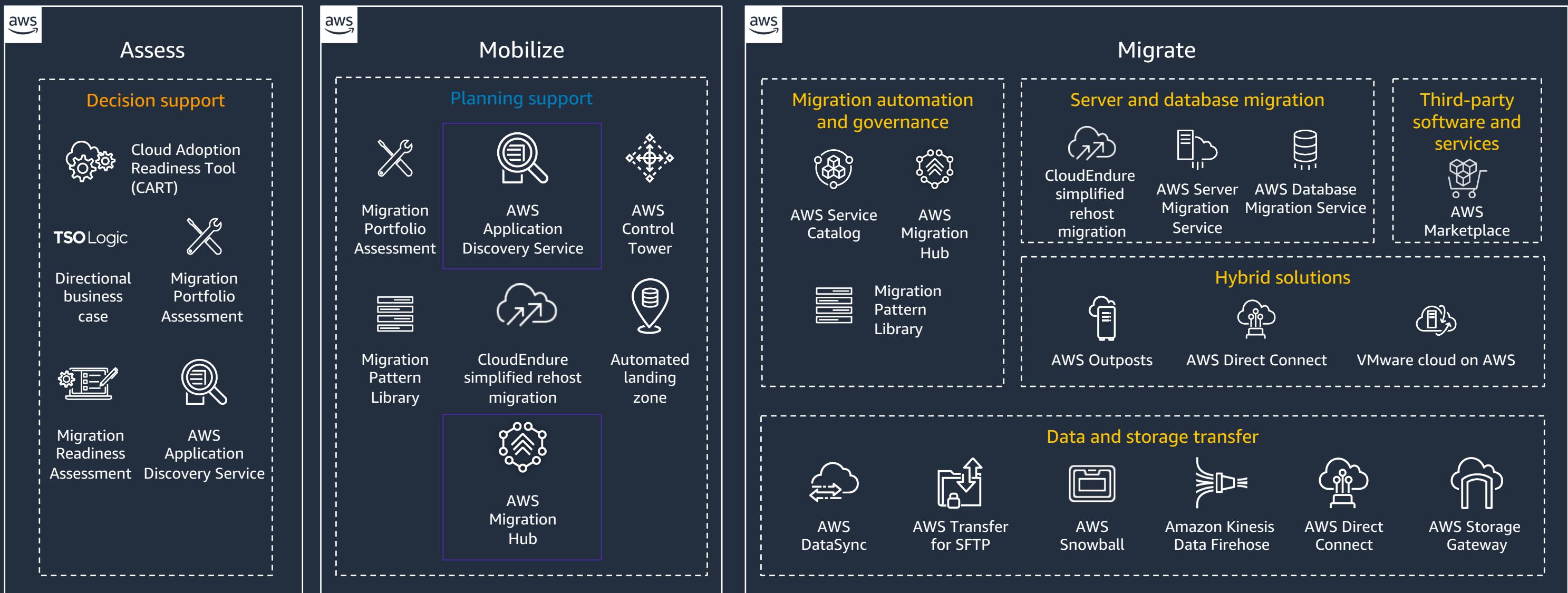
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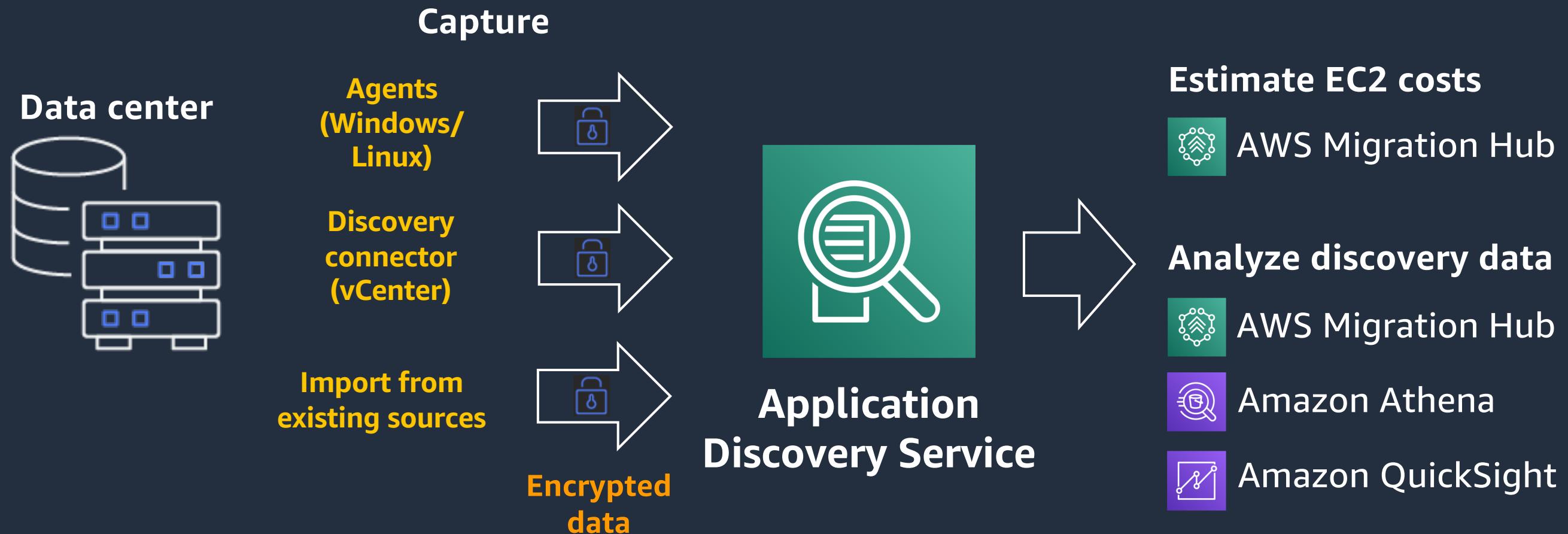
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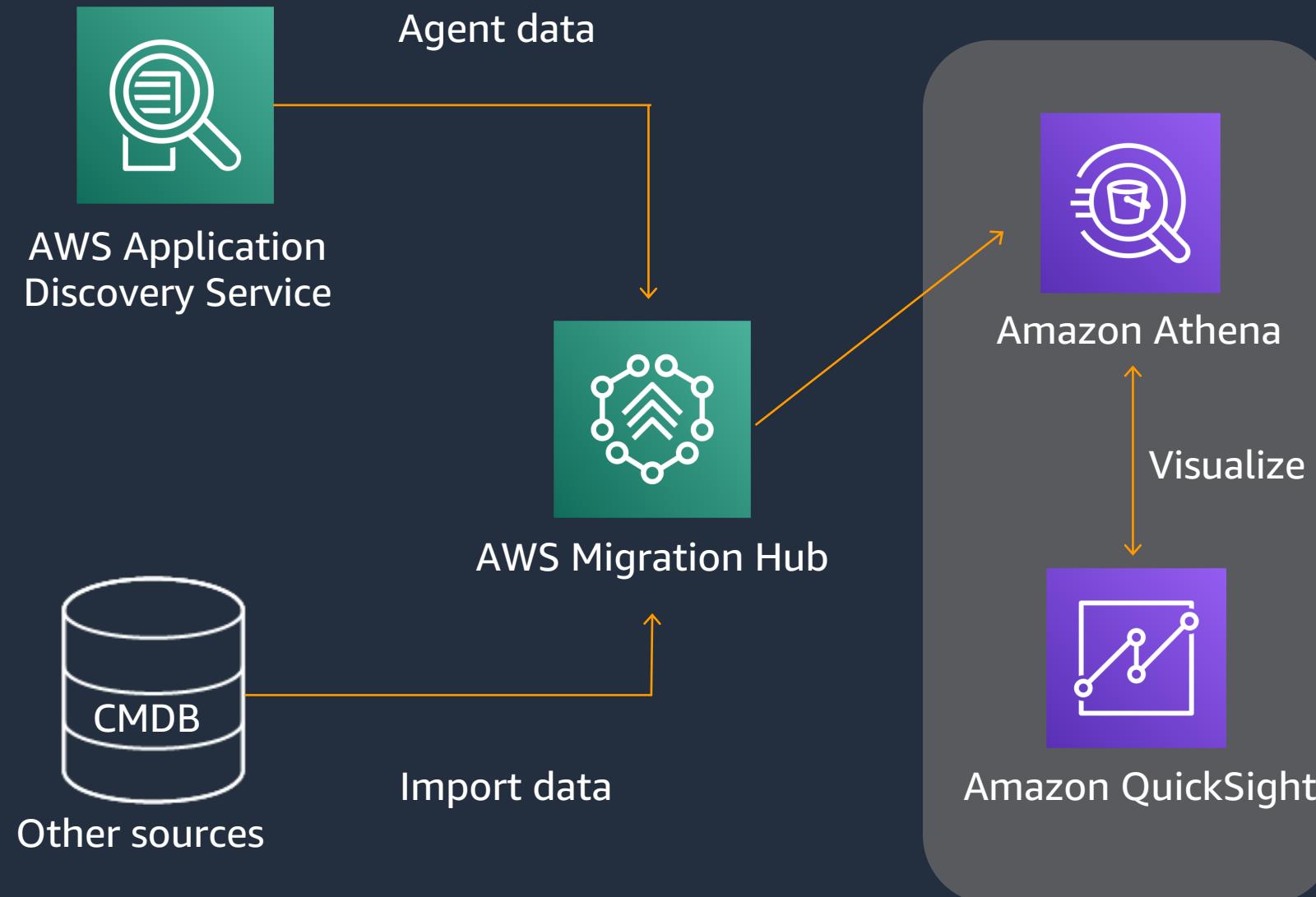


