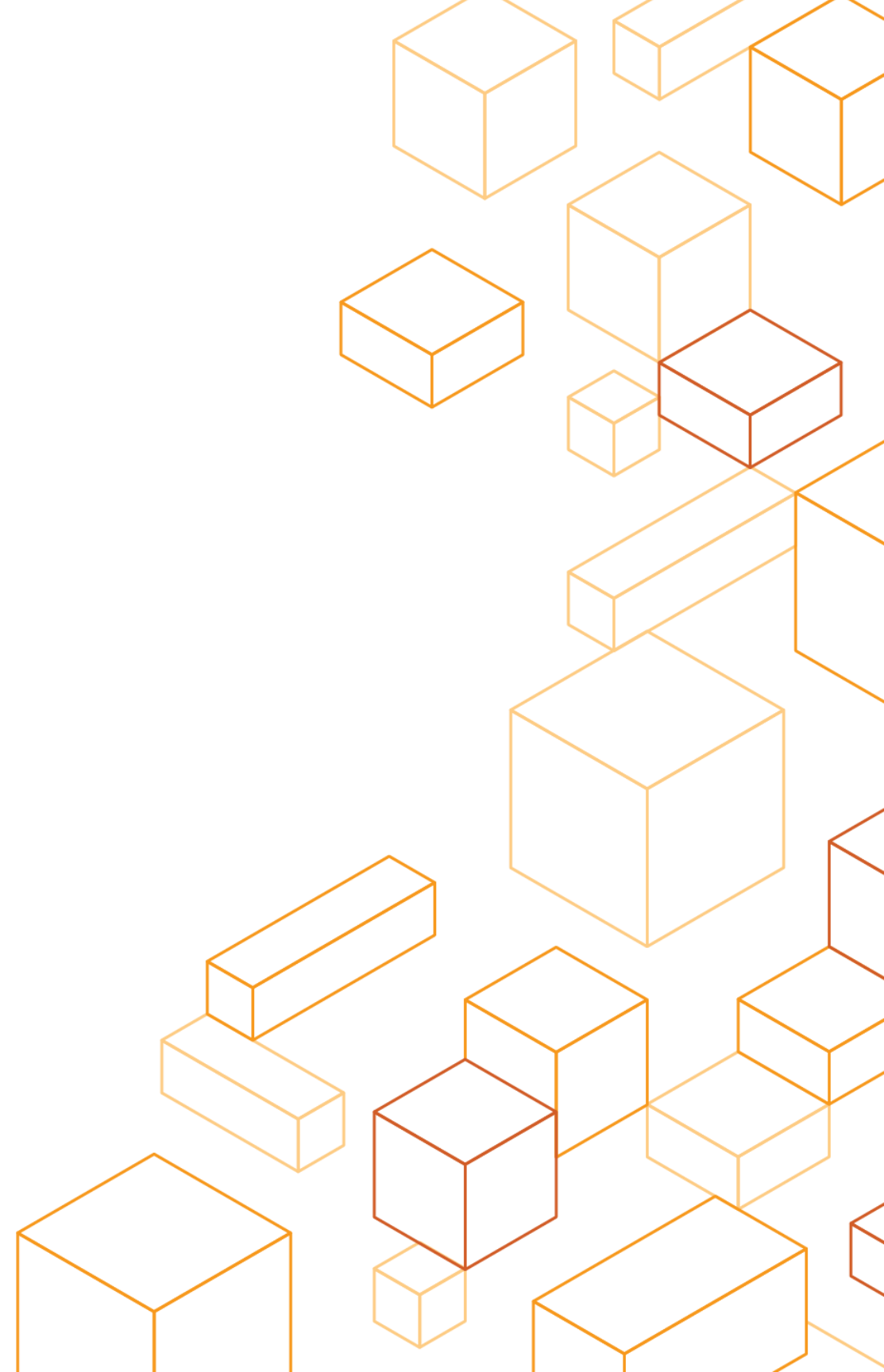




Six ways to reduce your AWS bill

AWS Cloud Economics



We hear you

- From startup customers like you around the globe.
- This is not business as usual.
- Usage patterns are changing.

What you spend on AWS should be optimized.

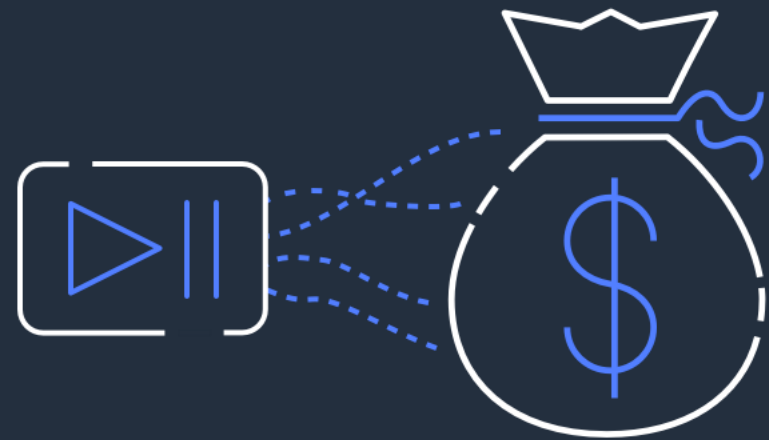


Today's focus

Six ways startups can optimize AWS costs



Before we start...



