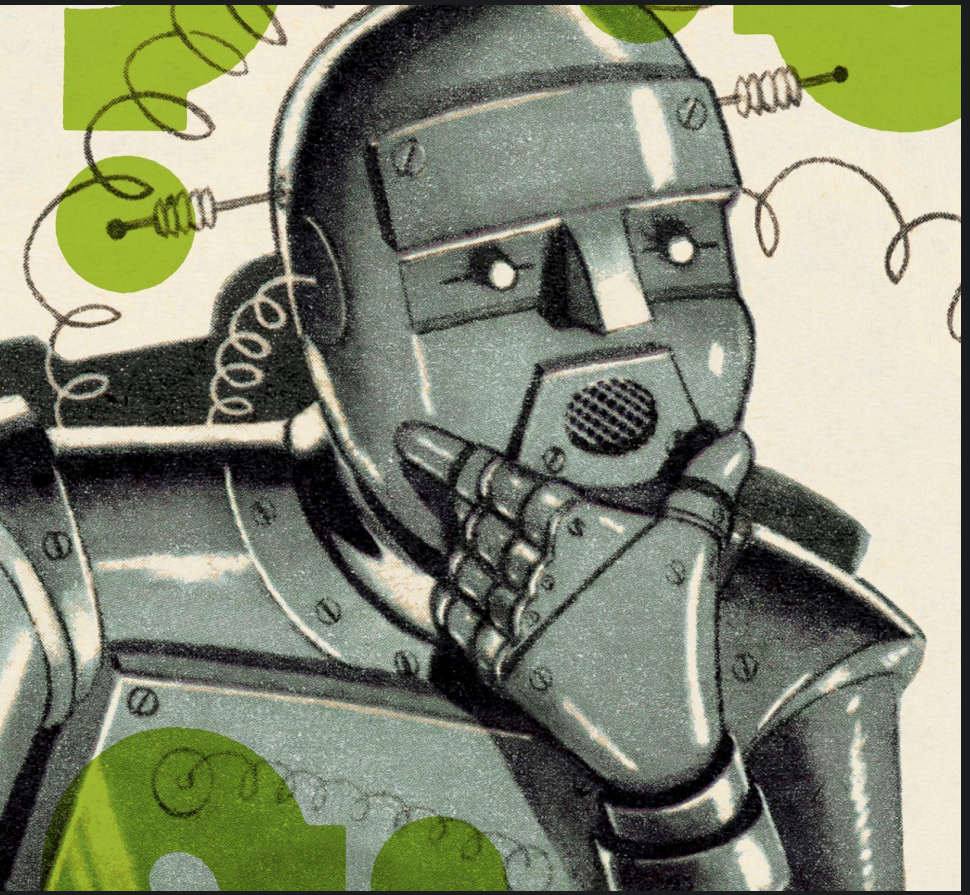
Cloudamize
Results Overview

Created on February 06, 2025 for Example Customer



Summary Content

Assessment Summary
Financial Summary
SQL Core Reduction Strategies
Storage Assessment
EOL / EMP Assessment
Modernization Options
Business Value

Cloudamize™

1. Assessment Summary

Cloudamize Overview

Cloudamize

- Industry leader & Cloud Service Provider Partner for over a decade
- Supporting ~700 assessments / migrations annually
- Influencing ~$1B in CSP Spend
- Globally positioned support and engineering teams to enable in-region support for customers and partners

aws PARTNER Select Tier Services

aws Qualified Software

aws PARTNER Public Sector

aws PARTNER Migration & Modernization Software

aws PARTNER AWS Marketplace Seller

aws PARTNER AWS Microsoft Workloads Software

aws PARTNER

- Public Sector
- AWS Marketplace Seller
- AWS Microsoft Workloads Software Competency
- Migration & Modernization Software Competency

Assessment Overview

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- Total Servers Assessed: **2,635**
- Servers Assessed via Agent/Agentless: **2,635**
- Servers Assessed via vCenter/Hyper-V: **0**

- Windows Servers in Scope: **2,258**
- Linux Servers in Scope: **377**
- Storage (TB): **1.3PB**
- Storage Utilization (TB): **629.6TB**
- SQL Server Overview
  - Enterprise: **165**
  - Standard: **270**
  - Web: **0**

Excluded from Scope;
- Removed from Scope: **0**
- Zombie Machines: **524**
  (see Zombie Machine Analysis)

- Applications Discovered: **4,352**
- Business Applications Defined: **12**

If this number seems high, we encourage the use of the Cloudamize *Plan* component to remove the non-business level applications.

Cloudamize License Period

Started: *May 31, 2024*
Ended: *August 20, 2024*

Data Collection Period *(11 Days)*

Started: *June 25, 2024*
Ended: *July 06, 2024*

Live Pricing Calculated on: November 07, 2024

2. Financial Summary

Financial Overview

Infrastructure Modernization + Licensing Optimization + Savings Plan Commitment

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Savings Levers & Subtotals (Annual)	Savings Category	Implementation Path	On Demand Pricing *(SQL BYOL*)*	On Demand Pricing *(SQL License Included)*
Lift & Shift Annual Est.			$12.4M	$17.2M
Savings by Applying Cloudamize Infra. Mod. Recommendations	Technical		⬇️ $4.7M 38% Savings	⬇️ $1.5M 9% Savings
Optimized Instance Recommendations		Cloudamize	⬇️ *$4.7M*	⬇️ *$1.5M*
***Optimized core requirements: SQL Servers*		Cloudamize	⬇️ *$9.7M*	*Coming Soon!*
***Downgrade non-prod SQL to Developer edition*		*Getting started guide*	⬇️ *$387K*	⬇️ *$360K*
***Reduce non-prod runtimes (356 Servers)*		*AWS instance scheduler*	⬇️ *$345K*	
Savings from Savings Plan Commitment *(3 YR NURI)*	Commercial	FAQ	⬇️ $2.5M 20% Savings w/ SQL BYOL 14% Savings w/ SQL LI	
TOTAL Annual Estimate	Technical & Commercial	Cloudamize & AWS	$5.2M ⬇️$7.2M (58%)	$13M ⬇️$7.2M (36%)

Additional Savings Plans::
- 1 YR NURI: ⬇️ $1.5M
- 1 YR AURI: ⬇️ $1.7M
- 3 YR AURI: ⬇️ $2.7M

** SQL BYOL model does not include costs paid to Microsoft for SQL licensing. Add BYOL costs to the SQL BYOL option to understand apples to apples comparison.*
*** Savings not reflected in overall estimates, as they are dependant on the customer's contract with Microsoft, and/or requires additional actions to secure*

Financial Overview

Savings Plan Comparison

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	Annual Cost	Cost Difference	Compute	*Storage	**Network
On-Demand Shared Tenancy Hardware / Lift & Shift	$12.4M		$10.2M	$2M	$211K
On-Demand Shared Tenancy Right Sized | No Upfront	$7.7M	38%	$6.7M	$771K	$211K
1-Year RI Shared Tenancy Right Sized | No Upfront	$6.2M	50%	$5.2M	$771K	$211K
3-Year RI Shared Tenancy Right Sized | No Upfront	$5.2M	58%	$4.3M	$771K	$211K

** Storage costs provisioned at 100% utilized*
*** Traffic costs are estimated at 10% of total egress traffic.*

Financial Overview (Cont.)

Infrastructure Modernization Optimization Specifics

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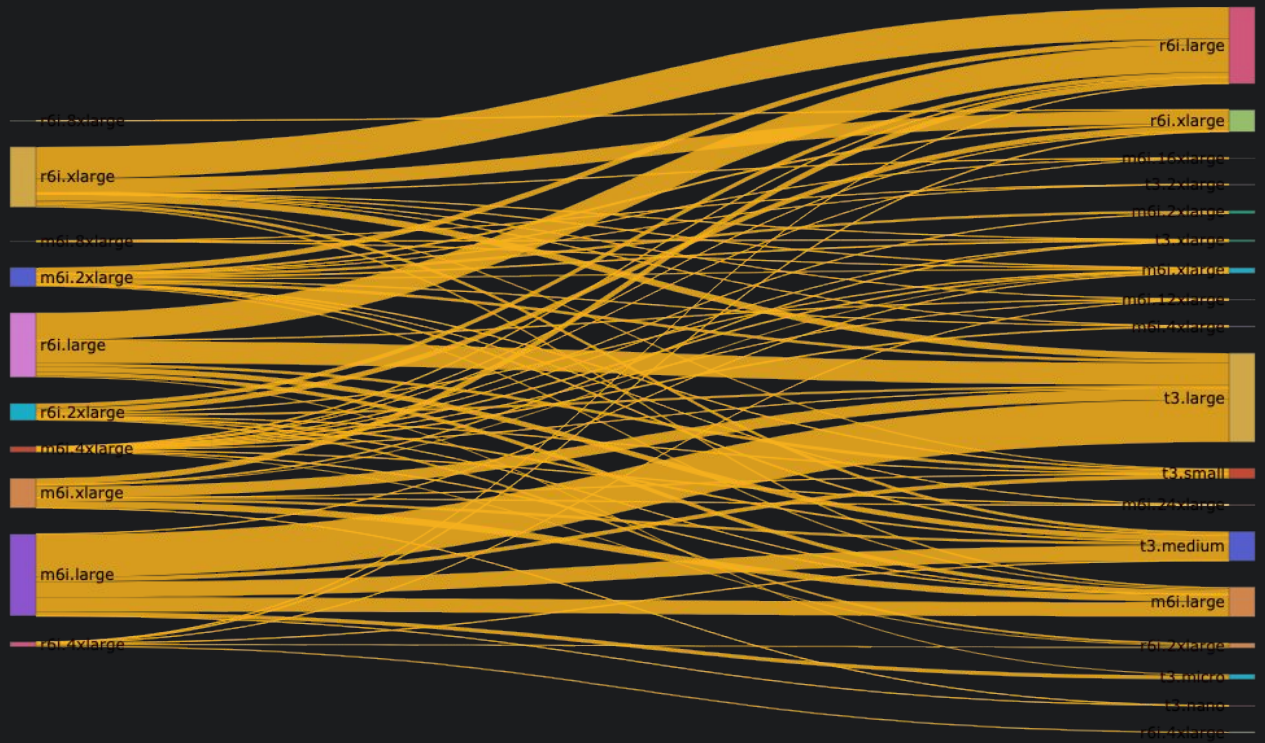
Hardware Mapping
(Lift & Shift)

Workload Mapping
(Cloudamize Right-Sized)



This chart shows the transition of machine instance families from a “lift and shift” migration to a workload utilization optimized, or “Right Sized” migration.