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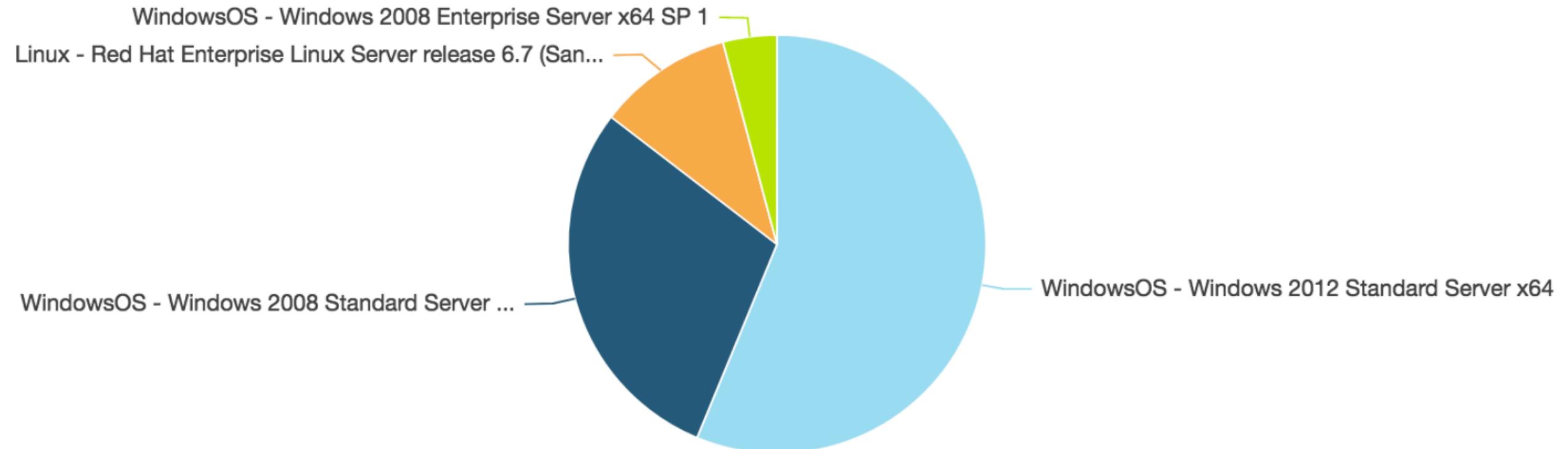
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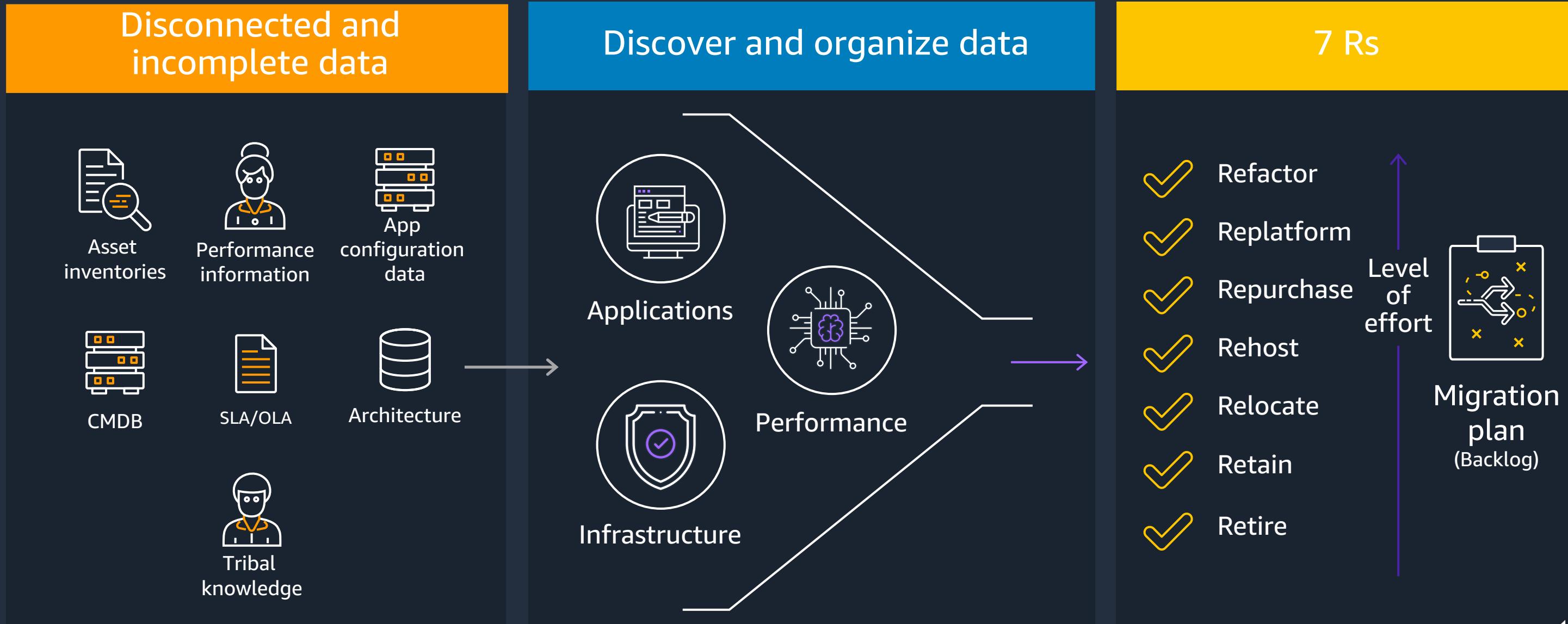
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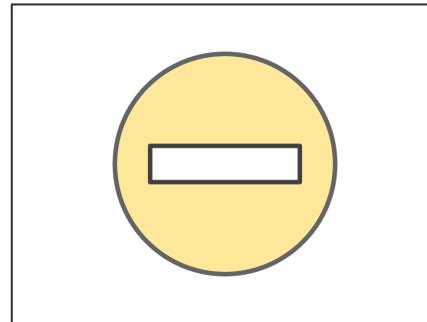


