
AWS
re:Invent
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ARC202-R

Putting cost optimization into practice

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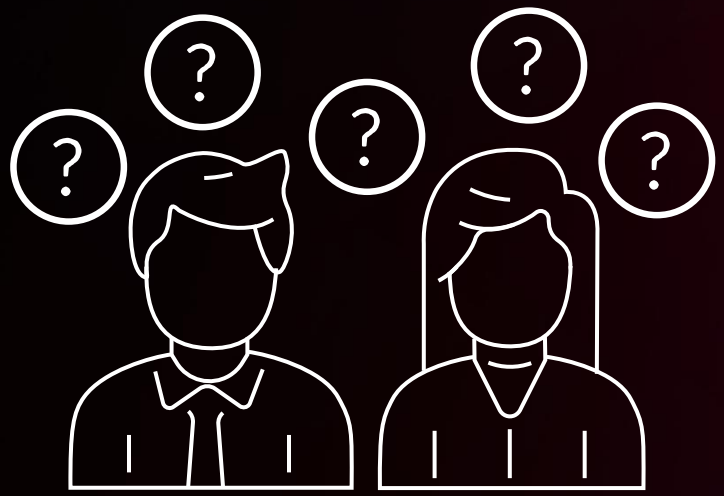
Why we are here?

WHAT ARE YOUR CHALLENGES

How to define patterns in usage?

How to setup dashboard of cost and usage?

How to analyze my cost report?



How to understand my usage?

How to gain insights into rightsizing recommendations?

How to measure the workload efficiency?

How to charge back to business units?

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Agenda

- Cost optimization design principles & best practices
- Lab 1: Cost and Usage Analysis
- Lab 2: Cost Visualization
- Lab 3: Workload Efficiency
- Lab 4: Rightsizing with AWS Compute Optimizer (optional)
- Resources

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AWS Well-Architected Framework

- Operational Excellence
- Security
- Reliability
- Cost Optimization
- Performance Efficiency
- Sustainability

Design principles

Best Practices

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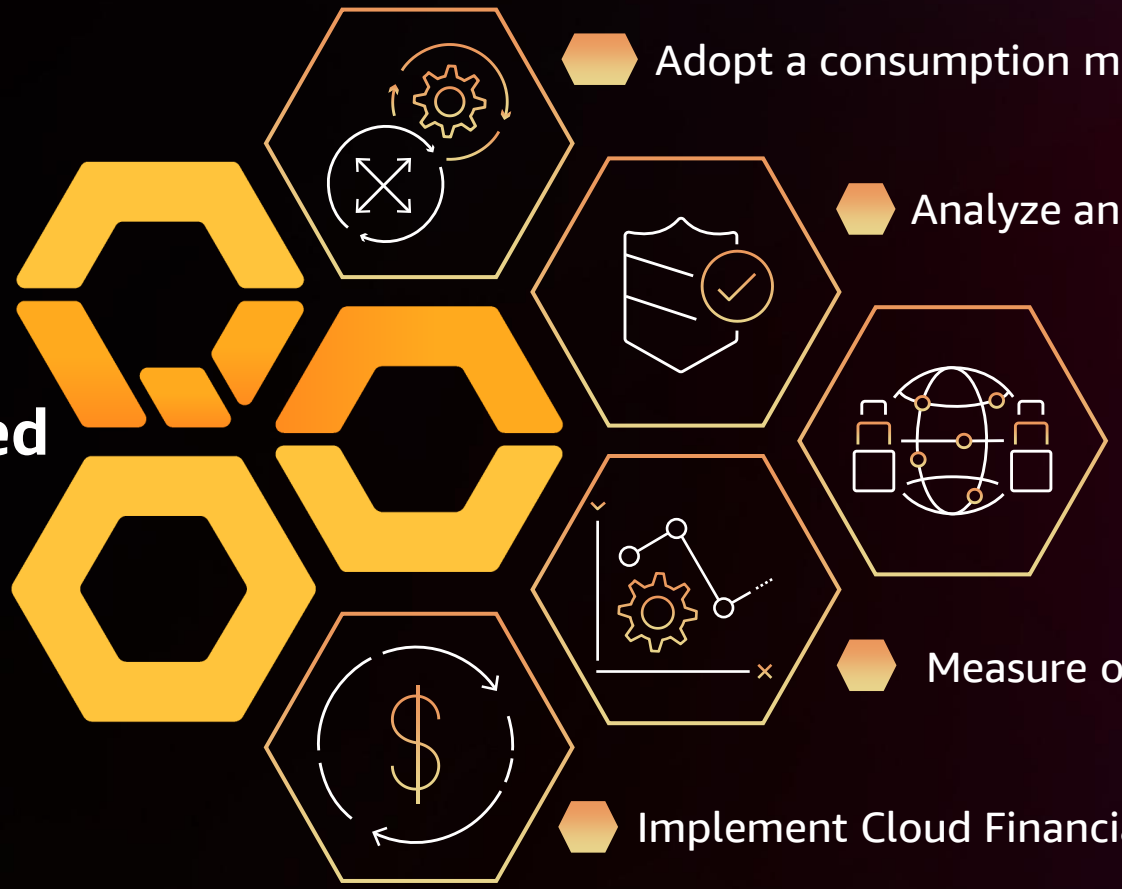
Cost Optimization Design Principles