6 the six ways

1

Enable S3
Intelligent-
Tiering

2

Stop paying for
idle EC2 and RDS
instances

3

Choose Amazon
EC2 Spot for
containers

4

Use AWS Compute
Savings Plans

5

Use AWS
Reserved
Instances

6

Cleanup
underutilized
resources



Implementation time: *Minutes*

Enable S3 Intelligent-Tiering

Scenario

- You are using S3 standard storage class
- You might be paying for S3 storage you don't use

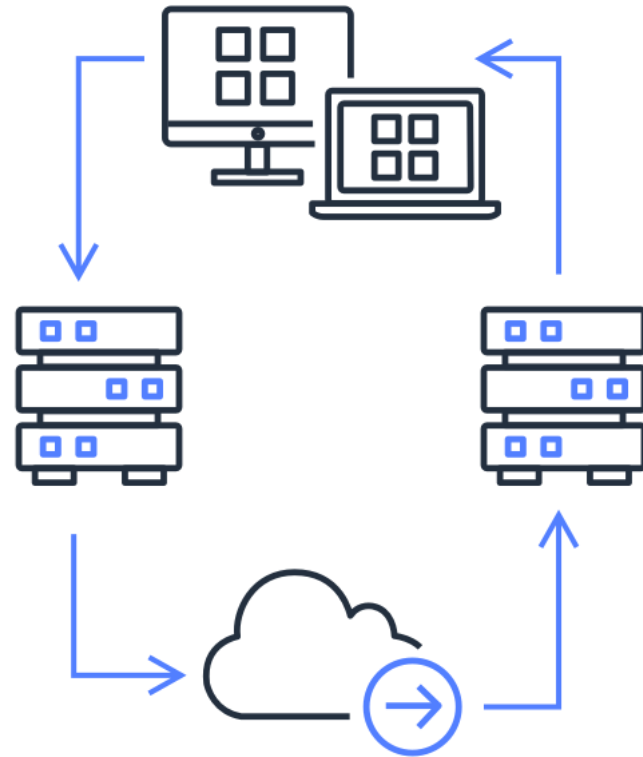


Solution: S3 Intelligent-Tiering

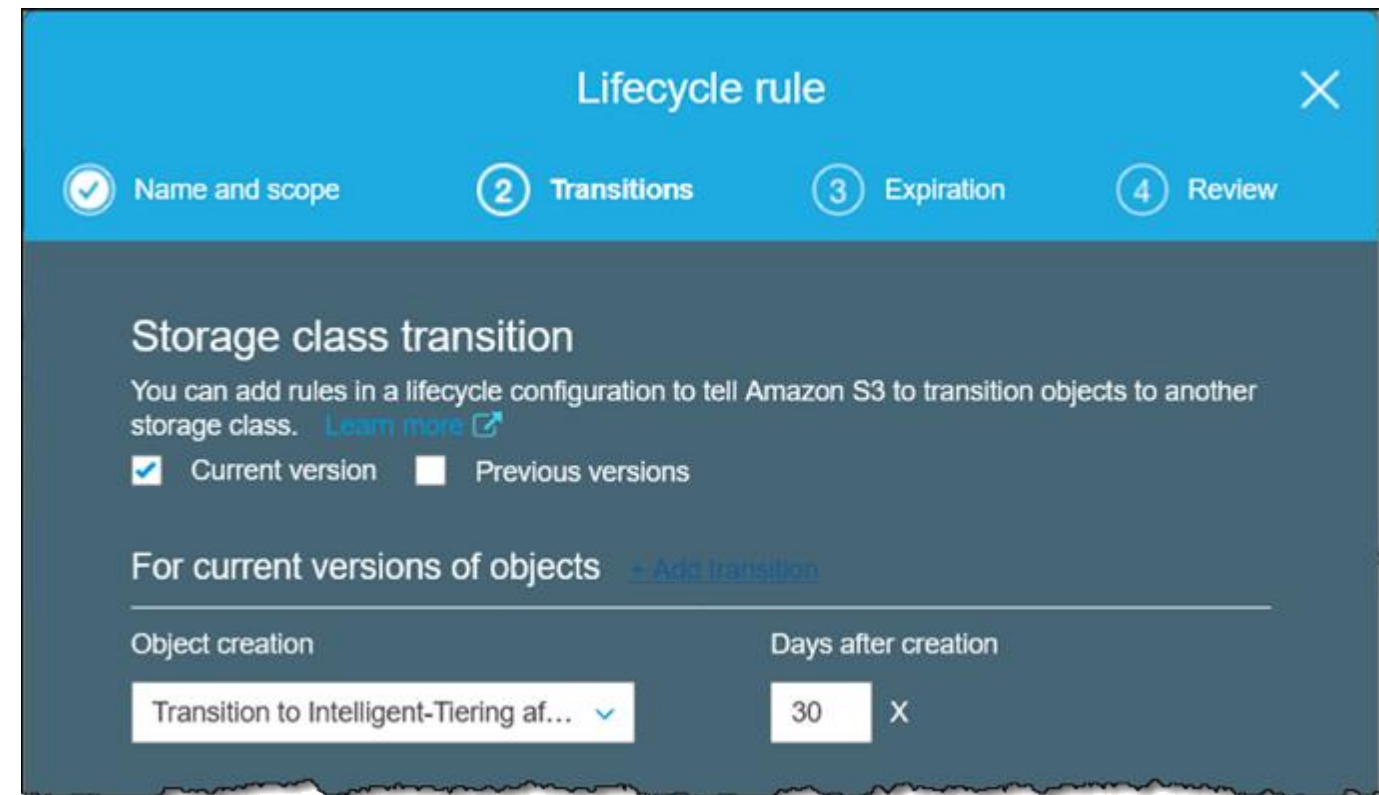
Enable S3 Intelligent-Tiering for infrequently accessed objects