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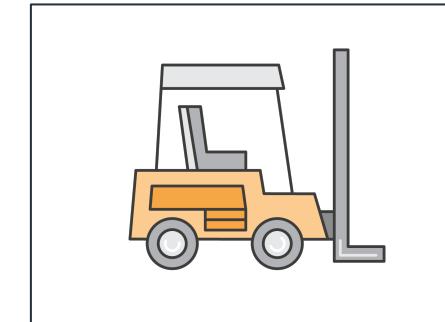
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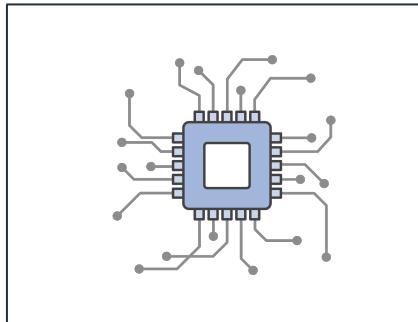
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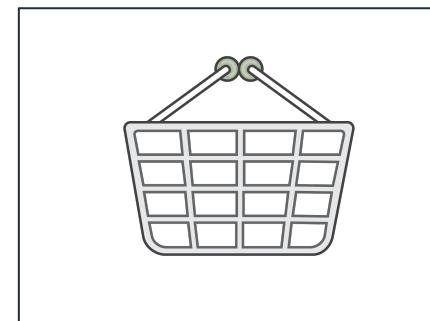
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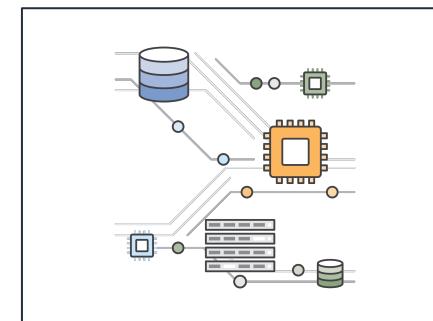
Rehost