AWS **Well-Architected**



- Adopt a consumption model
- Analyze and attribute expenditure
- Stop spending money on undifferentiated heavy lifting
- Measure overall efficiency
- Implement Cloud Financial Management

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Expenditure and Usage Awareness

- Monitor Cost and Usage
- Decommission Resources
- Governance

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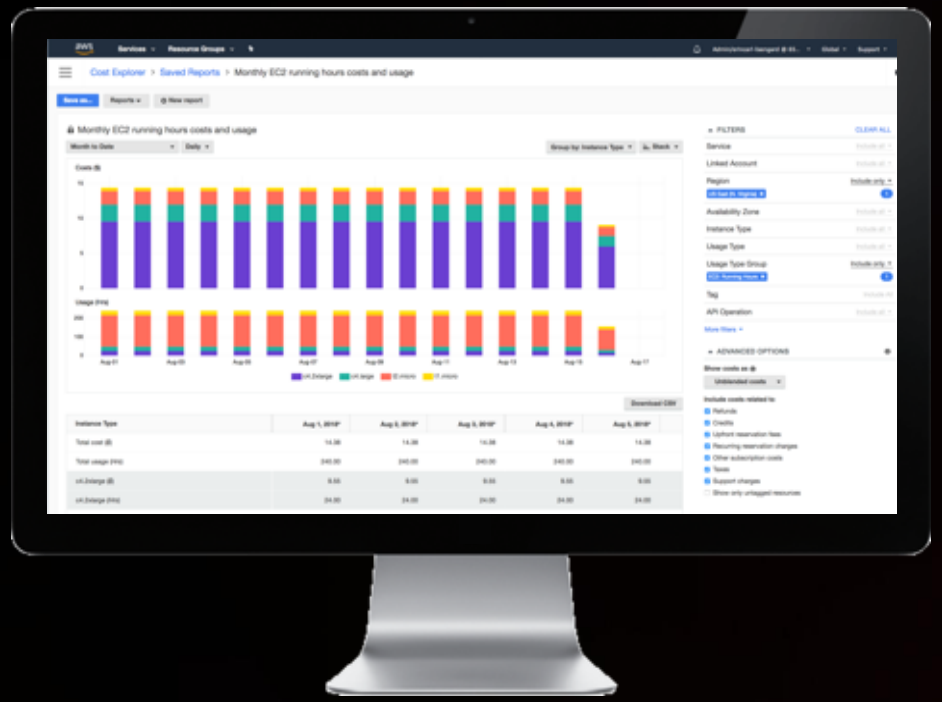
AWS Cost Explorer