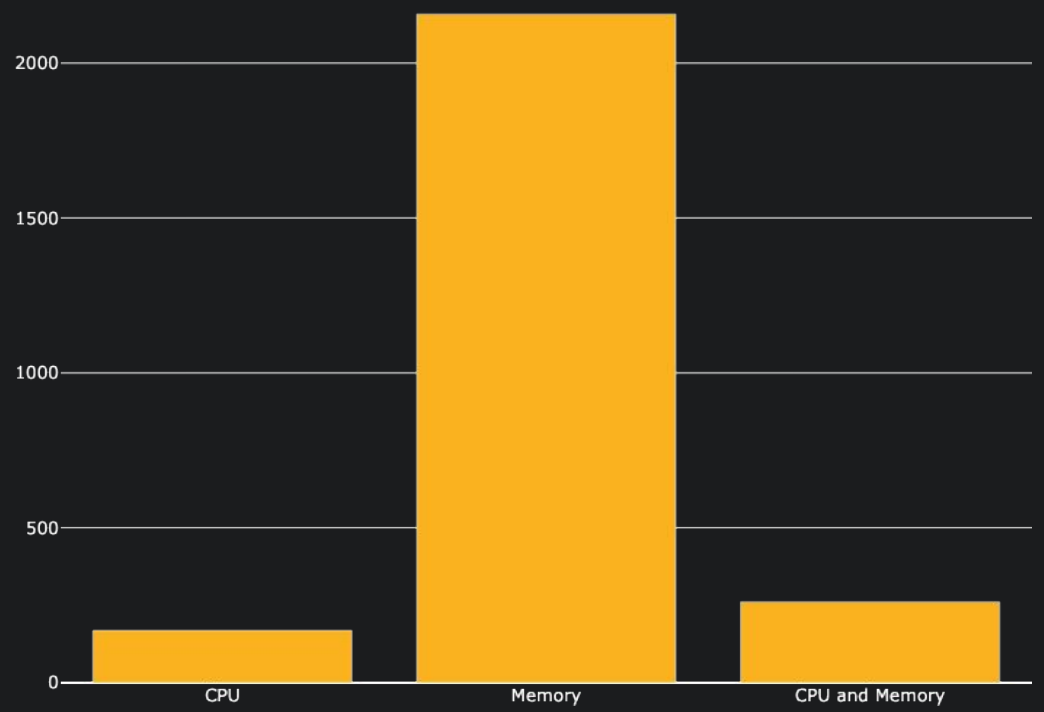
Model Notes

- Tenancy: Shared
- Target Peak CPU Threshold: 80%
- Storage Capacity Scaling: 100%
- Network Load Factor: 10%

Financial Overview (Cont.)

Optimization Logic & Constraints

CPU Constrained Machines	**169**
Memory Constrained Machines	**2,158**
CPU & Memory Constrained Machines	**261**



Notes:
The *Constraint* is the main reason Cloudamize cannot recommend the next smallest EC2 instance.

A smaller EC2 instance would face performance issues such as CPU, Memory, or Disk IO.

Potential Savings with Graviton

Linux Servers	**377**
Graviton OS Ready Servers	**105**
Non Graviton Cost	**$104K**
Graviton Cost	**$95K**
Total Annual Savings	**$10K**

Notes & Compatibility
Before migrating to Graviton based instances, verify that your workloads are supported. Learn more.

Talk to your Cloudamize TAM if you're interested reviewing a Graviton-centric TCO.

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Graviton ARM64 processors are supported by most modern Linux OSs.

10%

Total Estimated Annual Savings with Graviton

VMware Licensing Analysis

On-Premise Licensing Cost Estimate

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	1 Year	3 Years	5 Years
VMware Cloud Foundation	$48K	$143K	$238K
VMware vSphere Foundation	$18K	$55K	$92K
VMware vSphere Standard	$7K	$20K	$34K

Note: This cost is an estimate of licensing only based on published 3-year term pricing.

1 Data Centers

1 Clusters

4 Hosts

136 Licensed Cores

VMWare Licensing Analysis

Estimated Savings Via Migration to AWS

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Know your actual on-premises infrastructure costs for these VMs? Let us know and we'll update the analysis!

	Annual Infrastructure Cost	Annual VMWare Licensing**	Total Cost of Ownership
On-Premises	**$297K***	**$18K**	**$316K**
AWS EC2 ***(Lift & Shift)***	**$297K**	**$0**	**$297K**
AWS EC2 ***(Cloudamize Optimized***)***	**$117K**	**$0**	**$117K**

** On-premises costs estimated by.....*
*** Analysis based on the 1 yr VMware vSphere Foundation model*
**** Modeled using 3 yr NURI*

69

Total VMs Migrated off of VMWare

63%

Reduction in Cost via moving to AWS EC2 with Cloudamize Infrastructure modernization

3. SQL Core Reduction Strategies

SQL Core Reduction

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	Standard	Enterprise	Total
Current on-prem SQL cores	1,472	1,412	2,884
AWS SQL cores, Cloudamize Right-size (migrating to right-sized EC2 instances only)	1,256	1,972	3,228
AWS SQL cores, post applying Optimize CPU configs (BYOL only)	1,024	776	1,800

1,084 cores reduced compared to on-prem

Reducing SQL Server cores frees up licenses for use on other servers immediately, and can result in savings on future SQL Server purchases and Software Assurance renewals.

AWS's "Optimize CPU" feature
Customers sometimes need to select Amazon EC2 instances with more vCPUs than needed due to factors like memory or IOPS requirements. To help save on vCPU-based BYOL licensing costs in such cases, AWS offers the “Optimize CPU” feature, which reduces licensable cores. You can specify a custom number of vCPUs when launching new instances, maintaining the same memory, storage, and bandwidth as a full-sized instance. For existing EC2 instances, the simplest way to apply Optimize CPU configurations is to create AMIs of your existing SQL servers and relaunch with your preferred CPU options.

SQL BYOL Core Reduction Savings

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	Standard	Enterprise	Total
~ Annual SQL SA savings, from BYOL core optimizations	$163K	$888K	$1.1M
~ Value of reusable BYOL SQL licenses (MSRP)	$884K	$4.8M	$5.7M
~ Value of Dev Downgrades (MSRP + SA)	$205K	$181K	$387K

BYOL SA savings realizable at next MSFT true-up or renewal.

MSRP value of reusable BYOL SQL licenses is achieved after implementing SQL Optimize CPU and Dev downgrade recommendations in AWS, and fully reusing the licenses on other SQL servers. Calculation uses the actual MSRP Ent and Std edition cost

Software Assurance (SA) savings potential is an estimate. Actual savings depend on your specific Microsoft pricing. SA savings are based on the following MSRP costs: Enterprise $2,793 per 2 cores, Standard $728 per 2 cores.

SQL License Included Savings

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	Standard	Enterprise	Total
Annual reduced core savings from Cloudamize Right-Sizing		**Coming soon**	
Annual savings from Dev Downgrades	**$202K**	**$158K**	**$360K**
Total Savings	**$202K**	**$158K**	**$360K**

Non-prod machines could use SQL Server Developer Edition, which has no license cost.
Servers using following naming conventions are assumed non-prod:
dev, poc, qa, tst, test, uat, demo, stage, stg, staging, hml, homolog, nonprod

Non Prod machines

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Group Name	Asset	Server Name	OS
Physical Infrastructure	Default	Names Removed from Example Deck	Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows (MS SQL Standard)
Physical Infrastructure	Default		Windows (MS SQL Standard)
Physical Infrastructure	Default		Windows (MS SQL Standard)
Physical Infrastructure	Default		Windows (MS SQL Standard)
Physical Infrastructure	Default		Windows (MS SQL Standard)
Physical Infrastructure	Default		Windows (MS SQL Standard)
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows
Physical Infrastructure	Default		Windows

Save **$345K** by reducing non-prod runtimes of **356** servers

You can use the AWS instance scheduler to automatically start and stop non-prod instances.

Save **$360K** by moving non-prod SQL machines to SQL Server Developer Edition, which has no license cost.
Getting started guide

Servers using following naming conventions are assumed non-prod:
dev, poc, qa, tst, test, uat, demo, stage, stg, staging, hml, homolog, nonprod

4. Storage Assessment

Storage Analysis

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Total Disk Capacity	**1.3PB**
Total Disk Occupancy	**629.6TB**
Recommended Total Disk Occupancy	**639.2TB**

AWS Recommends 100% disk occupancy for an initial TCO. If you'd like to increase this, we can customize your TCO to add storage headroom.

54%

Reduction in Storage via Cloudamize Optimization

Interested in modernizing your storage and potentially saving even more? Consider AWS FSx. Read more on the **FSx slide**.

Further Optimization with AWS FSx

Amazon FSx for Windows File Server provides fully managed shared storage.

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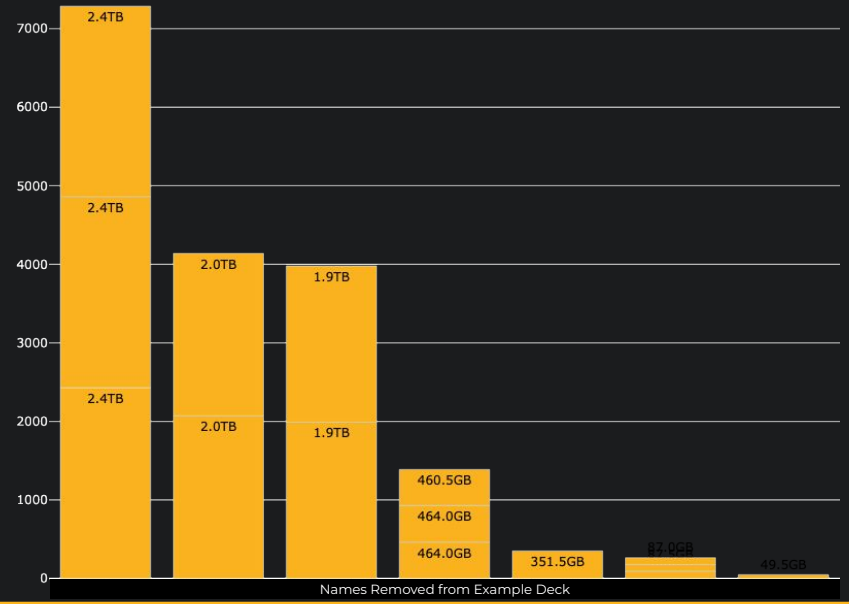
EC2 Compute	**$95K**
EC2 Storage	**$41K**
Total EC2 Cost	**$135K**
FSx Cost *(56 FSX Shares)*	**$59K**
Total Annual Savings *(Compute + Storage - FSx)*	**$76K**



9 Windows File Servers

56% Reduction in Cost via FSx, the easiest, most cost effective Windows file shares in the cloud.

Additional information here

5. EOL / EMP Assessment

Microsoft EOL Analysis

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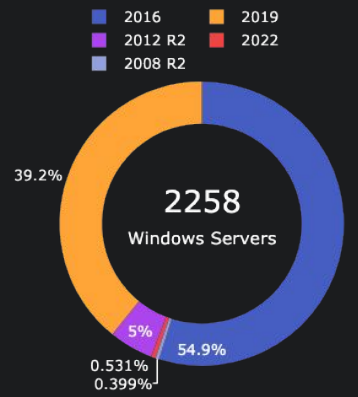
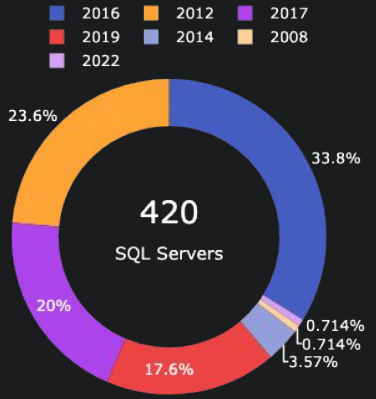
Windows Server Version	Count	OS Support Cycle	End of Ext. Support	Risk
<= 2012 R2	122	Unsupported	October 10, 2023	High
2016	1239	Extended Support	January 12, 2027	Med
2019	885	Extended Support	January 09, 2029	Med
2022	12	Supported until October 13, 2026	October 14, 2031	Low
2025	0	Supported until October 9, 2029	October 10, 2034	Low



SQL Server Version	Count	DB Support Cycle	End of Ext. Support	Risk
<= 2014	117	Unsupported	July 9, 2024	High
2016	142	Extended Support	July 14, 2026	Med
2017	84	Extended Support	October 12, 2027	Med
2019	74	February 28, 2025	January 8, 2030	Med
2022	3	January 11, 2028	January 11, 2033	Low



AWS EMP Program

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What is the EMP Program?