Implementation time	Savings potential	Time to realize savings	Commitment required
Minutes	20% – 30% (for S3 Standard objects transitioned to S3 Intelligent-Tier)	30 days	None

Get started



Upload objects directly into S3
Intelligent-Tier (API)



Create Lifecycle Rules that make use of
Intelligent-Tiering (UI)

<https://aws.amazon.com/blogs/aws/new-automatic-cost-optimization-for-amazon-s3-via-intelligent-tiering/>



Implementation time: *Minutes to hours*

Stop paying for idle EC2 and RDS instances

Scenario

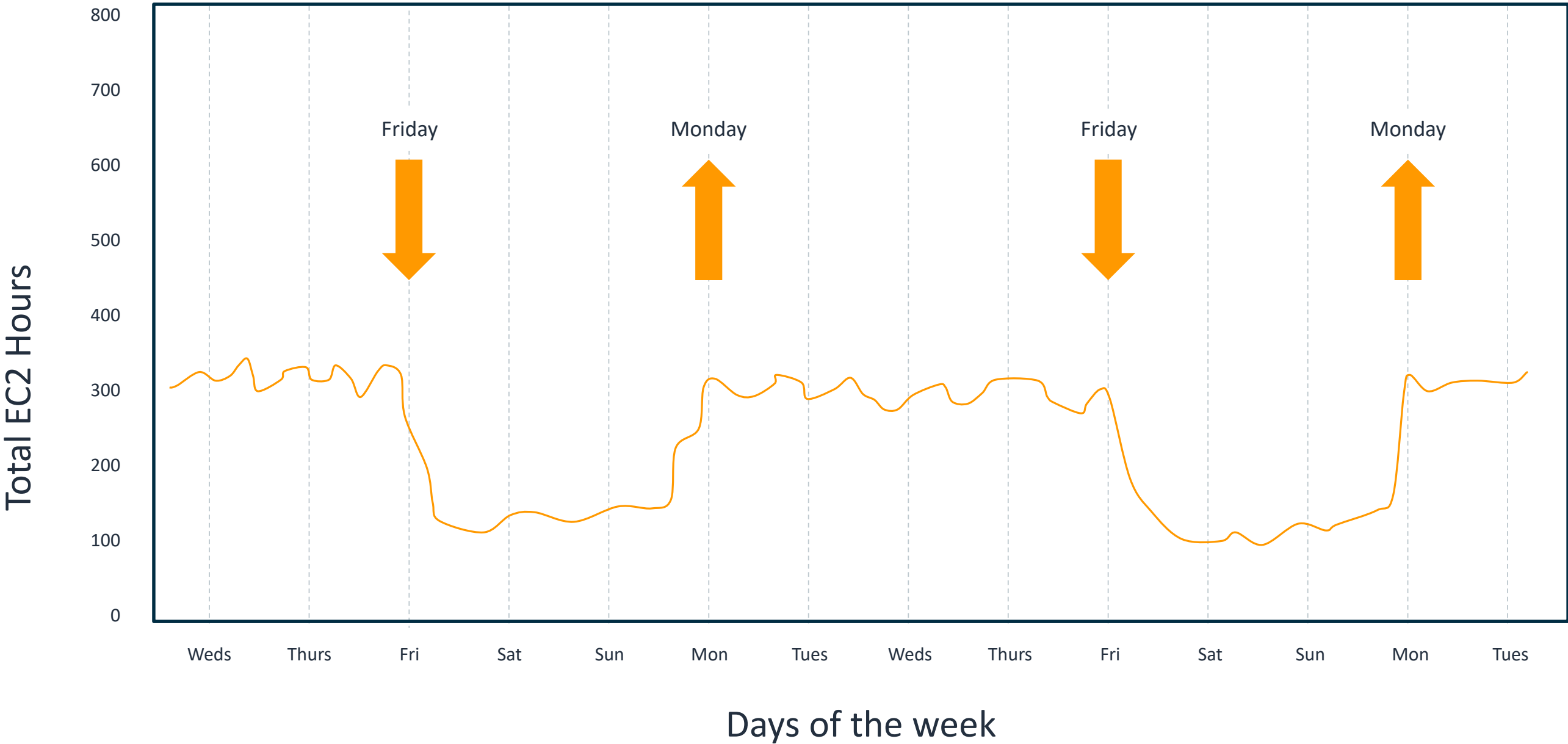
- You leave instances running during evenings, weekends, and holidays
- You might be paying for EC2 and RDS instances even when they are idle