View cost trends, group and filter data for a uniform view of cost and usage



- Comprehensive dashboards
- Automated trend analysis
- Friendly user experience and programmatic access
- Plan for future spending

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Cost Effective Resources

- Evaluate cost when selecting services
- Select the best pricing model
- Plan for data transfer
- Select the correct resource type, size, and number

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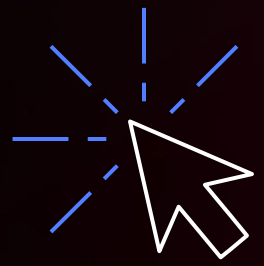
Rightsizing with AWS Compute Optimizer

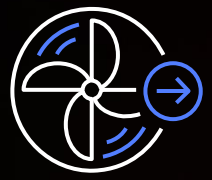
1 Make the right choice

Applies insights from millions of workloads to make recommendations



Saves time comparing and selecting optimal resources for your workload

2 Ensure you are **consistently** making the right choice



Continuously scan your resource usage and match your workload to optimal resources

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LAB 1

Cost and Usage Analysis

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Cost and Usage Analysis Lab

Goals:

- Perform basic analysis of your cost and usage.
- Hands on skills that will help you monitor your cost and usage.

Cost:

- S3: Storage for enabling your Monthly Report in the Detailed Billing Reports

Steps:

- Verify Cost and Usage Reports (CUR)
- Use AWS Glue to enable access to CUR via Amazon Athena
- Cost and Usage Analysis

Time to complete:

- The lab should take approximately 15 minutes to complete

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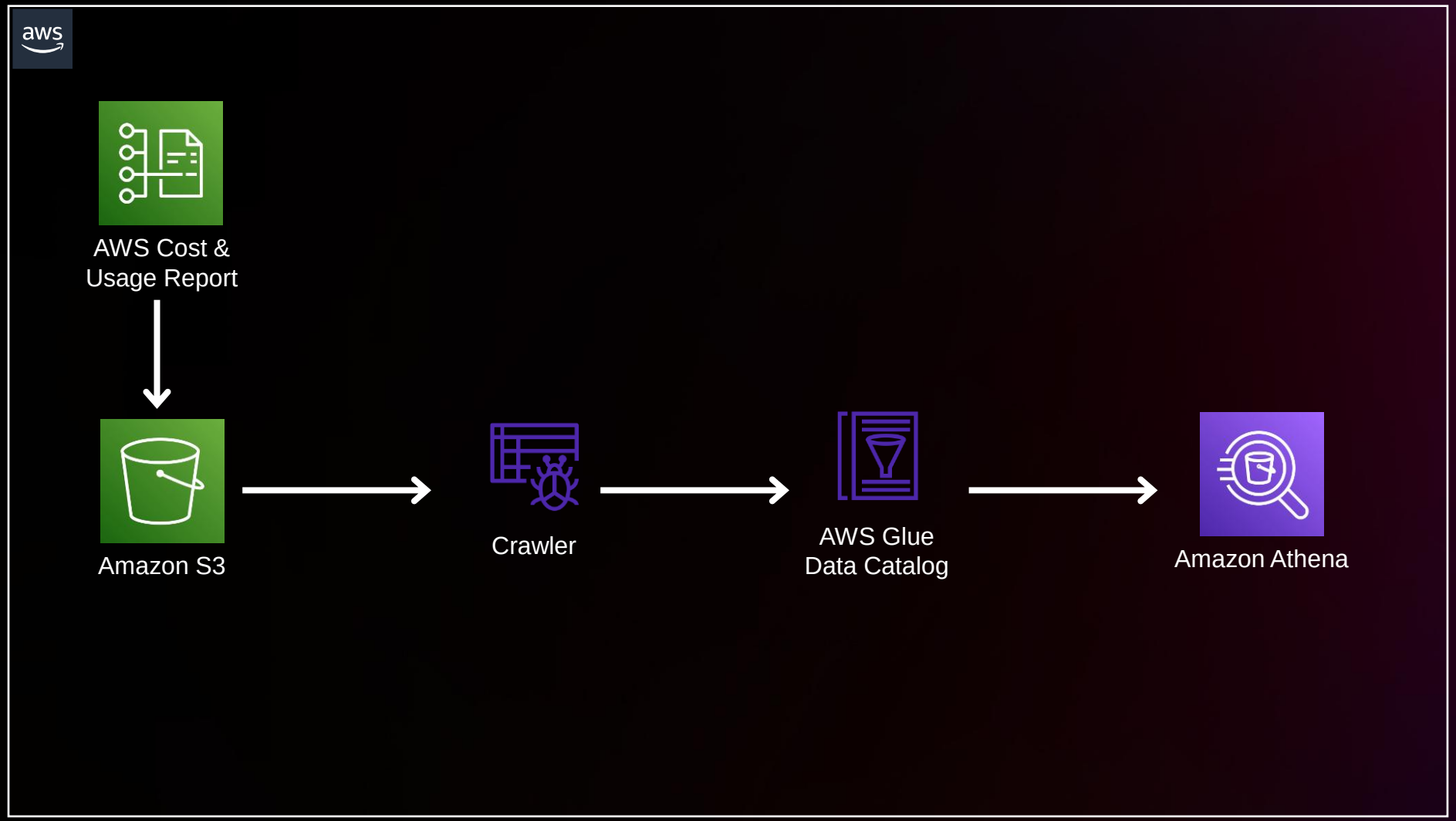
Lab Diagram