Repurchase

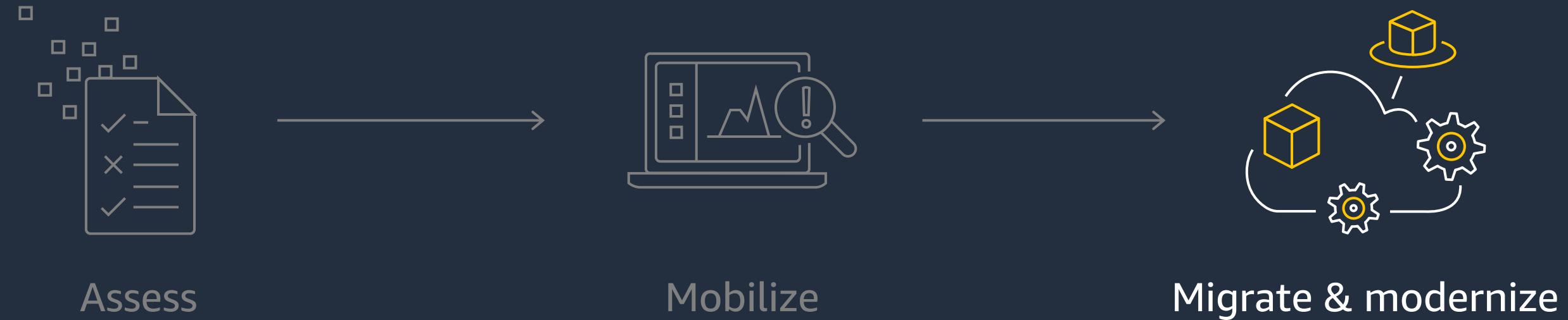


Replatform



Refactor

Migration process: Migrate and modernize



Migration customer journey



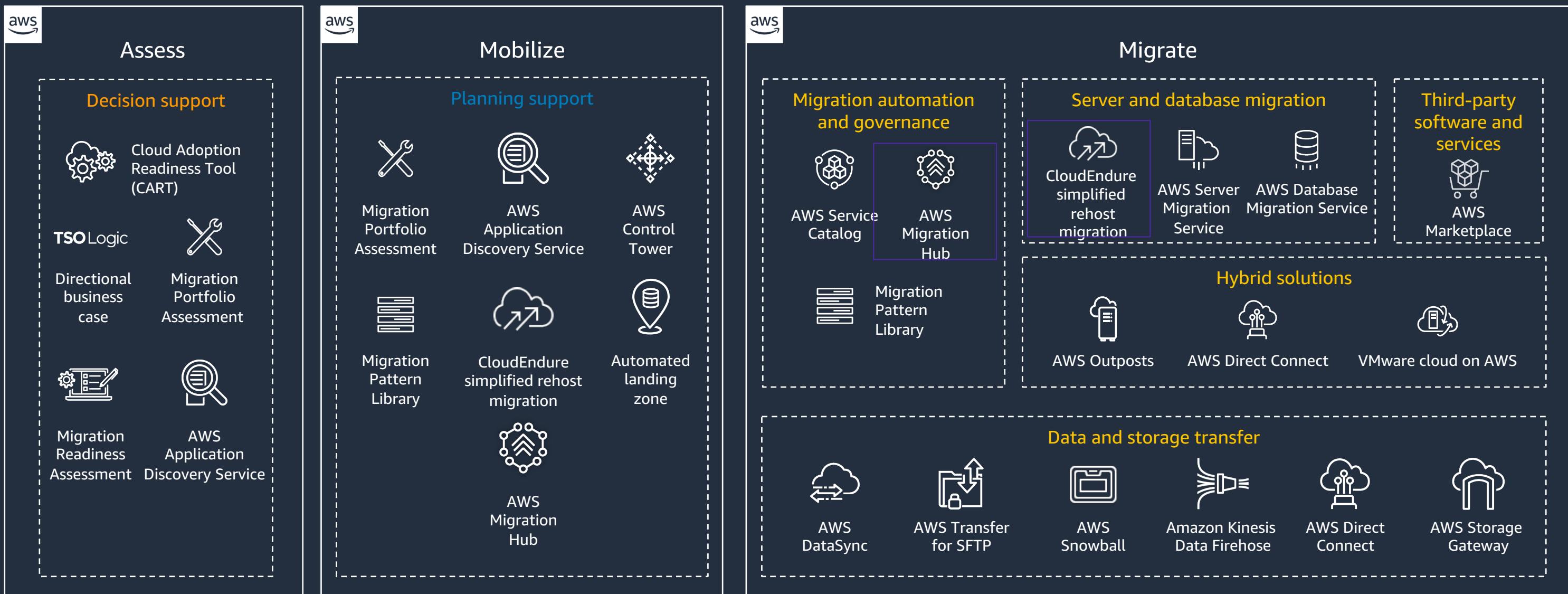
Migrate & modernize



Broadest and deepest set of capabilities to accelerate your migration



Migrate & modernize



Common migration challenges

- ➔ Diverse infrastructure and OS types
- ➔ Legacy applications
- ➔ Complex databases
- ➔ Busy, continuously changing workloads
- ➔ Machine compatibility issues
- ➔ Expensive specialized cloud skills required
- ➔ Downtime and performance disruption
- ➔ Tight project timelines and limited budgets