End of Support Migration Program (EMP) for Windows Server helps customers package legacy applications (on Windows Server 2003/2008/2012) allowing them to run on newer Windows Server OS (WS 2016/2019/2022) **without any code changes**.

The program provides tooling (**at no cost**) and optional access to experts.

Reach out to your Cloudamize TAM if you're interested in taking advantage of this program.

How does it work?

1. Perform Cloudamize discovery to identify candidates for EMP
2. The AWS EMP tool creates a Compatibility Package
3. Application with Compatibility Package is installed on latest version of Windows server in AWS
4. User Acceptance Testing is performed on Application
5. Deploy Application to Production

6. Modernization Options

RDS as an Option

	Standard Edition	Enterprise Edition	Total
Server Count	21	33	54
EC2 Cost	$178K	$832K	$1M
RDS Cost	$269K	$1.3M	$1.6M

Notes
Pricing above is based on 1YR NURI EC2 compared to RDS Standard onDemand

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RDS Benefits

- Focus on Innovation
- Migrate without Rearchitecting Apps
- Less Time Managing Databases
- Improve Database & Infra Efficiency
- Decrease Capital & Operational Expense
- High Availability & Durability
- Easy to Scale

Migration & Modernization Journey

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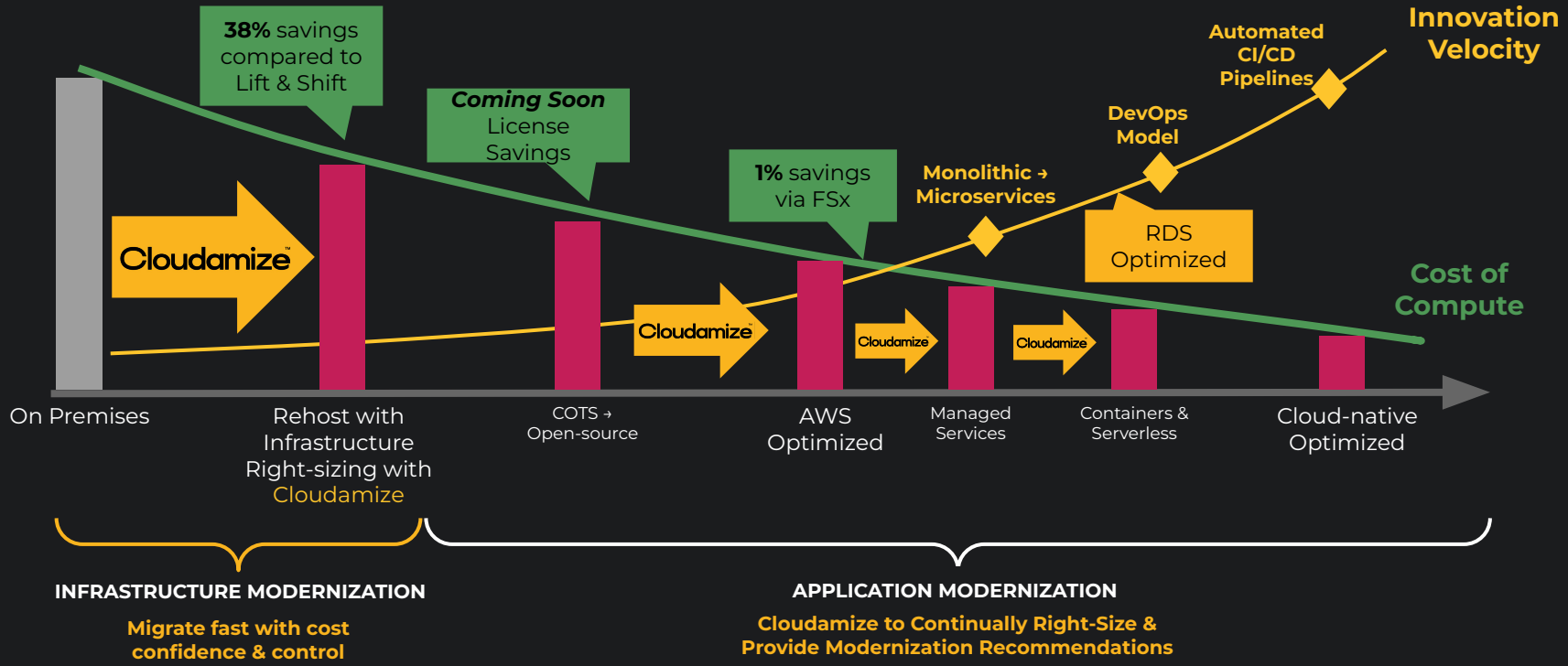

7. Business Value

Sustainability

Cloudamize estimates the per-instance On-Prem Carbon footprint from the CPU utilization, disk capacity, RAM, Cores, Uptime, etc.

Based on the **Cloudamize Infrastructure Modernized** plan, Cloudamize has calculated the Carbon footprint associated with moving to AWS.

Login to your Cloudamize Console to **Download the full Sustainability Report**.

Consult your local regulations to see if there are Carbon reduction business credits/incentives that can be realized as part of your migration.

1,200,850
kgCO2eq
On-Prem Estimation

27,270
kgCO2eq
In AWS Cloud Estimation

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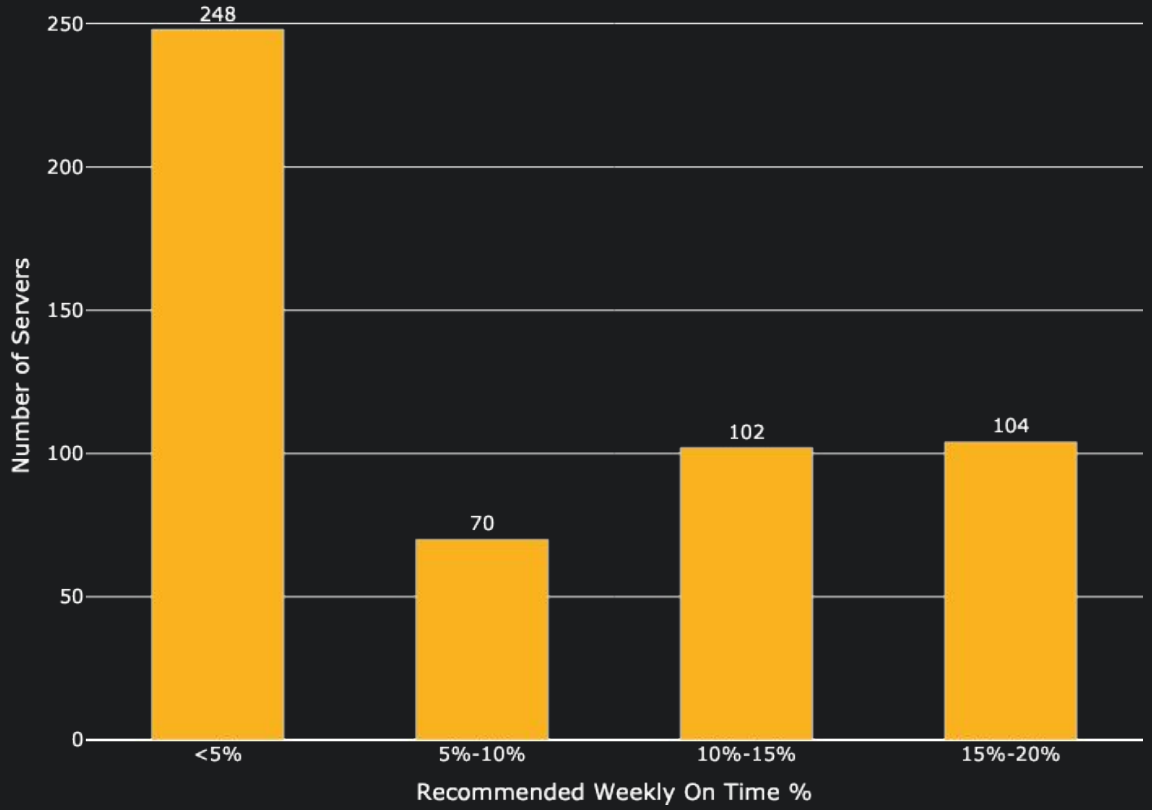
98%

Total Carbon Savings by migrating to AWS Cloud!

An awesome impact!

Zombie Server Analysis

Servers that are on, but contain < 20% usage



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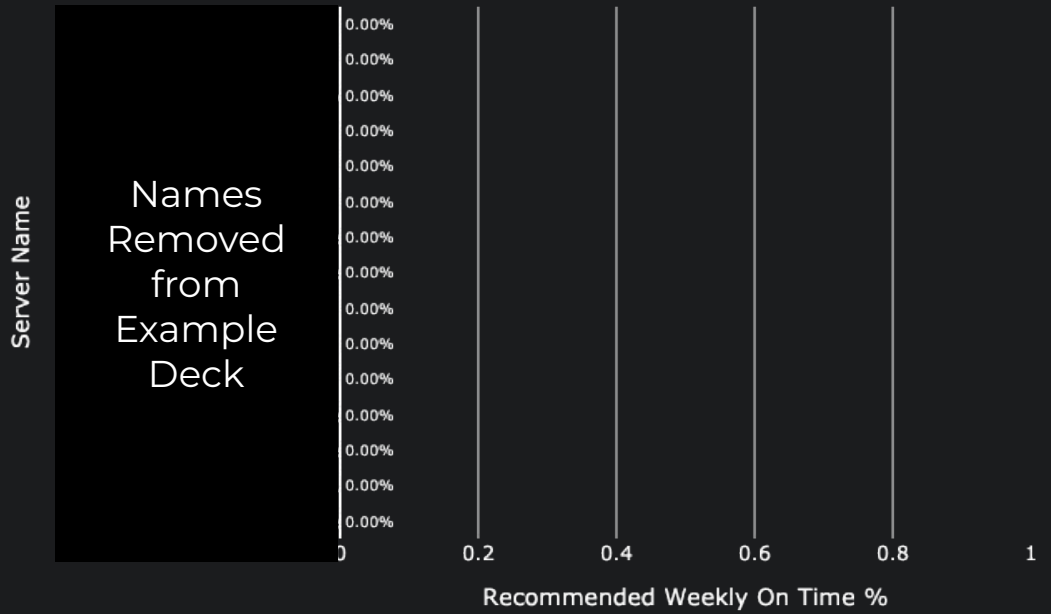
524

Servers with less than 20% usage

NOTE: Cloudamize identified these as Zombie servers based on the fact that they are running with extremely low usage. We highly suggest examining the server's role to validate and justify the server cost in AWS EC2 in order to confirm that they can be safely shutdown without impacting day-to-day operations.

