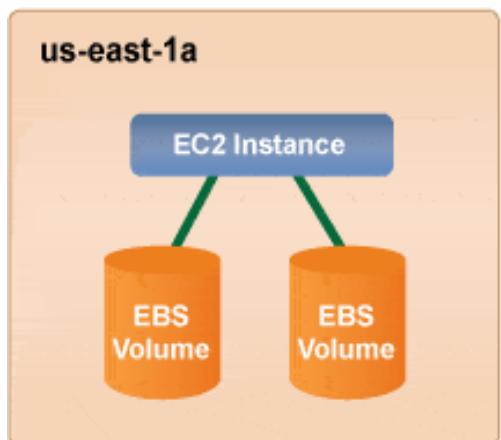


# EBS

## Amazon EBS volumes

[PDF](#) | [Kindle](#) | [RSS](#)

An Amazon EBS volume is a durable, block-level storage device that you can attach to your instances. After you attach a volume to an instance, you can use it as you would use a physical hard drive. EBS volumes are flexible. For current-generation volumes attached to current-generation instance types, you can dynamically increase size, modify the provisioned IOPS capacity, and change volume type on live production volumes.

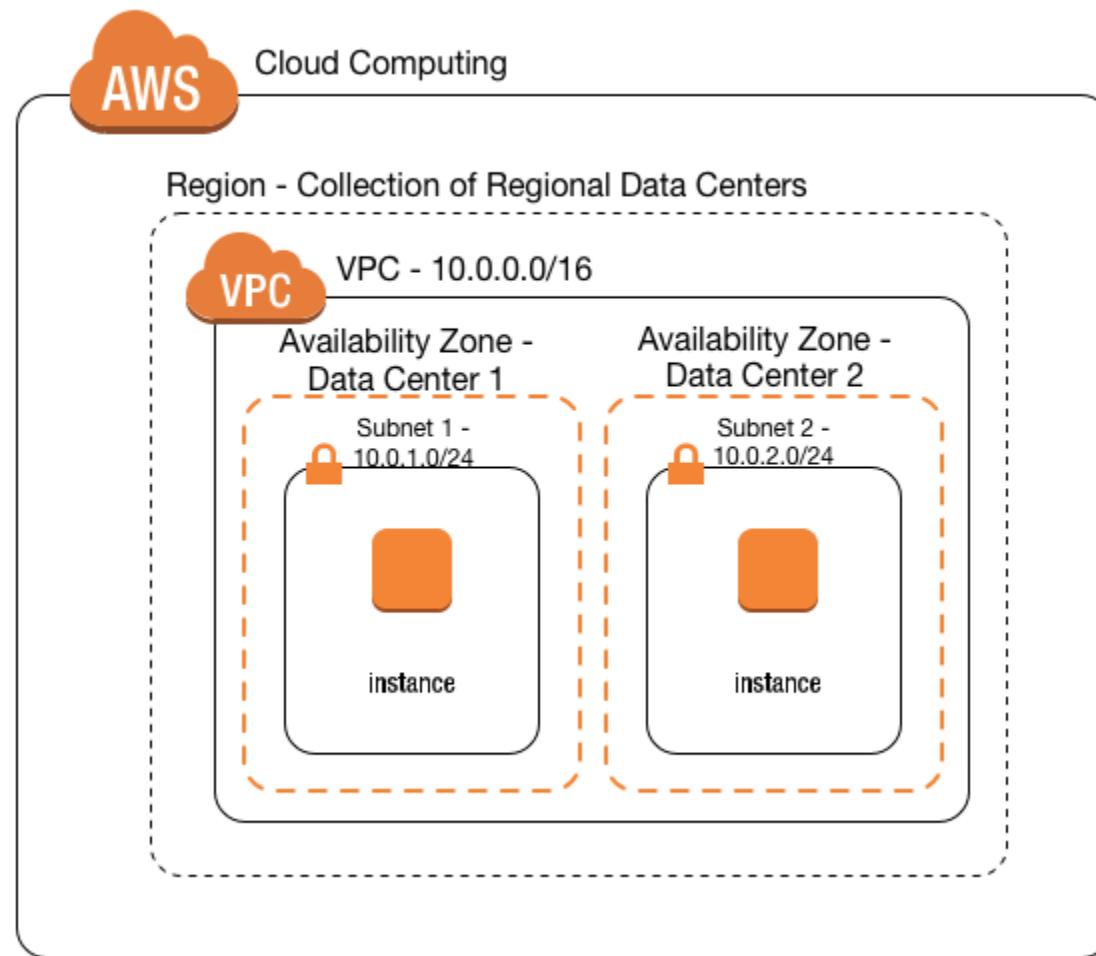


Attach multiple volumes to the same EC2 instance.