Simplify migration with CloudEndure

Flexible



Migrate From Any Source



Wide Range of OS, Application, and Database Support



Option to Migrate Back

Reliable



Robust, Predictable, Non-Disruptive Continuous Replication



Short Cutover Windows With Minimal Downtime



Highly Secure for Regulated Environments

Highly Automated



Minimal Skill Set Required to Operate



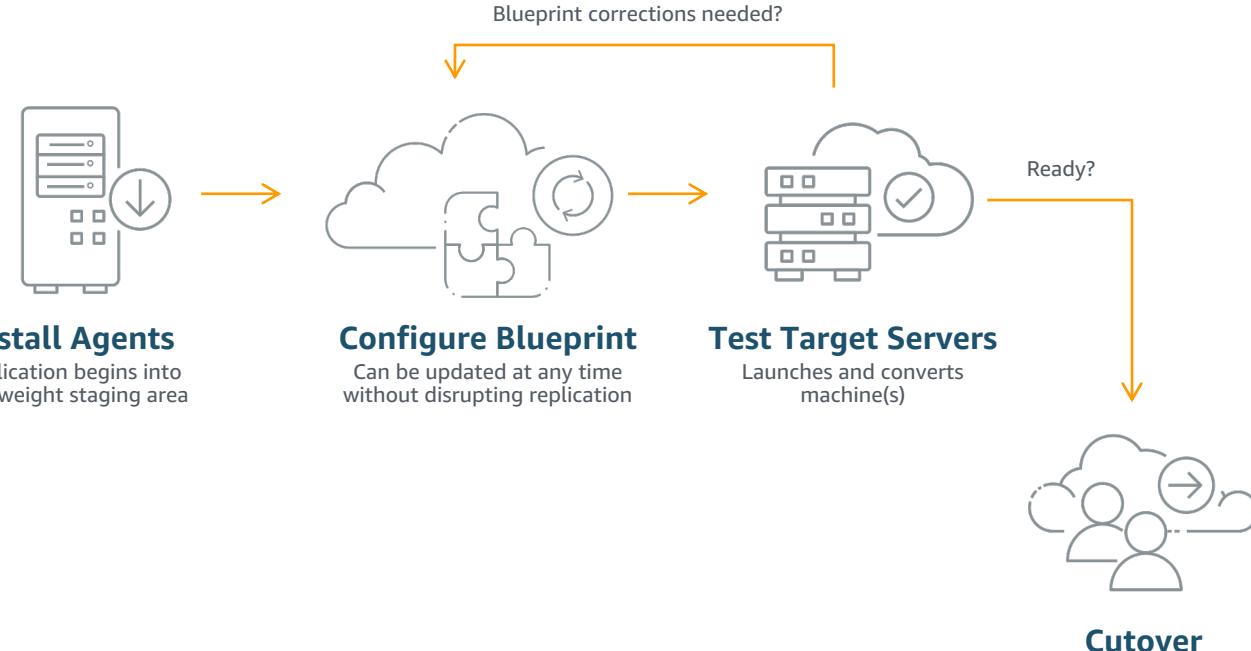
Easy, Non-Disruptive Tests Prior to Cutover



Easily Plugs Into Migration Factories and Cloud COEs

- Designed especially for rapid, mass-scale migrations
- Simple setup lets you start in minutes
- Same highly automated process for any workload (regardless of OS type/version, application, or DBs)
- Eliminates complexity and reduces risk
- Migrate with minimal business disruption

Automate and accelerate migration to the cloud



Migrations on time, without disruption



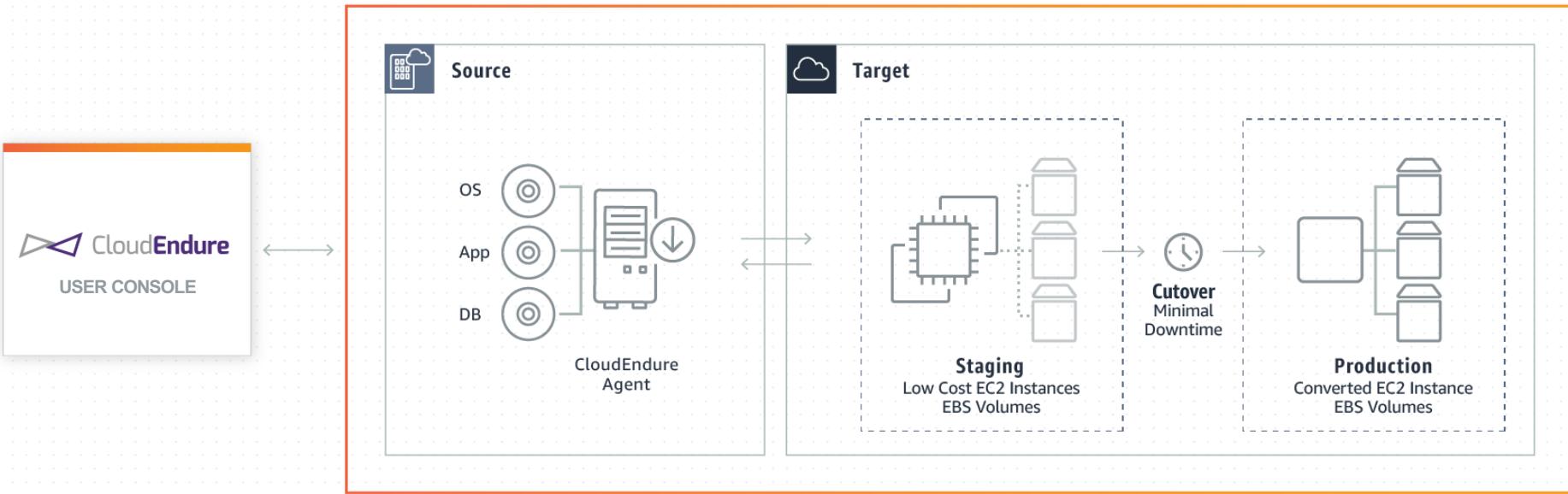
- Thousands of physical and virtual servers running different OS types and versions
- Seamlessly migrated off-the-shelf applications at scale
- Met their accelerated migration timeline
- Achieved significant cost savings by retiring legacy infrastructure