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Getting Started

URL: bit.ly/3ucqSkI or

Event Access code: b25a-0c44c2-17
Region: us-east-1

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LAB 2

Cost Visualization

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Cost Visualization Lab

Goals:

- Visualize your cost & usage
- Setup & configure Amazon QuickSight to view your Cost & Usage reports
- Create a dashboard of cost & usage

Cost:

- QuickSight pricing Approx $9-$12 monthly for QuickSight Authors
- Estimated additional costs should be <$5 a month for small accounts

Steps:

- Setup Amazon QuickSight
- Create a data set
- Create visualizations

Time to complete:

The lab should take approximately 40 minutes to complete

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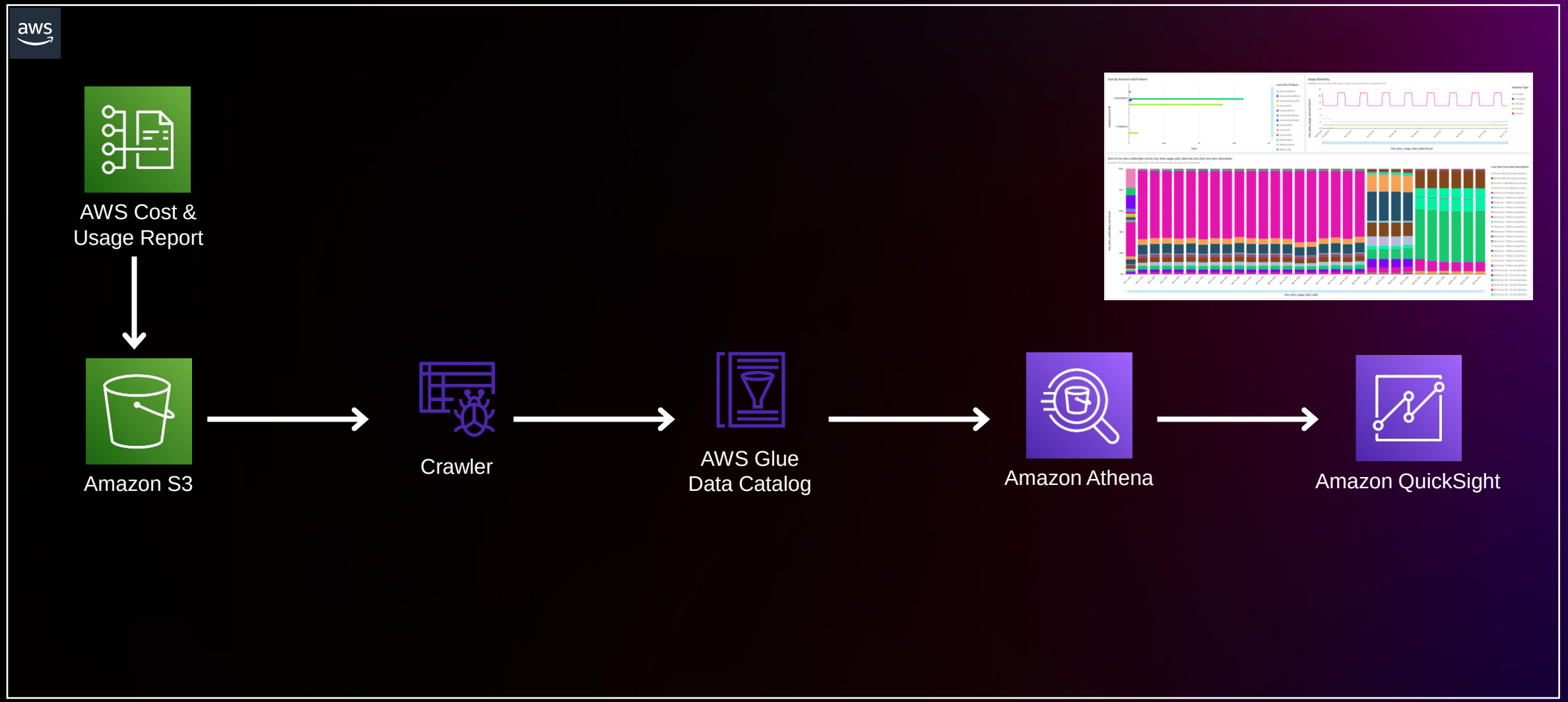
Lab Diagram



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LAB 3

Workload Efficiency

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Workload Efficiency Lab

Goals:

- Setup the application data source
- Combine the application and cost data sources
- Create the visualization for efficiency

Cost:

- <$5 depending on the size of your data sources, and existing QuickSight subscription

Time to complete:

- The lab should take approximately 40 minutes to complete

Steps:

- Create data sources
- Create a efficiency data source
- Create visualizations

Prerequisites:

- Complete the Cost and Usage Analysis lab
- Complete the Cost Visualization lab

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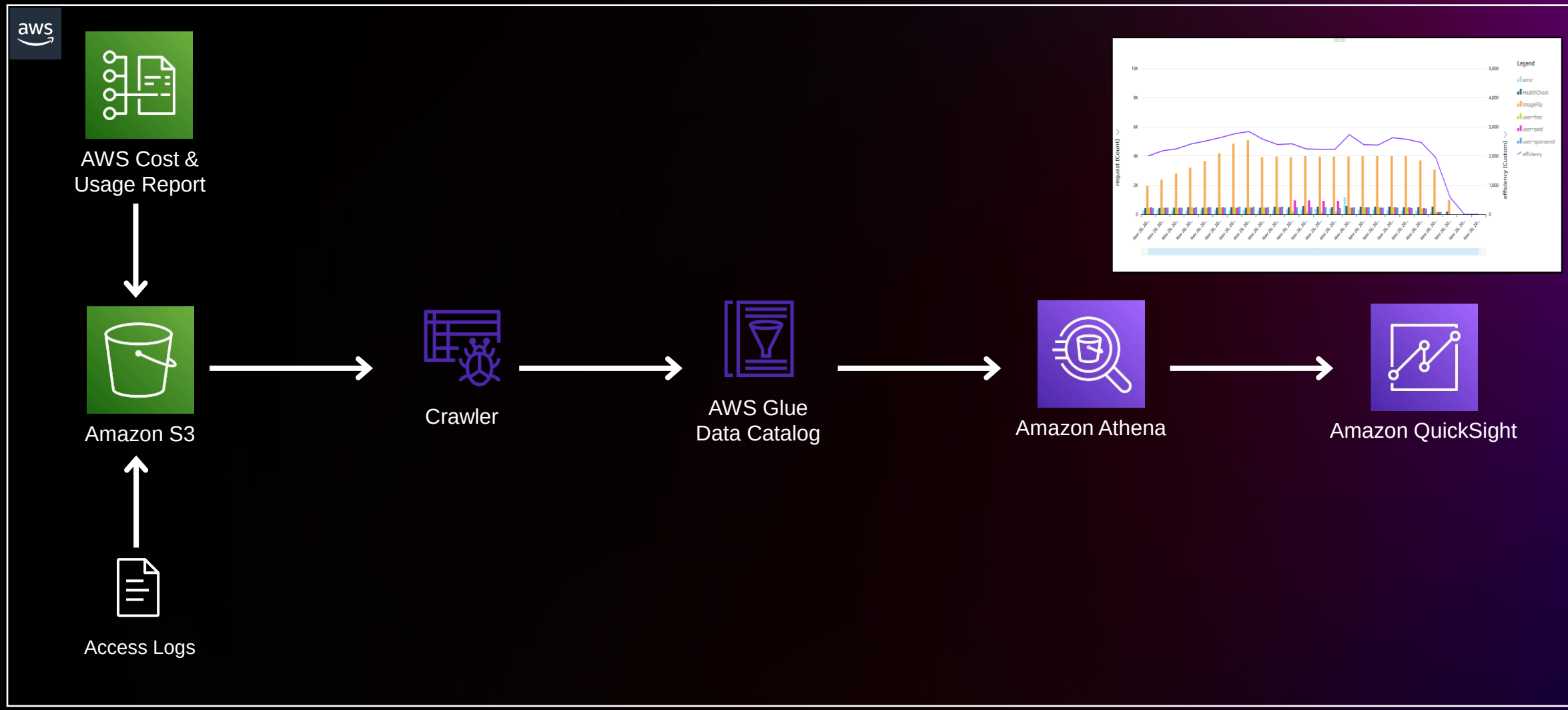
Lab Diagram



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LAB 4

Rightsizing with AWS Compute Optimizer

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Rightsizing Lab

Goals:

- Collect memory statistics through a custom metric using Amazon CloudWatch
- Use AWS Compute Optimizer to gain insights into rightsizing recommendations on AWS

Cost:

- Use of AWS Compute Optimizer is free
- <$5 depending on the size of your Amazon EC2
- Cost associated with CloudWatch

Steps:

- Getting to know Amazon CloudWatch
- Rightsizing with AWS Compute Optimizer and Memory Utilization Enabled

Time to complete:

The lab should take approximately 30 minutes to complete

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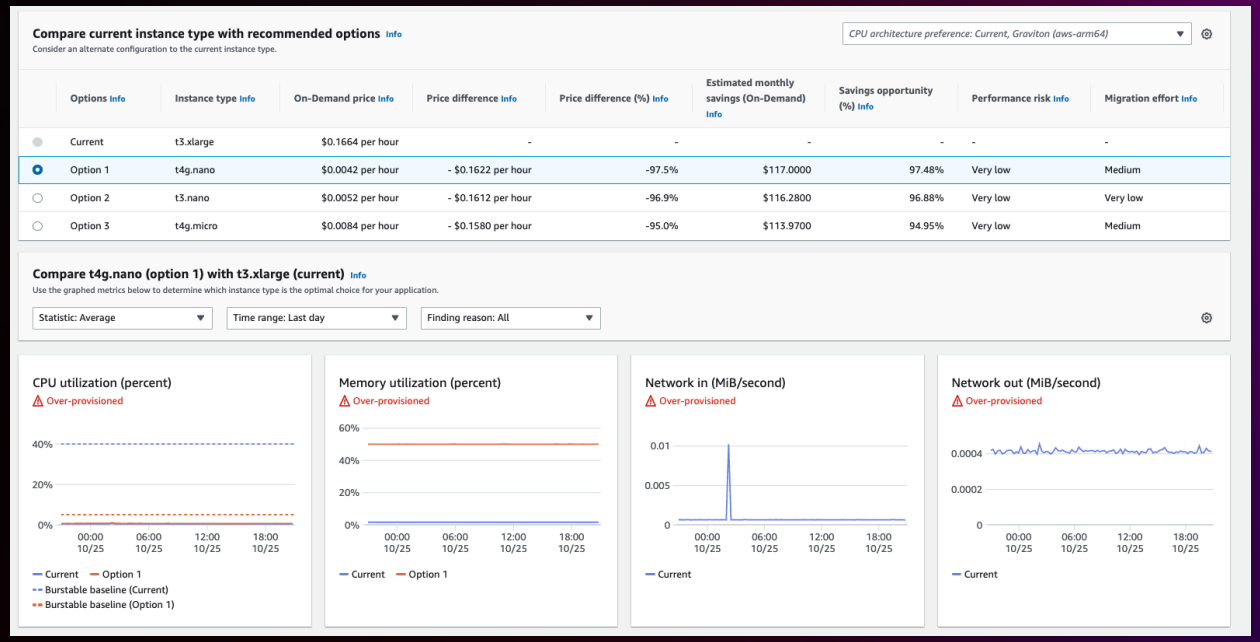
Lab Diagram

Amazon CloudWatch

Amazon EC2

AWS Compute Optimizer



Compare current instance type with recommended options Info

Consider an alternate configuration to the current instance type.

CPU architecture preference: Current, Graviton (aws-arm64)

	Options Info	Instance type Info	On-Demand price Info	Price difference Info	Price difference (%) Info	Estimated monthly savings (On-Demand) Info	Savings opportunity (%) Info	Performance risk Info	Migration effort Info
○	Current	t3.xlarge	$0.1664 per hour	-	-	-	-	-	-
◉	Option 1	t4g.nano	$0.0042 per hour	- $0.1622 per hour	-97.5%	$117.0000	97.48%	Very low	Medium
○	Option 2	t3.nano	$0.0052 per hour	- $0.1612 per hour	-96.9%	$116.2800	96.88%	Very low	Very low
○	Option 3	t4g.micro	$0.0084 per hour	- $0.1580 per hour	-95.0%	$113.9700	94.95%	Very low	Medium

Compare t4g.nano (option 1) with t3.xlarge (current) Info

Use the graphed metrics below to determine which instance type is the optimal choice for your application.

Statistic: Average | Time range: Last day | Finding reason: All

CPU utilization (percent) — Over-provisioned

40% 20% 0% — 00:00 10/25, 06:00 10/25, 12:00 10/25, 18:00 10/25

Current — Option 1 — Burstable baseline (Current) — Burstable baseline (Option 1)

Memory utilization (percent) — Over-provisioned

60% 40% 20% 0% — 00:00 10/25, 06:00 10/25, 12:00 10/25, 18:00 10/25

Current — Option 1

Network in (MiB/second) — Over-provisioned

0.01 0.005 0 — 00:00 10/25, 06:00 10/25, 12:00 10/25, 18:00 10/25

Current

Network out (MiB/second) — Over-provisioned

0.0004 0.0002 0 — 00:00 10/25, 06:00 10/25, 12:00 10/25, 18:00 10/25

Current

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Related Sessions

ARC209 Put your cloud cost on track	Wednesday, November 30 10:00 AM – 11:00 AM	Level 1, Terrace 151, MGM Grand
COP202-R1 Cloud metrics strategy and customizable billing	Thursday, December 1 11:00 AM – 12:00 PM	Convention Promenade, Palmer 2, Wynn
SUP304-R Continuous cost and sustainability optimization	Tuesday, November 29 11:45 AM – 1:45 PM	Level 1, Mouton 2, Wynn

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Thank you!

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