Top Zombie Servers

Servers that are on, but contain < 20% usage



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$884K

Potential on-Demand Savings within the 0-20% usage group

Next Steps

- Investigate & confirm whether these are truly unused servers. The Cloudamize Plan component can be used to review all application dependencies on a server.
- If you're interested in an updated Cloudamize TCO, you can remove the instances from the assessment scope in the settings page.

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A. Appendix: Using Cloudamize to help with the Next Steps

Platform Overview

See following slides for more information

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DISCOVER

3 standard data collection methods plus advanced SQL telemetry collection. Now including NetApp integration!

ANALYZE

Explore various TCO plans, or create your own custom plan, to reduce your lift-&-shift cost by >50%.

PLAN

Explore application & server dependencies to intelligently group by Application, Wave, or 7R.

MIGRATE

Connect to the Cloud, Replicate Servers, and Apply Right-Sizing, all from within Cloudamize.

MANAGE

Orchestrate all of your team's assessment, planning, and migration activities with Runbooks.

MODERNIZE

Continuous in-cloud real-time modernization recommendations as you continue to grow your cloud estate.

After tagging your customer business applications, use the new Application Catalogue to add meaningful metadata & context

Need help planning the end-to-end migration activities? Cloudamize Runbooks (beta) are now available!

A1. PLAN

Wave, 7R, & Application Tagging

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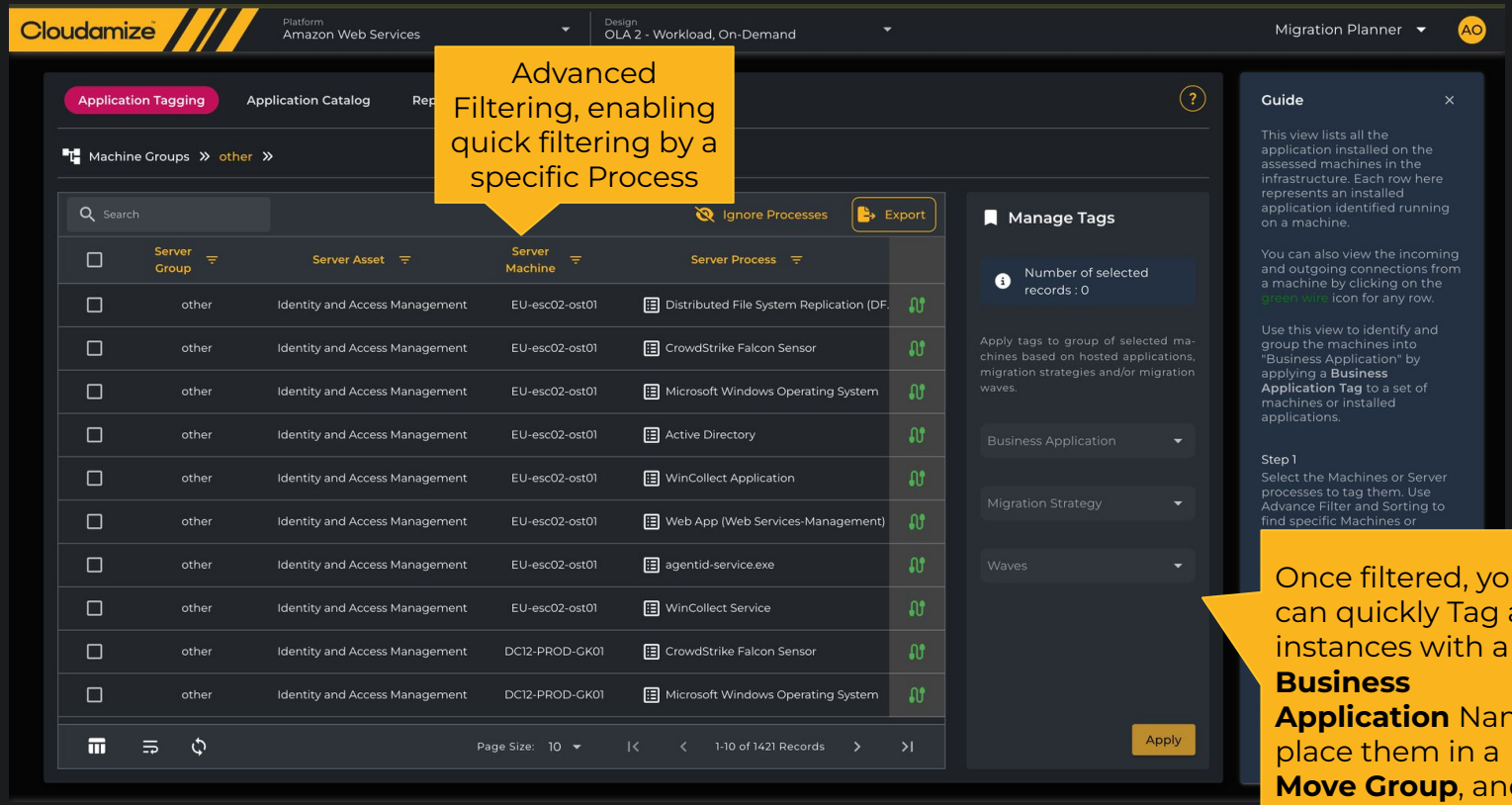

Once filtered, you can quickly Tag all instances with a **Business Application** Name, place them in a **Move Group**, and/or classify them with a **7R strategy**

Wave, 7R, & Application Tagging

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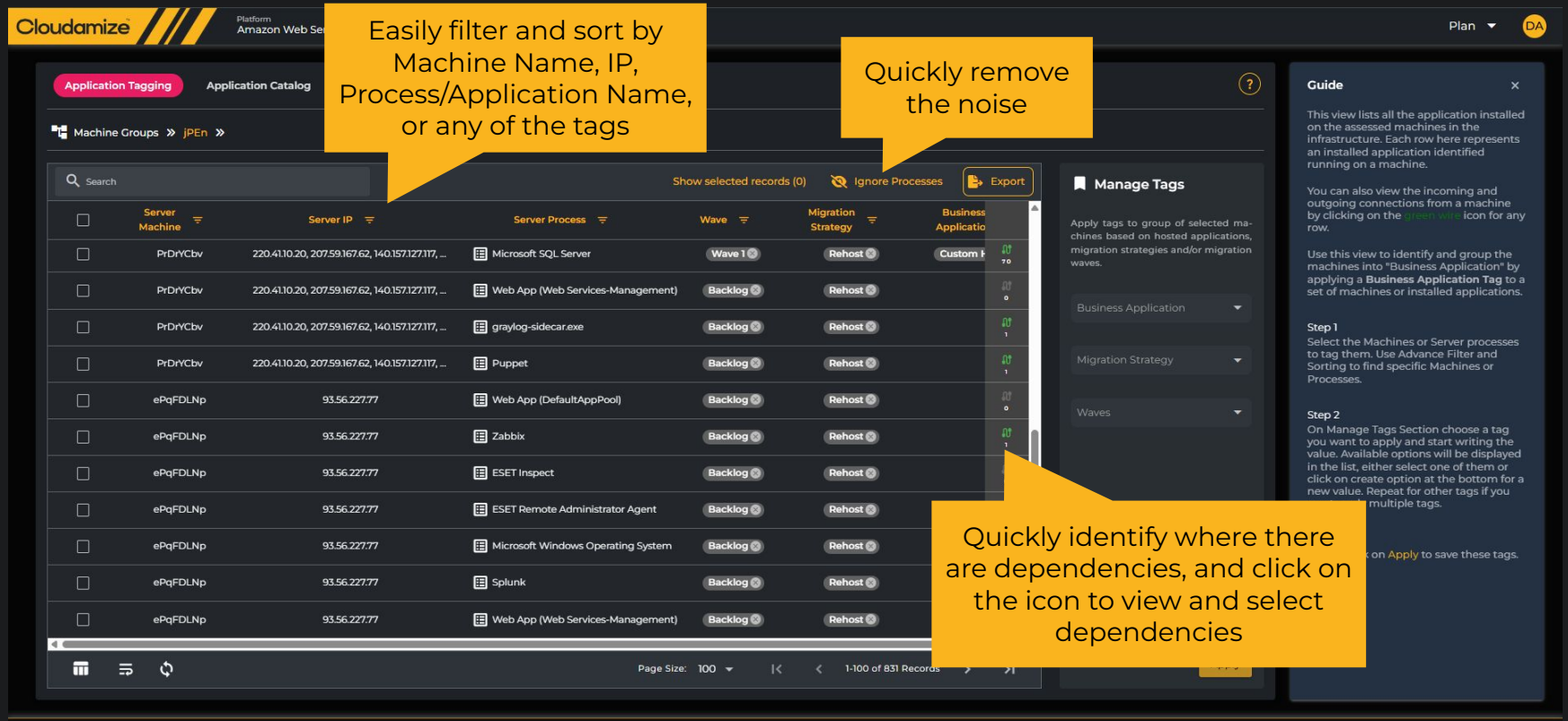

Wave, 7R, & Application Tagging

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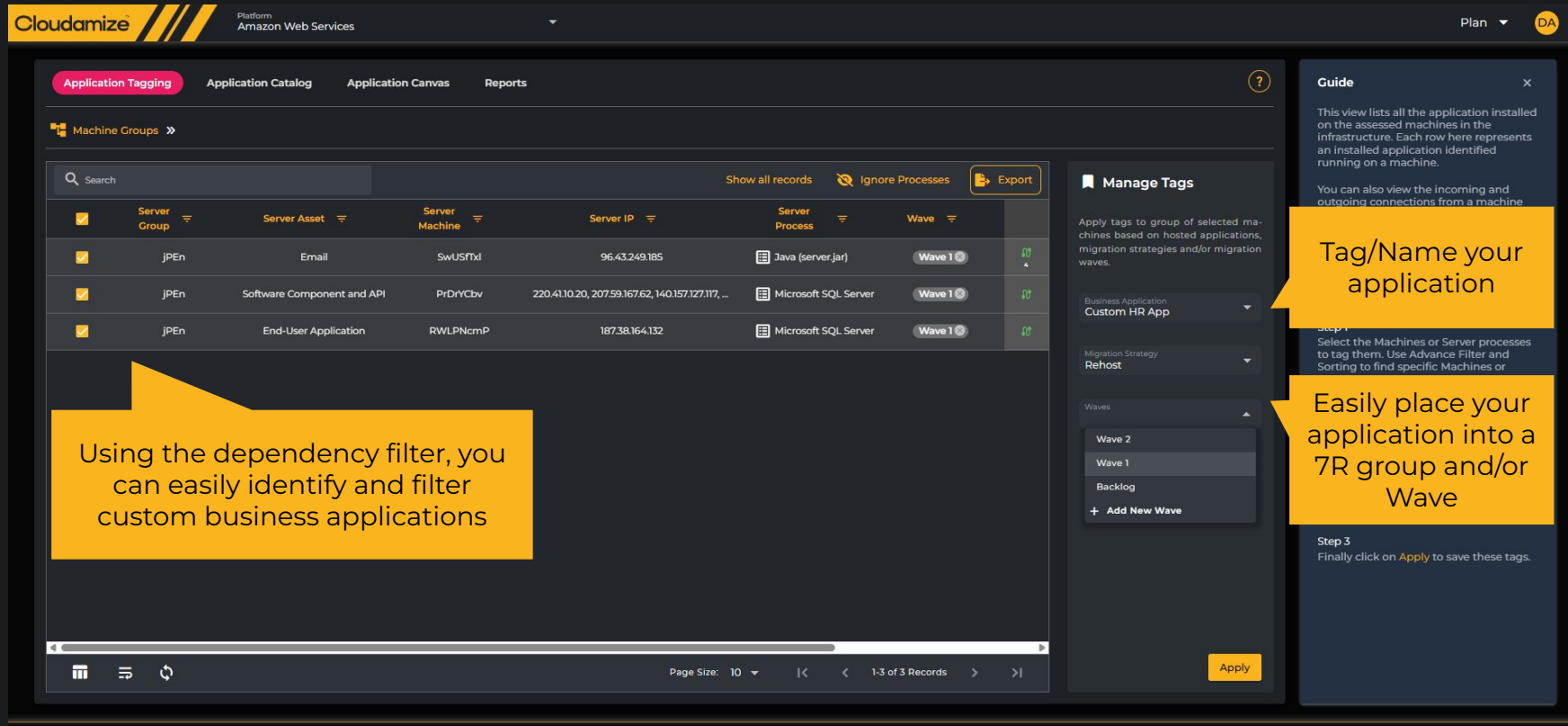