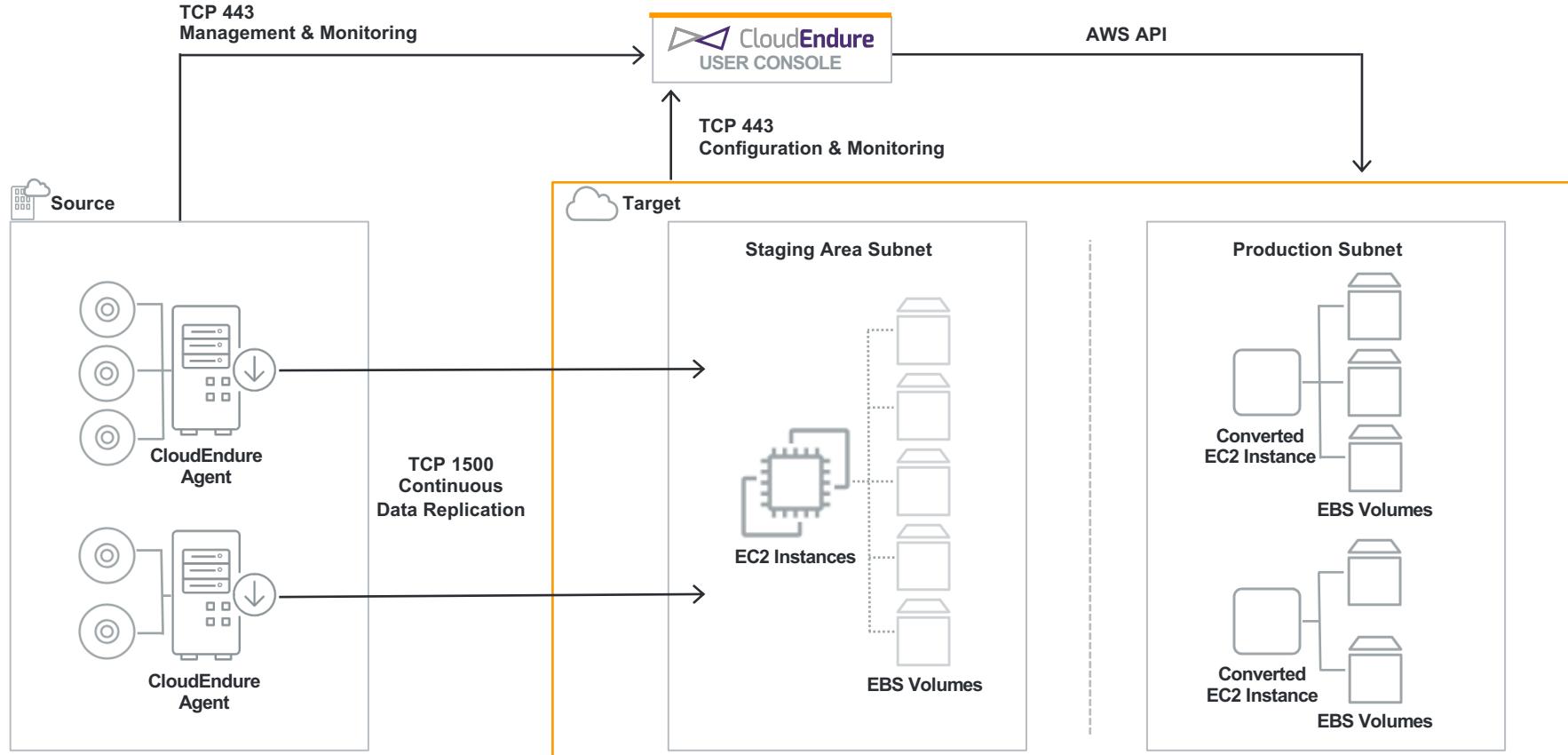
- Migrated 1,000 Windows servers from on-premises data centers to AWS
- Supported their entire environment and all workloads
- Achieved cutover windows of minutes
- Completed on schedule and without performance disruption

How CloudEndure Migration works

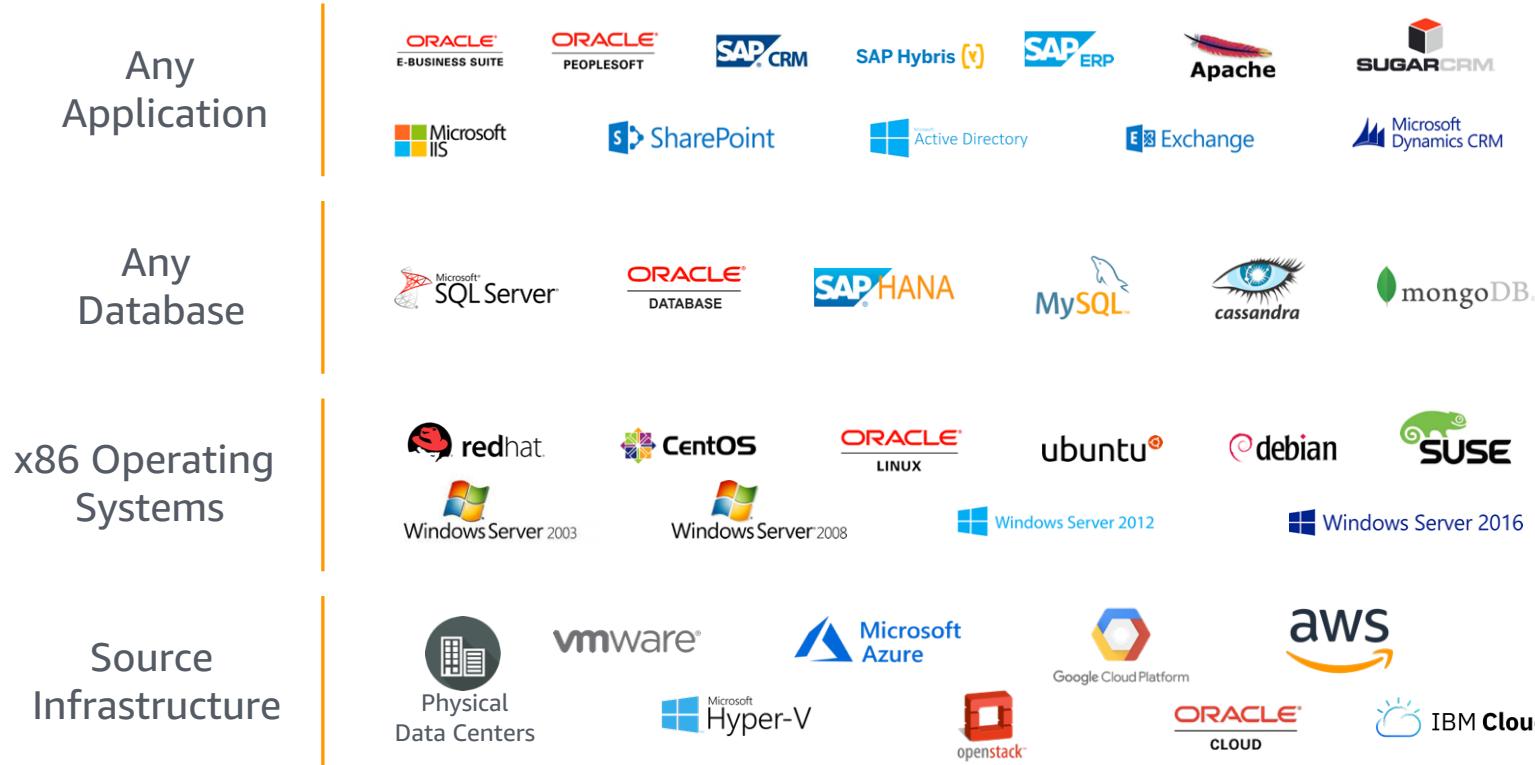
- CloudEndure continuously replicates any application or database from any source into AWS
- Business outcome: Allow self-service, rapid, reliable migrations with minimal business disruption