Solution: AWS Instance Scheduler

Pay for what you need

EC2 Hours vs Time



Schedule EC2 and RDS instances in non-production environments

Implementation time	Savings potential	Time to realize savings	Commitment required
Minutes to hours	Reduce On-Demand costs by up to 35%*	Instantaneous	None

** Instance scheduling starts on Friday at 6pm and ends Monday at 6am*

Get started

- 1 Install the AWS Instance Scheduler
- 2 Create schedule based on business requirements
- 3 Tag non-production EC2 and RDS instances to be scheduled

<https://aws.amazon.com/solutions/instance-scheduler/>

AWS Instance Scheduler

Version 1.3.1

Last updated: 03/2020

Author: AWS

Estimated deployment time: 5 min

[Source code](#)

[CloudFormation template](#)

[View deployment guide](#)

[Launch solution in the AWS Console](#)

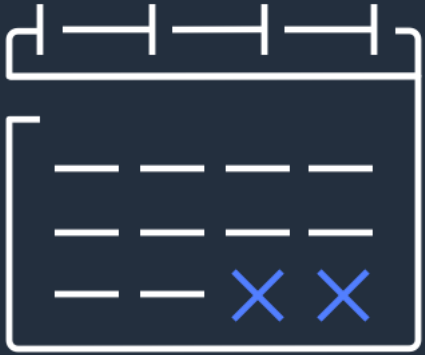
[Deploy with an AWS IQ expert](#)

Deployment resources

[Download deployment guide](#)

[AWS Solution resources »](#)

[Contact us »](#)



Implementation time: *Hours/days to weeks*

Choose Amazon EC2 Spot for containers

Scenario

- You are running containerized workloads on EC2, or using managed services such as ECS, EKS, and Fargate
- You are paying the default On-Demand pricing



Solution: Amazon EC2 Spot

Choose Spot for containerized workloads that are stateless, fault-tolerant, and loosely-coupled

Implementation time	Savings potential	Time to realize savings	Commitment required
Hours/days to weeks	Up to 90% cheaper than On-Demand	Hours/days to weeks	None

Getting started

Self-service container references

- 1 ECS on Spot
<https://aws.amazon.com/ec2/spot/containers-for-less/get-started/>
- 2 EKS on Spot
<https://aws.amazon.com/blogs/compute/run-your-kubernetes-workloads-on-amazon-ec2-spot-instances-with-amazon-eks/>
- 3 Fargate on Spot
<https://docs.aws.amazon.com/AmazonECS/latest/developerguide/fargate-capacity-providers.html>
- 4 AWS Spot workshops for other workloads
<https://ec2spotworkshops.com/>



Implementation time: *Hours*

Use AWS Compute Savings Plans

Scenario

- You have EC2 or Fargate workloads that are always on
- You are leveraging Lambda in your architecture
- You are paying the default On-Demand pricing



Solution: AWS Compute Savings Plans

AWS Compute Savings Plans

Provides the most flexibility across...

- **Instance family:** e.g. Move from C5 to M5
- **Region:** e.g. change from EU (Ireland) to EU (London)
- **OS:** e.g. Windows to Linux
- **Tenancy:** e.g. switch Dedicated tenancy to Default tenancy
- **Compute options:** e.g. move from EC2 to Fargate or Lambda



Choose 1 year, No Upfront Compute Savings Plans

Implementation time	Savings potential	Time to realize savings	Commitment required
Hours	Up to 54% (EC2), 20% (Fargate), 12% (Lambda) cheaper than On-Demand	Hours	1 year, No Upfront costs

Get started

AWS Cost Explorer will provide you with Savings Plans recommendations

1

Review your Savings Plans recommendations in the AWS Cost Explorer

2

Customize recommendations based on your needs (Term Length: 1 Year, Payment Option: No Upfront)

3

Add preferred Savings Plans amount to cart and purchase

Savings Plans > Purchase Recommendations

Recommendation options

Savings Plans type: ☒ Compute ☐ EC2 Instance

Savings Plans term: ☒ 1-year ☐ 3-year

Payment option: ☒ All upfront ☐ Partial upfront ☐ No upfront

Based on the past: ☐ 7 days ☒ 30 days ☐ 60 days

Recommendation: Purchase a Compute Savings Plan at a commitment of \$0.30/hour

You could save an estimated \$48 monthly by purchasing the recommended Compute Savings Plan.

Based on your past 30 days of usage, we recommend purchasing a Savings Plan with a commitment of \$0.30/hour for a 1-year term. With this commitment, we project that you could save an average of \$0.07/hour - representing a 14% savings compared to On-Demand. To account for variable usage patterns, this recommendation maximizes your savings by leaving an average \$0.09/hour of On-Demand spend.