Application Catalogue

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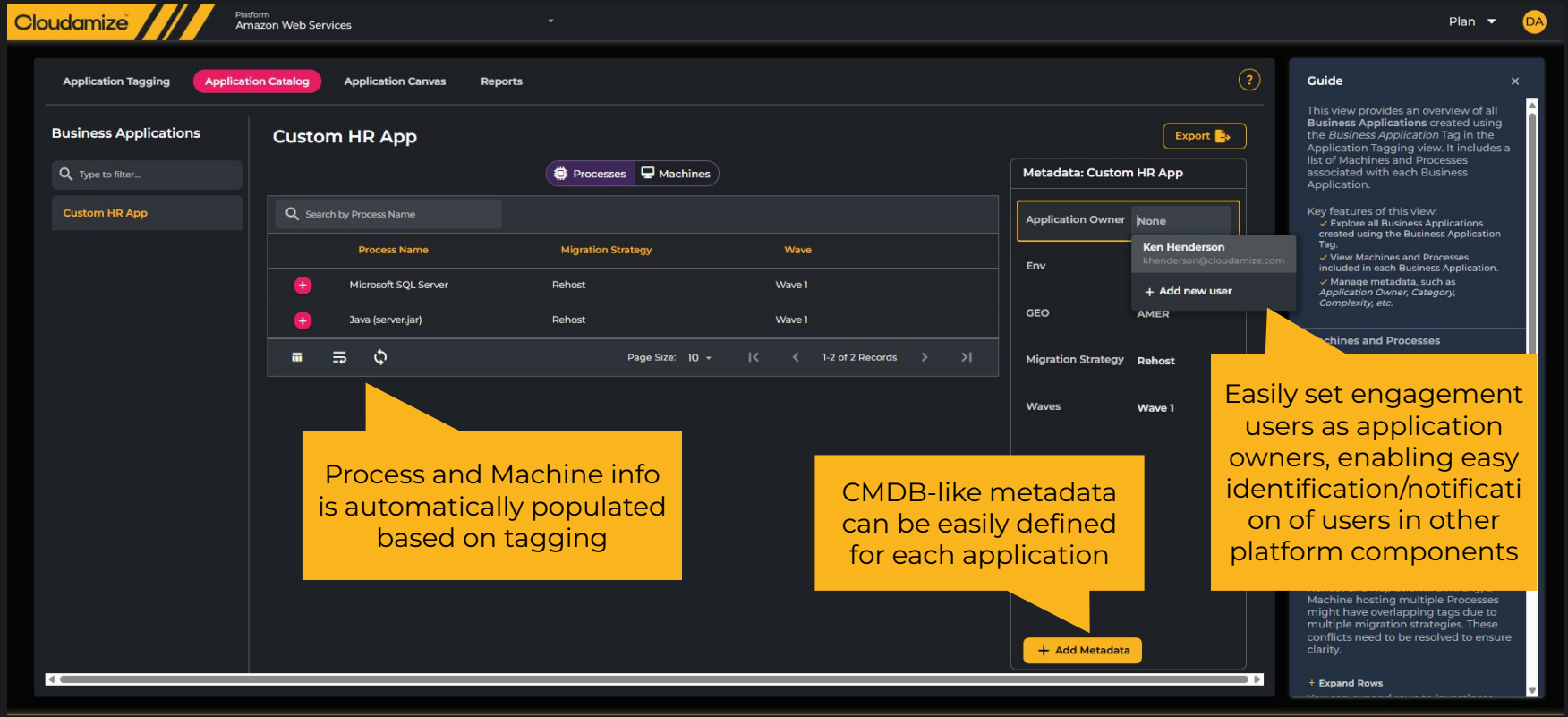

Canvas View: Application Identification

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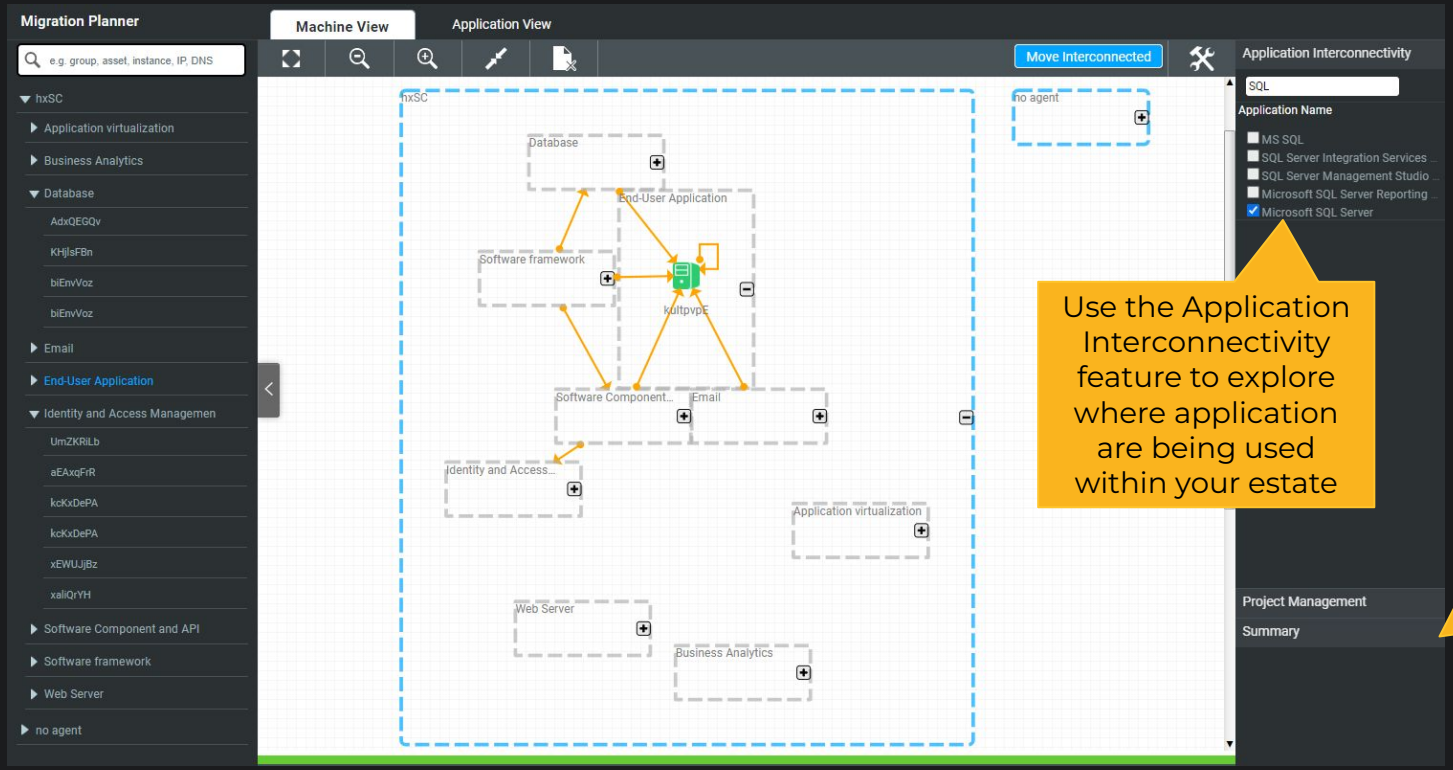
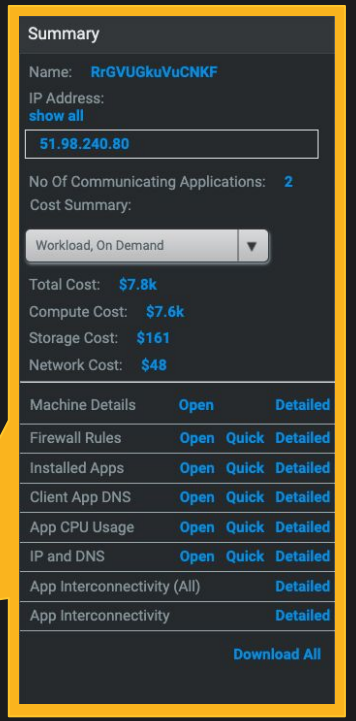


Use the Application Interconnectivity feature to explore where application are being used within your estate