Network architecture



Wide platform support

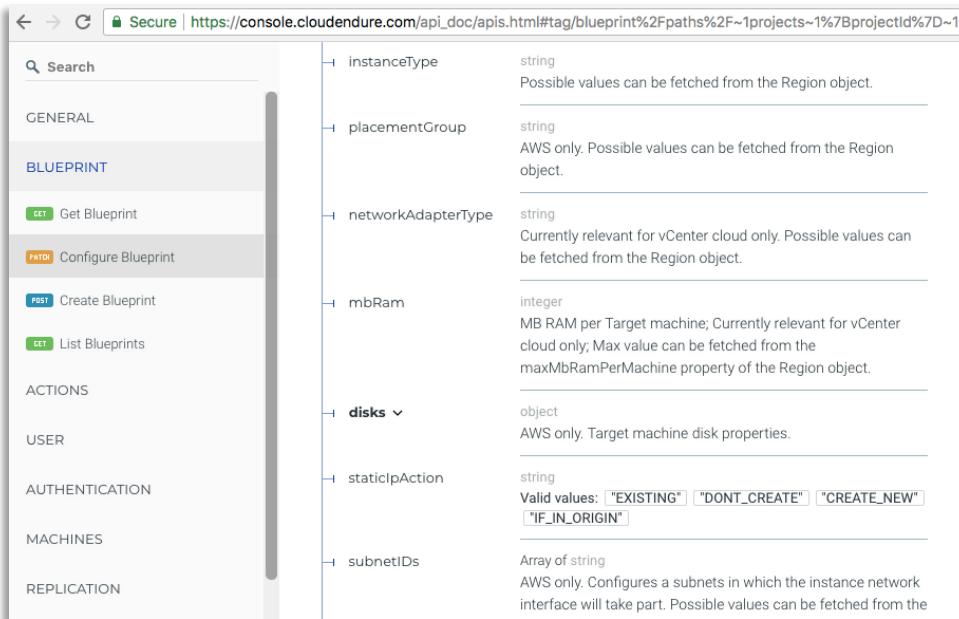


See documentation or contact Support for a complete list

CloudEndure Migration Demo

It's easy to build on top of CloudEndure

CloudEndure RESTful APIs



The screenshot shows a browser window displaying the CloudEndure API documentation at https://console.cloudendure.com/api_doc/apis.html#tag/blueprint%2Fpaths%2F~1projects~1%7BprojectId%7D~1b. The left sidebar lists categories: GENERAL, BLUEPRINT, ACTIONS, USER, AUTHENTICATION, MACHINES, and REPLICATION. Under BLUEPRINT, there are links for Get Blueprint, Configure Blueprint, Create Blueprint, and List Blueprints. The main content area shows a detailed schema for a Blueprint resource, including fields like instanceType, placementGroup, networkAdapterType, mbRam, disks (with a dropdown arrow), staticIpAction, and subnetIDs.

```
instanceType: string  
placementGroup: string  
networkAdapterType: string  
mbRam: integer  
disks: object  
staticIpAction: string  
subnetIDs: Array of string
```

Common integration use cases

- Automated agent deployment
- Settings blueprints
- Automated machine launch
- Simplifies automated application testing
- Post-launch software removal/deployment and configuration

Keys to a successful implementation

	What to do	Why is this important
Implementation	<ol style="list-style-type: none">1. Identify the Source machines2. Group into waves3. Set cutover date for each wave	Better resource allocation and project continuity
Initial Replication	<ol style="list-style-type: none">1. Install Agents in stopped mode2. Start the replication, each wave at the time	Avoid network overloading Decrease IT overhead
Continuous Replication	Confirm replication reaches ' Continuous Data Protection ' mode (CDP)	Only after initial replication has completed can the target machine be launched
Testing	Test target machines 1-2 weeks before the actual cutover	Leave time to address any issues that may come up
Cutover	Verify CDP mode	Minimize cutover downtime