Before recommended purchase	After recommended purchase (based on your past 30 days of usage)	
Monthly On-Demand spend ⓘ \$329 (\$0.45/hour) <small>Your estimated On-Demand spend based on your usage over the past 30 days (including all active Savings Plans)</small>	Estimated monthly spend ⓘ \$281 (\$0.39/hour) <small>Your recommended \$0.30/hour Savings Plans commitment + an average \$0.09/hour of On-Demand spend</small>	Estimated monthly savings ⓘ \$48 (\$0.07/hour) <small>14% monthly savings over On-Demand \$329 - \$281 = \$48</small>

This recommendation examines your usage over the past 30 days (including your existing Savings Plans and EC2 Reserved Instances) and calculates what your costs would have been had you purchased the recommended Savings Plans. See applicable rates for Savings Plans [here](#). To generate this recommendation, AWS simulates your bill for different commitment amounts and recommends the commitment amount that provides the greatest estimated savings. [Learn more](#)

Recommended Compute Savings Plans

[Download CSV](#) [Add selected Savings Plan\(s\) to cart](#)

Term	Payment option	Recommended commitment	Estimated hourly savings ⓘ
<input checked="" type="checkbox"/> 1-year	All upfront	\$0.30/hour	\$0.07 (14%)

Reported and minimum hourly spend based on your current on-demand spend for the given instance family.

<https://docs.aws.amazon.com/savingsplans/latest/userguide/get-started.html>



Implementation time: *Hours*

Use AWS Reserved Instances

Scenario

- You have RDS, Redshift, ElastiCache and Elasticsearch workloads that are always on
- You are paying the default On-Demand pricing



Solution: AWS Reserved Instances

Choose 1 year, No Upfront Reserved Instances

Implementation time	Savings potential	Time to realize savings	Commitment required
Hours	Up to 42% (RDS), 32% (ElastiCache), 31% (Elasticsearch), 30% (Redshift) cheaper than On-Demand	Hours	1 year, No Upfront costs