Canvas View: Application Communication

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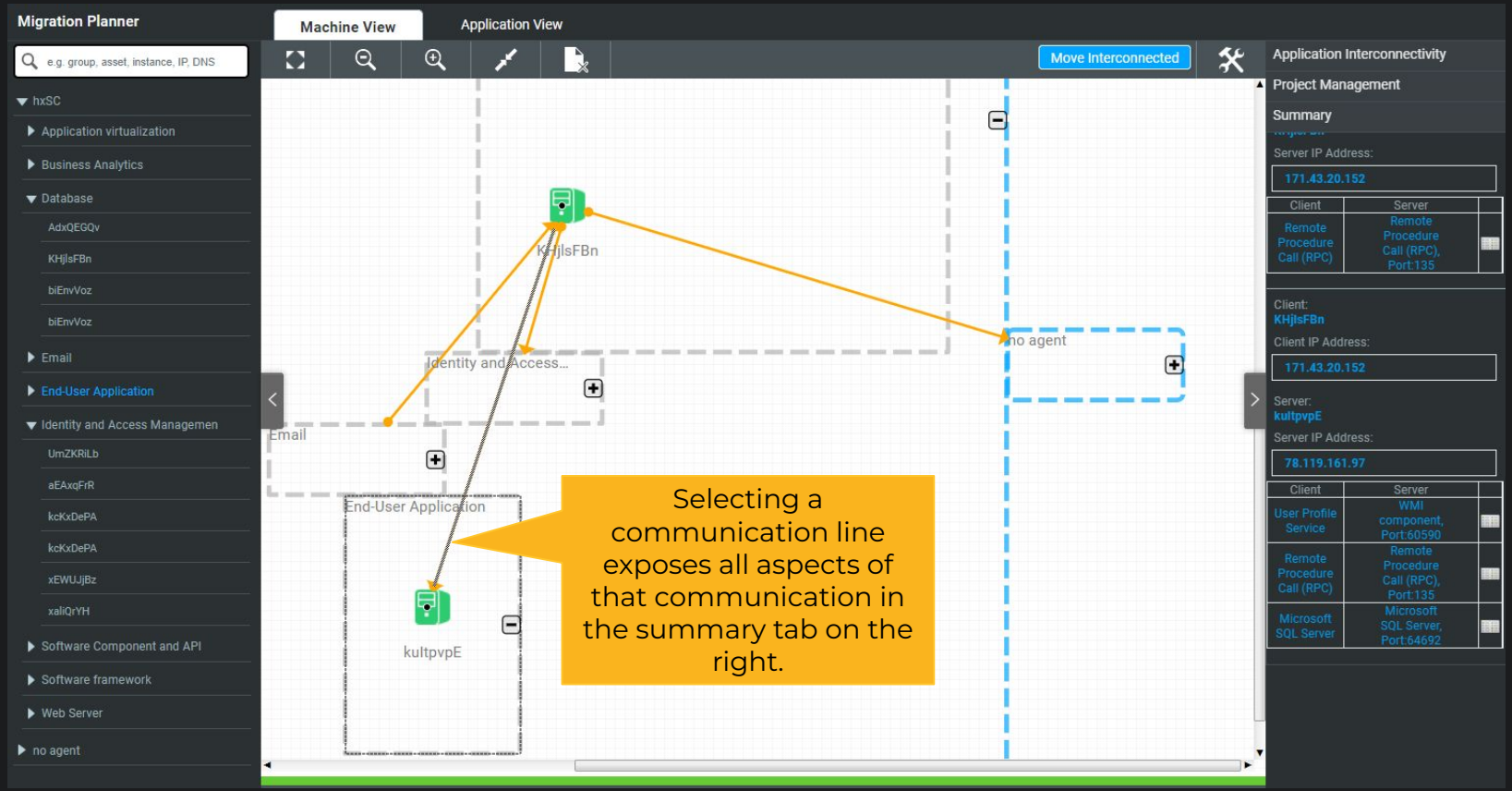

Canvas View: Next Generation

Coming in Q2 of 2025

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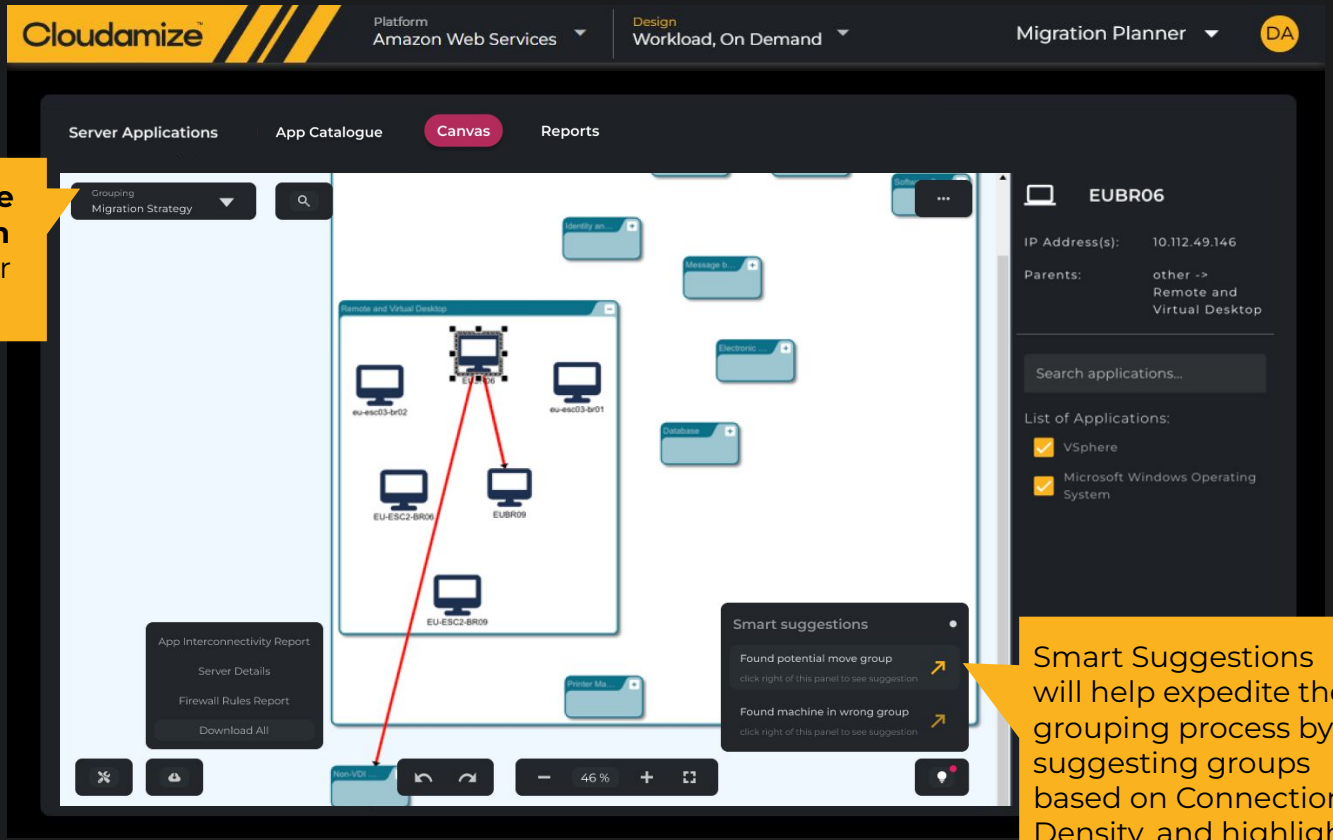
Visualize by **Move Group**, **Migration Strategy (7Rs)**, or **Applications**



Smart Suggestions will help expedite the grouping process by suggesting groups based on Connection Density, and highlight potential issues.

A2. MIGRATE

Migration Assistant Dashboard

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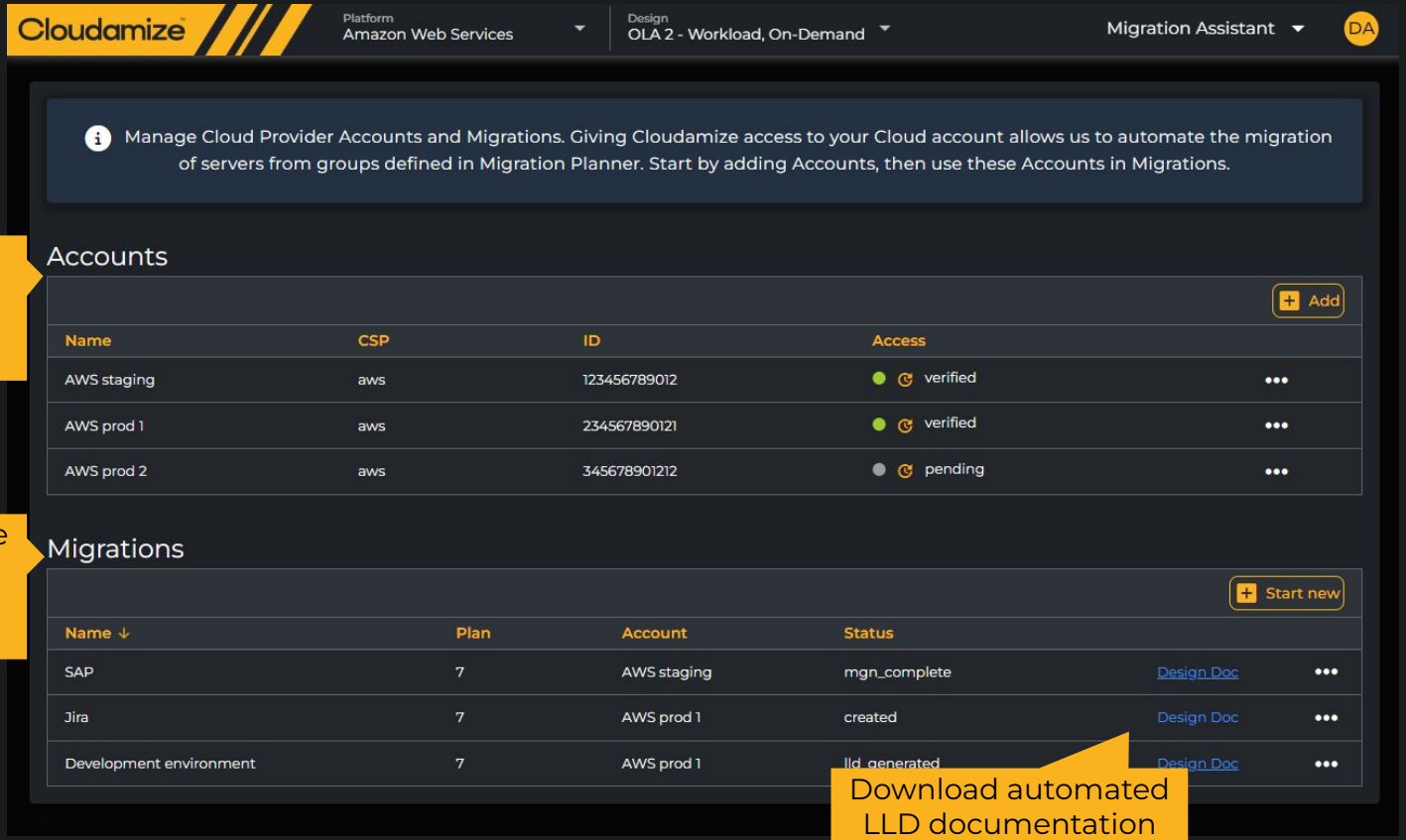