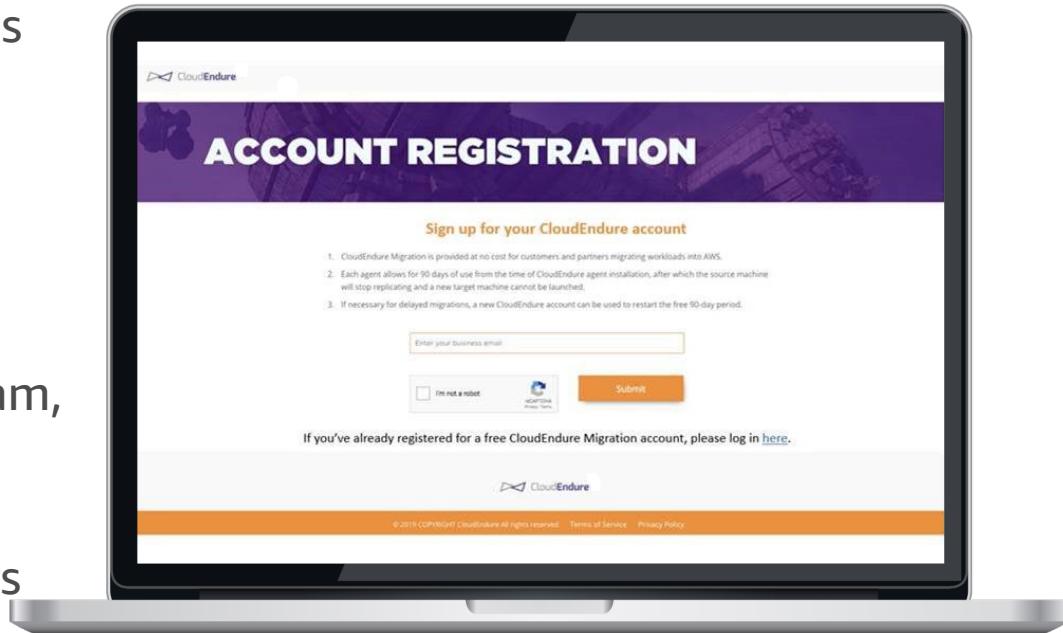
Use cases

- ➔ Lift-and-shift, then optimize
- ➔ Vast majority of Windows / Linux servers when agent can be installed on source machines
- ➔ On-premise to AWS, cloud to cloud, cross-region
- ➔ Replicating block storage devices: SAN, iSCSI, physical, EBS, VMDK, VHD...
- ➔ Replicating full machines / volumes



CloudEndure Migration license model

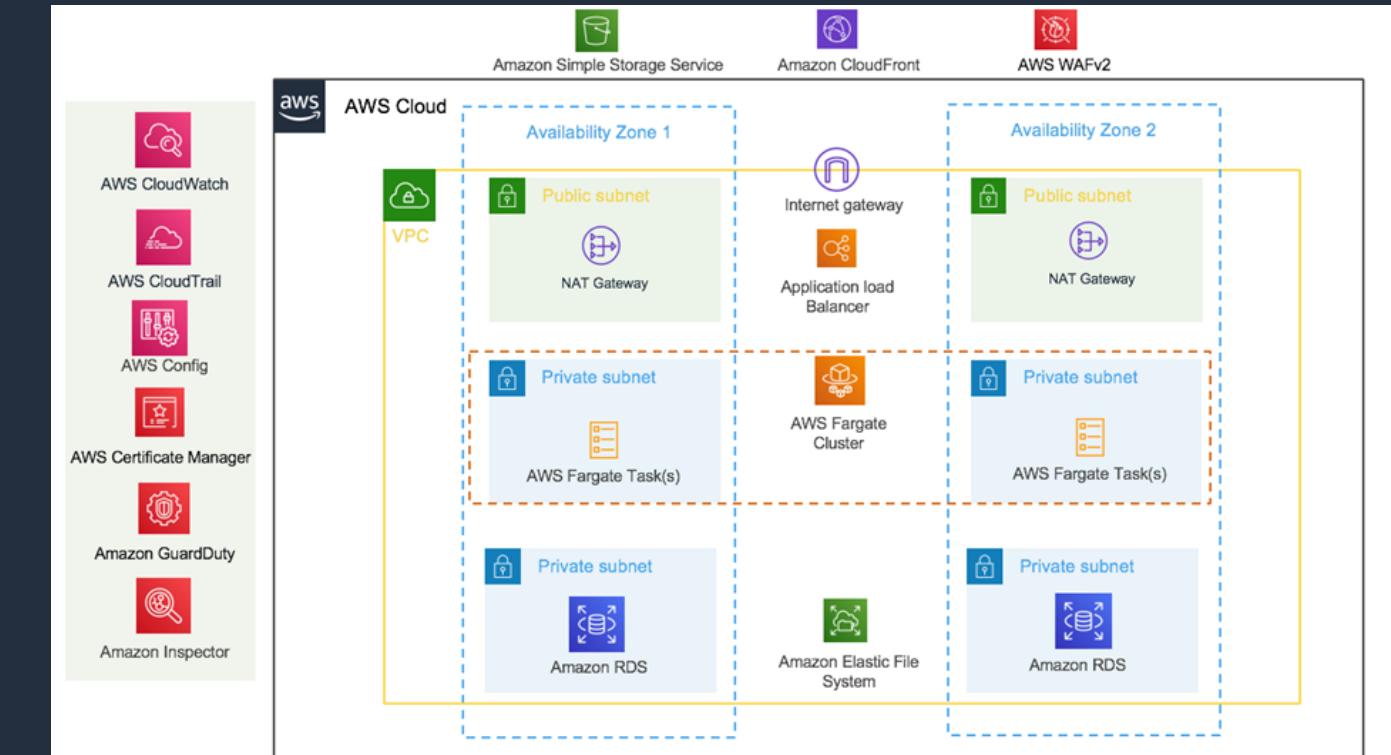
- Get your free migration licenses at aws.amazon.com/clouendure
- Each license – one per source machine – is valid for 90 days
- For assistance contact your consulting partner, account team, or AWS Professional Services
- Additional program benefits available to qualified customers and partners



Self-paced AWS Application Migration Workshop

Self-paced 2-hour hands-on migration to AWS that covers:

- Re-hosting with AWS CloudEndure Migration
- Re-platforming with AWS Database Migration Service
- Modernization with containers on AWS Fargate
- Tips for further optimization of architecture according to AWS Well-Architected



<http://application-migration-with-aws.workshop.aws/>



Do your readiness assessment and learn the methodology

100+ runbooks and
strategies to migrate
quickly

<https://aws.amazon.com/prescriptive-guidance/>

Take the quick
Readiness Assessment
and start the
Transformation

<https://clouדרeadiness.amazonaws.com/#/cart>





Thank you