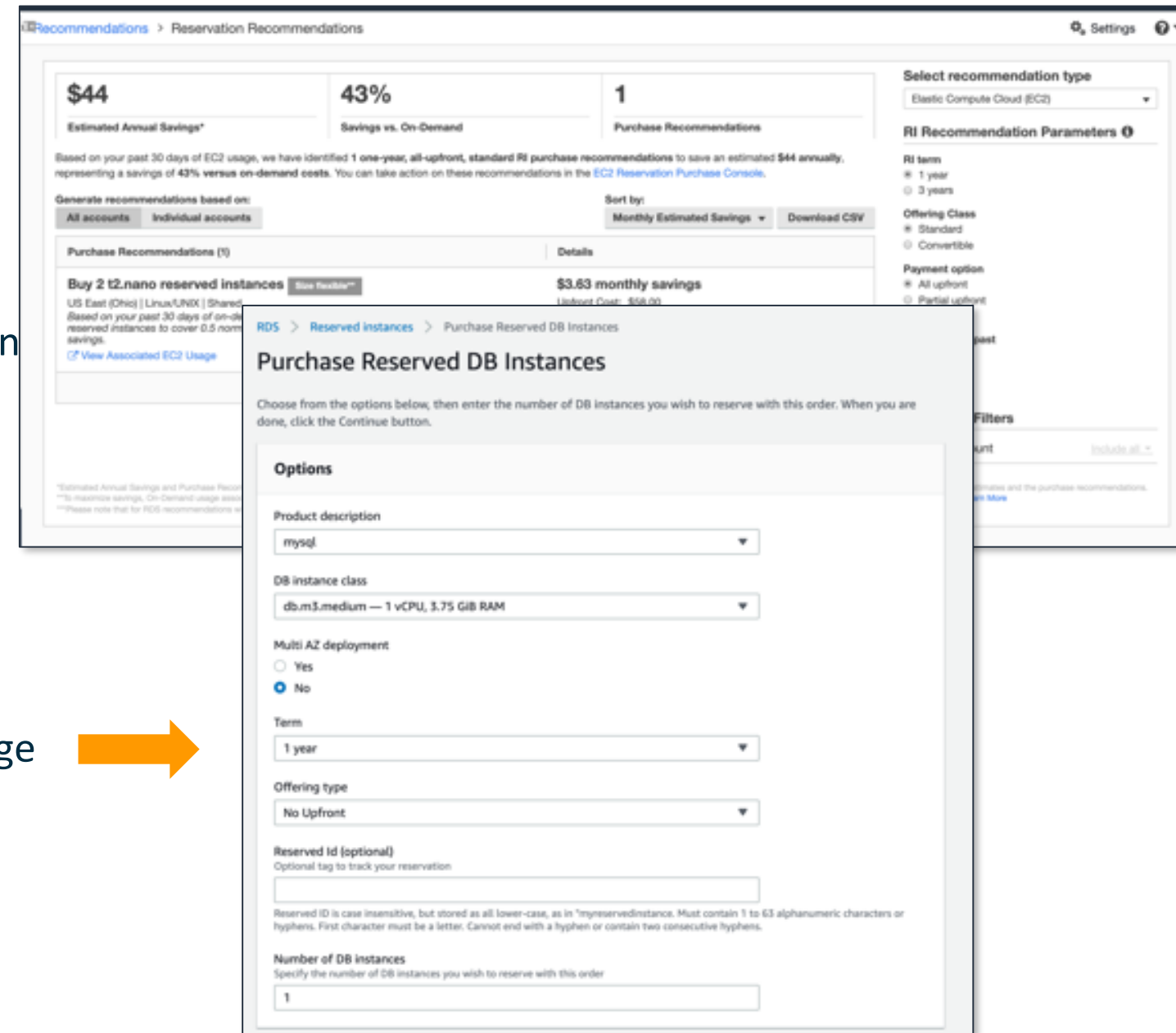
Get started

AWS Cost Explorer will provide you with Reserved Instance recommendations

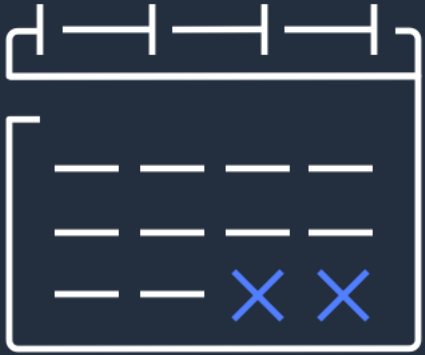
1 Review your Reserved Instance recommendations in the AWS Cost Explorer

2 Customize recommendations based on your needs (Term Length: 1 Year, Payment Option: No Upfront)

3 Purchase Reserved Instances from the specific service page in the AWS console



<https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/ri-recommendations.html>



Implementation time: *Hours/days*

Cleanup underutilized resources

Scenario

- You created RDS, Redshift, Route 53, ELBs, EIPs, and EBS resources that are now underutilized
- You are paying for the resources as if they are still being fully used



Solution: AWS Trusted Advisor

AWS Trusted Advisor

For Business Support Plan subscribers



Cost Optimization

\$1,092.56
Potential monthly savings



Performance



Security



Fault Tolerance



Service Limits

Cleanup underutilized resources identified by AWS Trusted Advisor

Implementation time	Savings potential	Time to realize savings	Commitment required
Hours to days	\$100s to \$1000s	Hours to days	None

Getting started

1

Refresh all of your Cost Optimization checks






2

Review recommended actions and potential savings provided by the checks

3

Prioritize resource cleanup based on greatest savings

Cost Optimization Checks

▶ 	Underutilized Amazon Redshift Clusters Checks your Amazon Redshift configuration for clusters that appear to be underutilized. 1 of 1 Amazon Redshift clusters appear to be idle. Monthly savings of up to \$612.00 are available by shutting down the clusters if they are billed at tr
▶ 	Amazon Route 53 Latency Resource Record Sets Checks for Amazon Route 53 latency record sets that are configured inefficiently. 0 of 0 domain names have only one latency resource record set.
▶ 	Idle Load Balancers Checks your Elastic Load Balancing configuration for load balancers that are not actively used. 0 of 0 load balancers appear to be idle. Monthly savings of up to \$0 are available by minimizing unused load balancers.
▶ 	Unassociated Elastic IP Addresses Checks for Elastic IP addresses (EIPs) that are not associated with a running Amazon Elastic Compute Cloud (Amazon EC2) instance. 0 of 0 Elastic IP addresses are not associated with a running instance.
▶ 	Underutilized Amazon EBS Volumes Checks Amazon Elastic Block Store (Amazon EBS) volume configurations and warns when volumes appear to be underused. 0 of 3 EBS volumes appear to be underutilized. Monthly savings of up to \$0 are available by minimizing underused EBS volumes.

<https://aws.amazon.com/premiumsupport/technology/trusted-advisor/>

<https://aws.amazon.com/premiumsupport/pricing/>

Final thoughts



Implementation time: *Minutes to hours*

Understand your AWS Credits

Get started

Nearly all startups are eligible for credits via AWS Activate

- 1

Use the Billing Console to confirm issued credits, check your availability of credits, amount of credits used, & expiration dates of credits issued
- 2

Contact your Accelerator, Incubator or Investor partners for credit access
- 3

Learn more at <https://aws.amazon.com/activate/>

Savings Plans

Cost & Usage Reports

Cost Categories (beta)

Cost allocation tags

Billing

Credits

Preferences


Billing preferences

Payment methods

Consolidated billing

Tax settings

Security Check ⓘ



Refresh Image

Please type the characters as shown above

By clicking "Redeem" you indicate that you have read and agree to the terms of the AWS Promotional Credit Terms & Conditions located [here](#).

Redeem

The table below displays all AWS credits redeemed by your account. Credits are automatically applied to charges associated with qualifying AWS service usage. Please note that the values for used and remaining credit amounts are updated each month when your invoice is finalized.

Expiration Date	Credit Name	Amount Used	Amount Remaining	Applicable Products
01/31/2021	AWS Activate - Business Support	\$1,141.29	\$8,858.71	AWS Support (Business)
02/28/2021	AWS Activate - MuckerLab 2018 100k	\$15,756.22	\$79,243.78	See complete list

AWS Activate

Overview

Getting Started

Providers

FAQs

Terms and Conditions

AWS Activate

AWS Activate is a free program specifically designed for startups and early stage entrepreneurs that offers the resources needed to get started on AWS

Apply now

Build or scale with up to \$100,000 in AWS Activate Credits*

AWS Activate provides startups with low cost, easy-to-use infrastructure needed to scale and grow their businesses. With AWS Activate, startups get access to the resources they need to quickly get started on AWS - including credits, technical support, and training.