Add various CSP Accounts and/or environments

Start & manage multiple migration waves

Download automated LLD documentation for that specific Wave/Group

Connect to your Cloud Account

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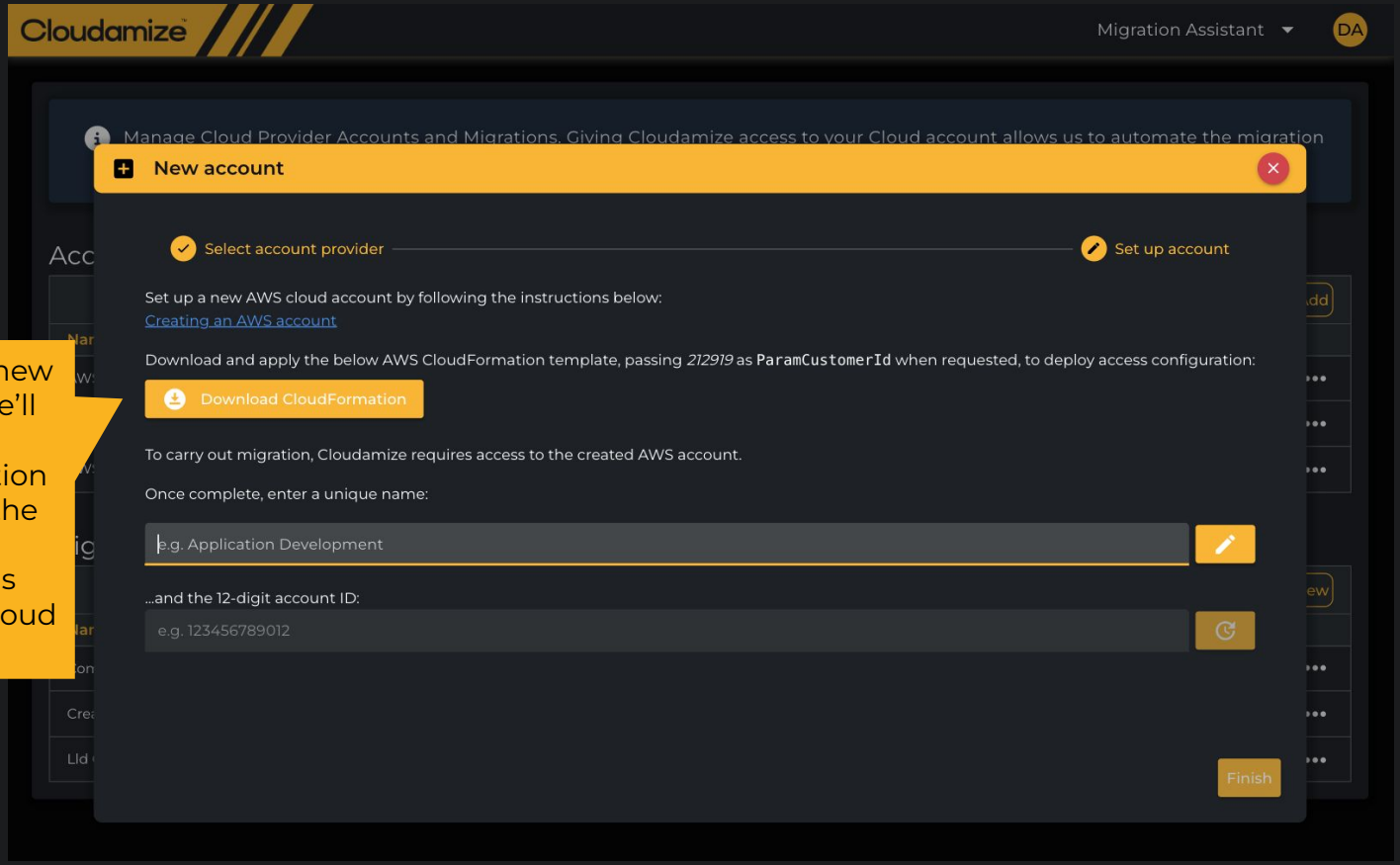

Easily create new accounts. We'll provide a CloudFormation to expedite the set-up & permissions within your Cloud account

Step1: Select a Migration Group

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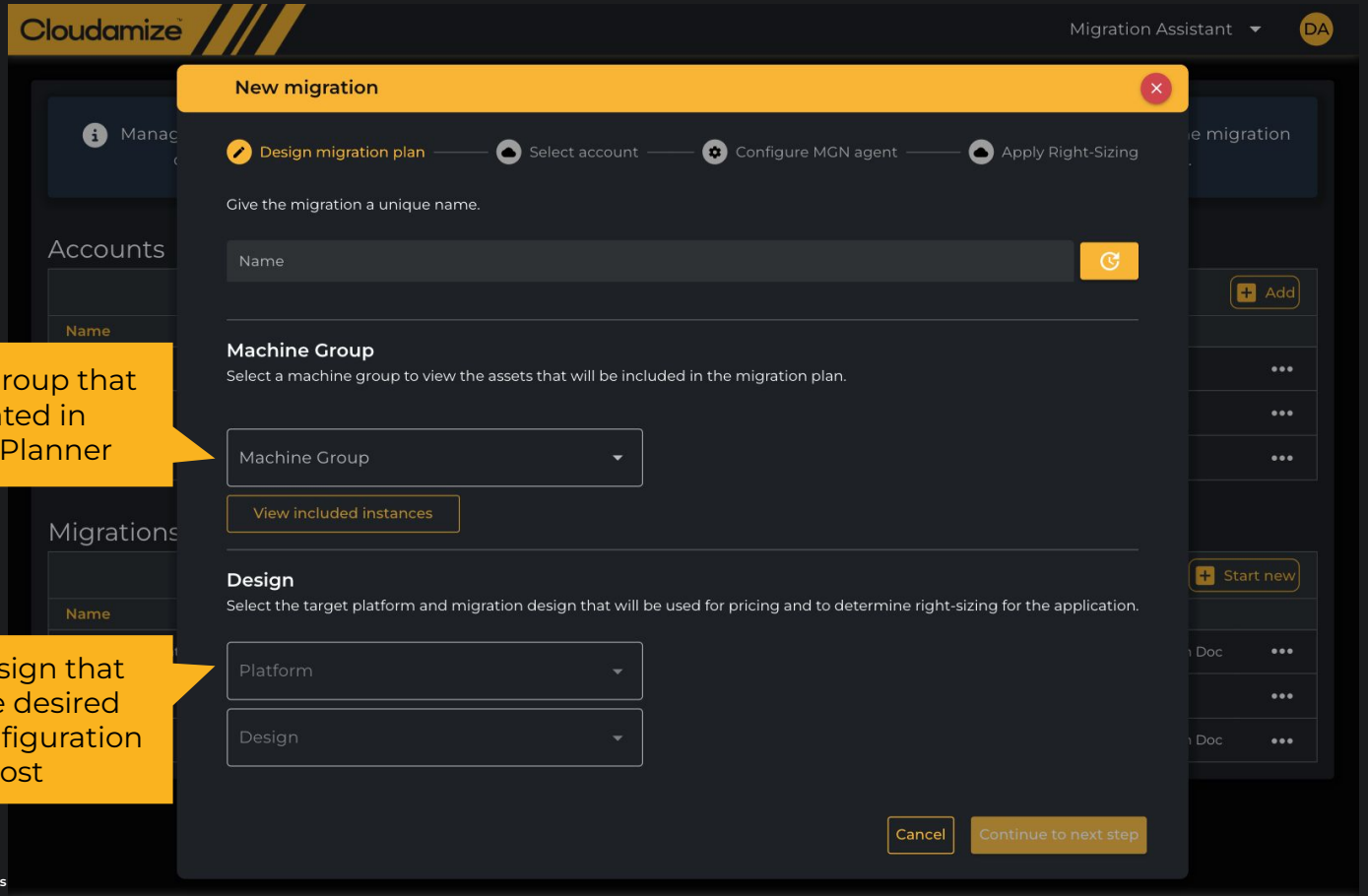

Select the Group that you Created in Migration Planner

Select a design that reflects the desired in-cloud configuration and cost

Step 2: Select an Account

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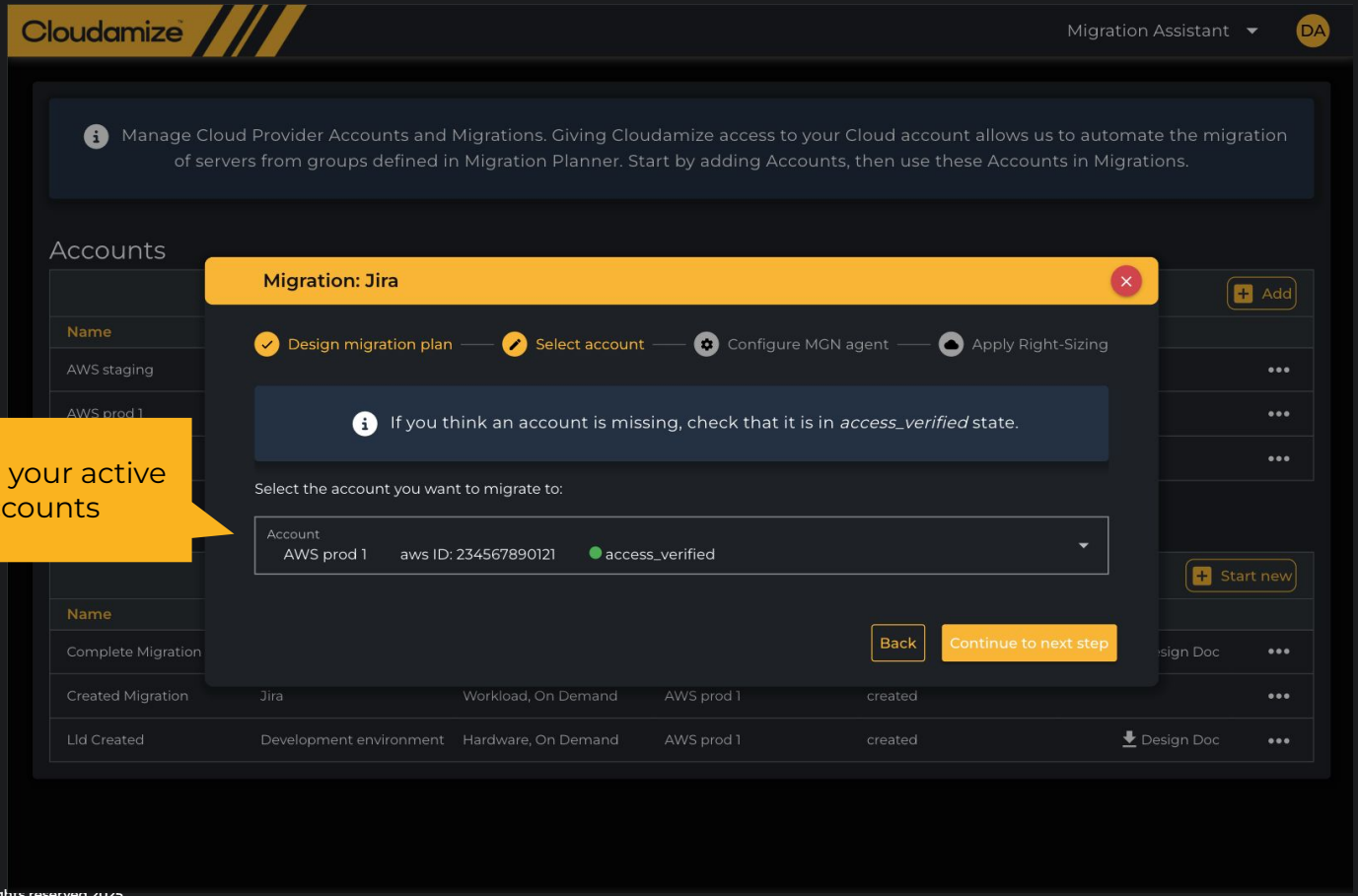