*Credits are subject to the AWS Activate Provider you are associated with. Confirm with your AWS Activate Provider or AWS representative on the amount of AWS Activate Credits you are eligible to receive.

"We would not have been able to create and deploy our app to thousands of commuters across South Africa without AWS Activate."

- Skhona Khumalo
Director of Operations, Khwela

Program Benefits

AWS Activate benefits are designed to give you the right mix of tools and access to expertise so that you can be successful with AWS while optimizing performance, managing risk, and keeping costs under control.

AWS Activate Credits
Receive AWS Activate Credits automatically applied to your AWS account that covers your AWS service usage.

AWS Technical Support
Receive AWS Business and AWS Developer Support from AWS experts, including architectural guidance and best practices as you build and test.

AWS Training and Resources
Learn from AWS experts to enhance your skills and knowledge. Receive training and materials to help you be more effective and do more in the cloud.

Choose the package right for you

AWS Activate has two packages designed for startups with or without funding. Learn about the two packages below, and which option is best for your startup.

<https://aws.amazon.com/activate/>

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Implementation time: *Minutes to hours*

Understand your AWS costs

Get started

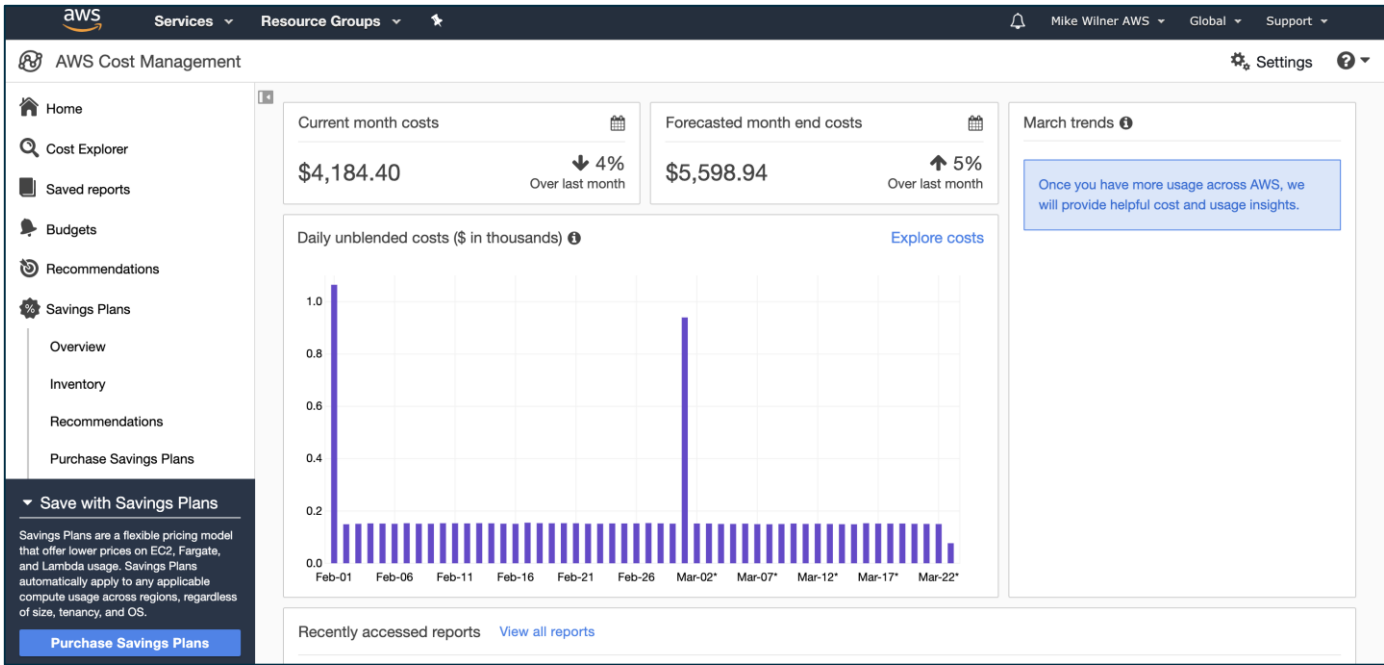
Your Billing Console and AWS Cost Explorer will provide granular cost insights

- 1

Use Cost Explorer to dive deep on daily billing and group/filter by account, region and service
- 2

Get familiar with reading your AWS bills to identify areas of cost to focus on
- 3

Set up budgets and budget alarms to stay aware



Bills	
Date: March 2020	Download CSV Print
Estimated Total	\$18.04
Your invoiced total will be displayed once an invoice is issued.	
Details	+ Expand All
AWS Service Charges	\$18.04
Data Transfer	\$0.00
Elastic Compute Cloud	\$14.88
US East (N. Virginia)	\$6.85
US East (Ohio)	\$8.03
Key Management Service	\$0.73
US East (N. Virginia)	\$0.73
Route 53	\$2.17
Global	\$2.17
Simple Storage Service	\$0.26

Usage and recurring charges for this statement period will be charged on your next billing date. Estimated charges shown on this page, or shown on any notifications that we send to you, may differ from your actual charges for this statement period. This is because estimated charges presented on this page do not include usage charges accrued during this statement period after the date you view this page. Similarly, information about estimated charges sent to you in a notification do not include usage charges accrued during this statement period after the date we send you the notification. One-time fees and subscription charges are assessed separately from usage and recurring charges, on the date that they occur.



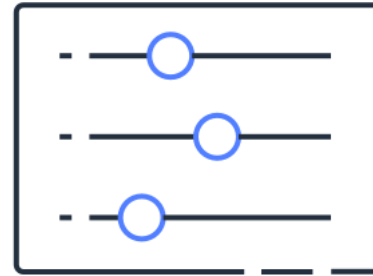


To understand
your costs

use



AWS
Cost Explorer

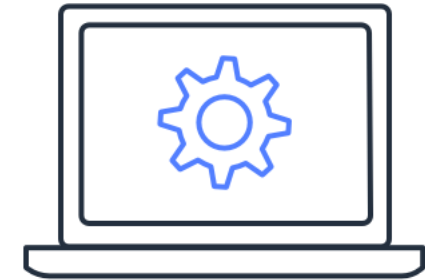


To control
your costs

use



AWS Budgets



To optimize
your costs

use

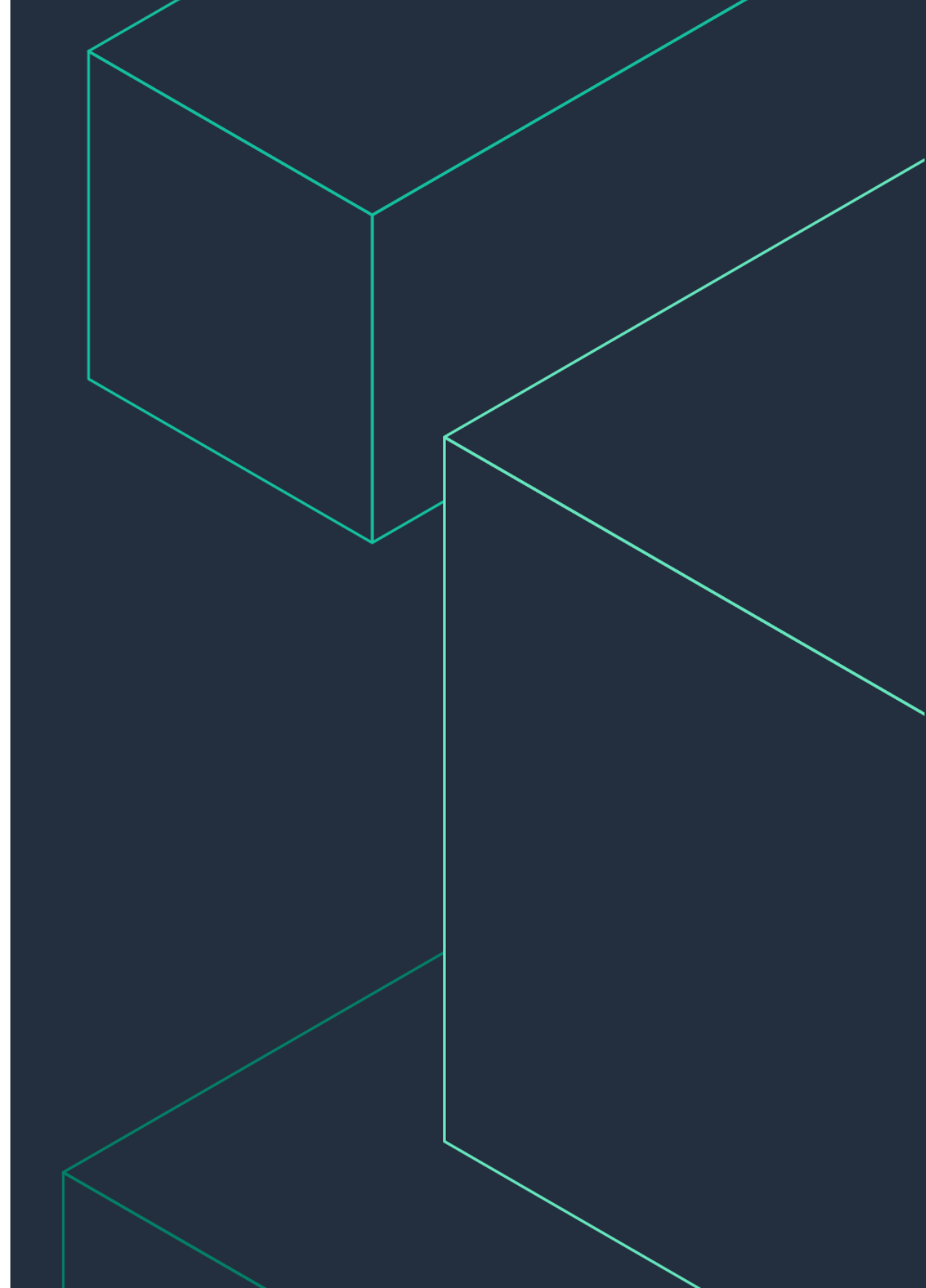


AWS
Recommendations

Every startup is different

You may not have seen your particular scenario in this presentation. If you didn't, there are other AWS resources available.

We're here to help.



Thank You