Select from your active CSP accounts

Step 3: Initiate Server Replication

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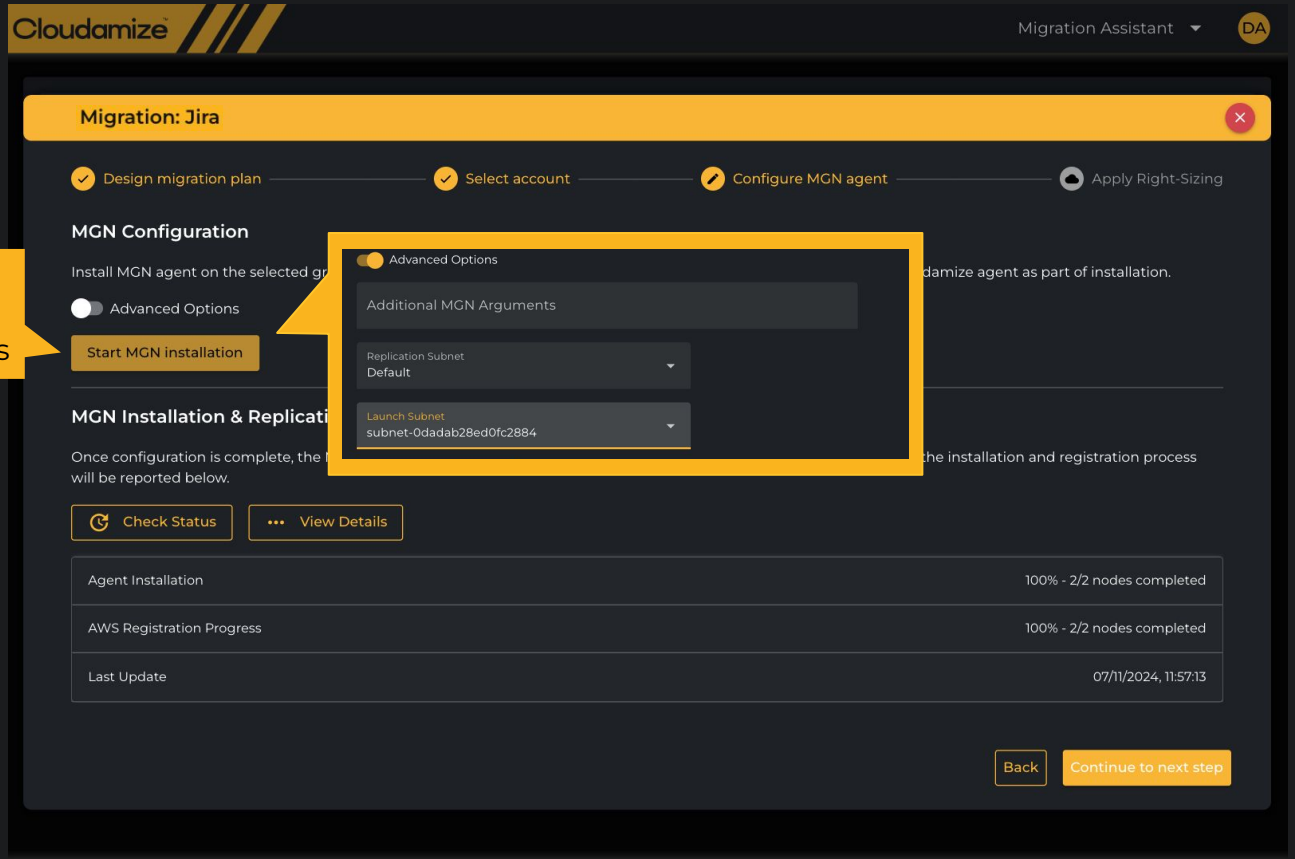
Initiate the replication & Monitor the status



Step 3 (Cont.): Easy Monitor Status

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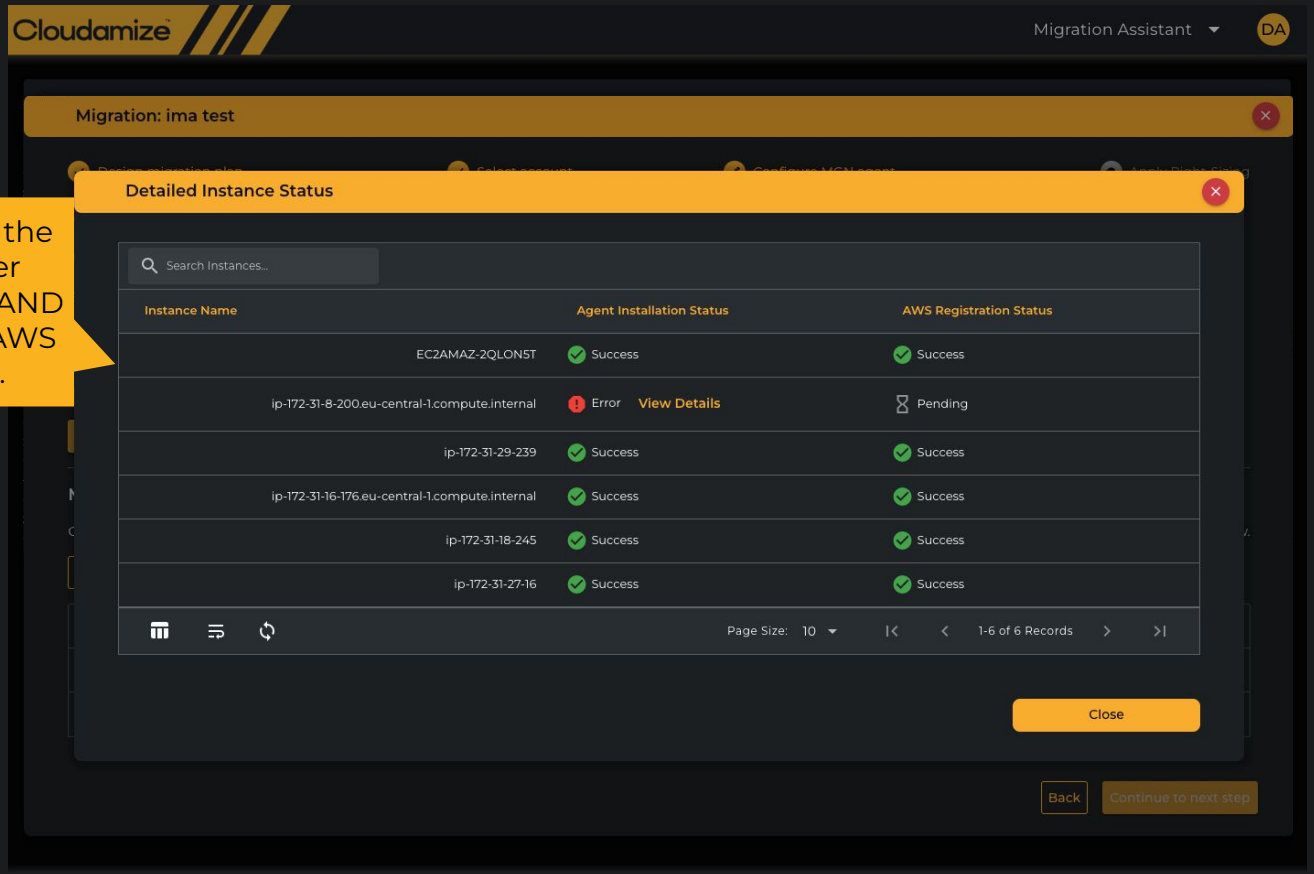
You can monitor the server-by-server replication here, AND from within the AWS MGN Console.



Step 4: Apply Right-Sizing

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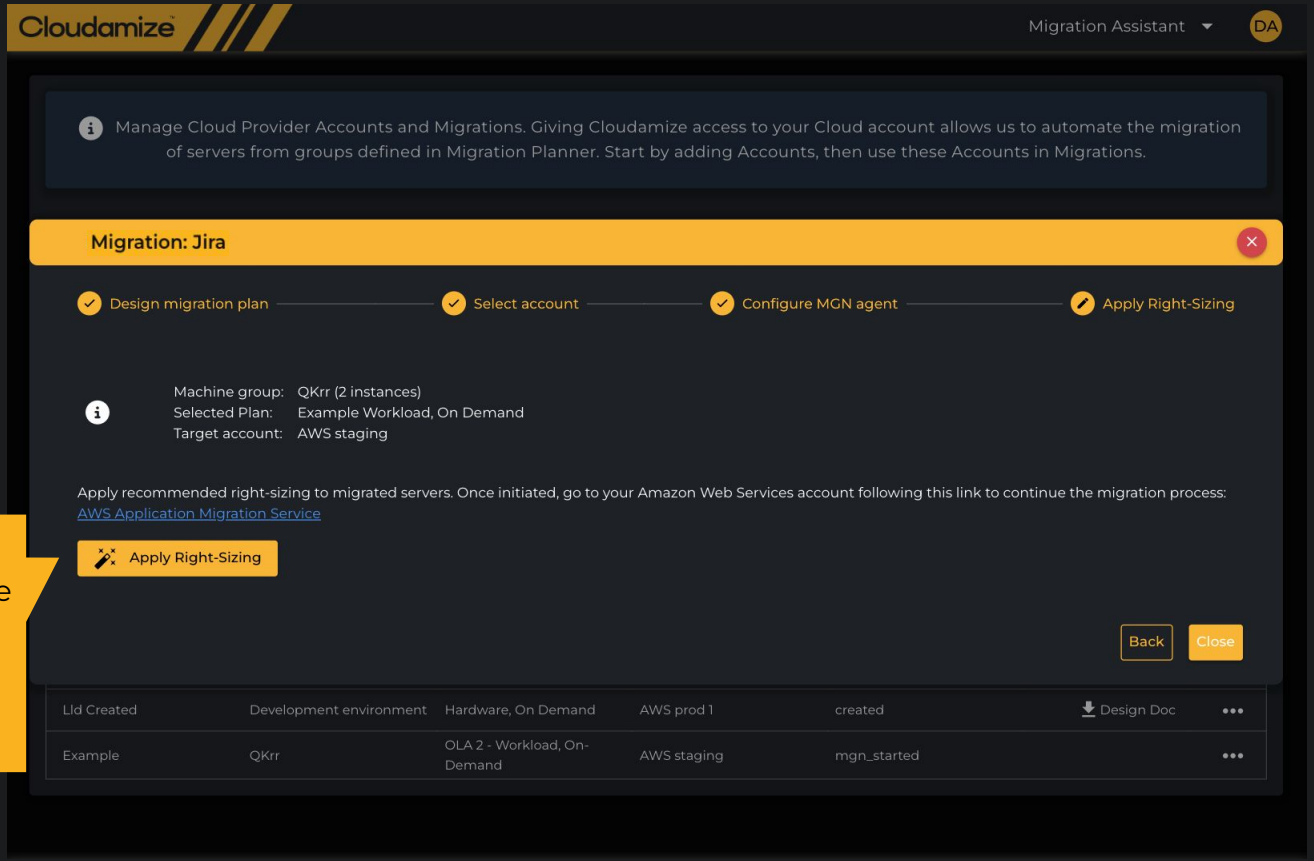

Complete the replication into the cloud by applying Cloudamize rightsizing based on your TCO plan

Cloudamize™

A3. MANAGE

Runbooks

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