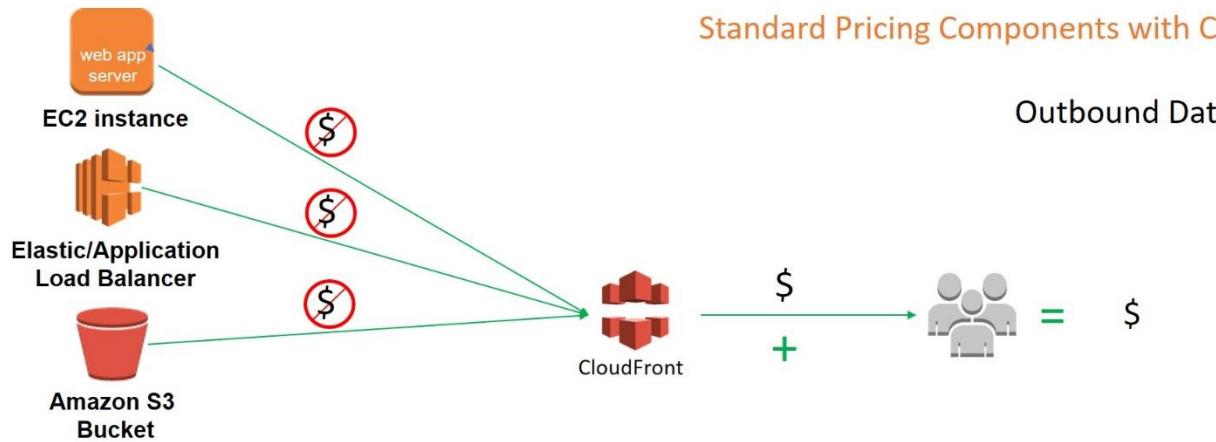
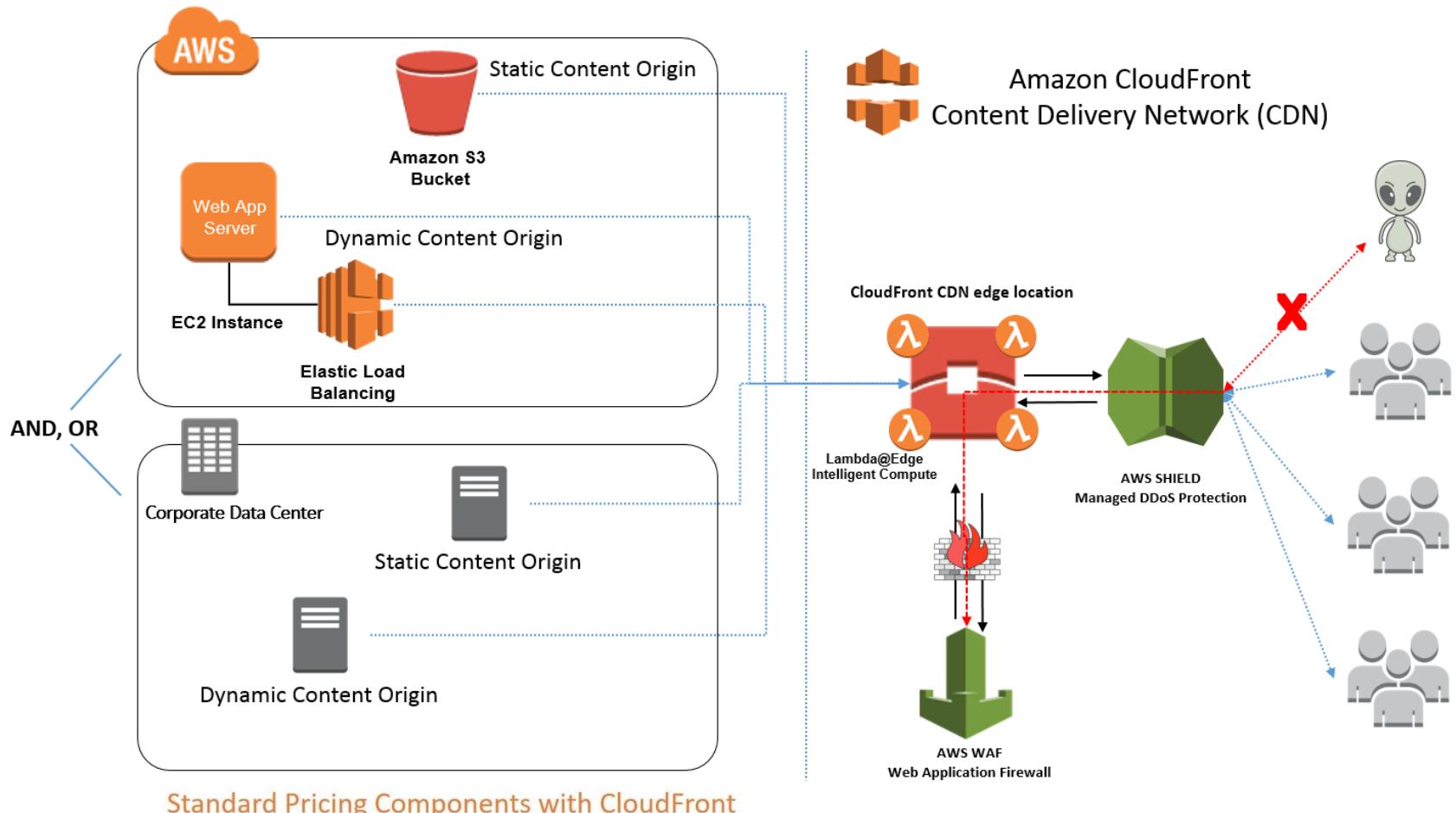
### EBS Volumes

- 1GB - 1TB
- \$0.10/GB per month
- Attach an EBS Volume(s) to any EC2 instance in the same Availability Zone
- Create an EBS Snapshot of an EBS Volume at any point in time
- Create an EBS Volume(s) from any EBS Snapshot

# VPC



# CloudFront



# Edge Locations

## Amazon CloudFront Edge Locations

Global Network Infrastructure

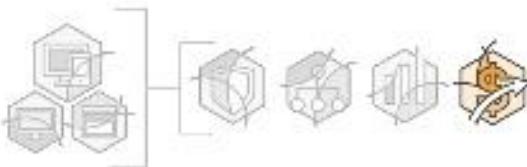


### Edge location

A site that CloudFront uses to cache copies of your content for faster delivery to users at any location.

## Pay-as-you-go

### Cloud pay-as-you-go model



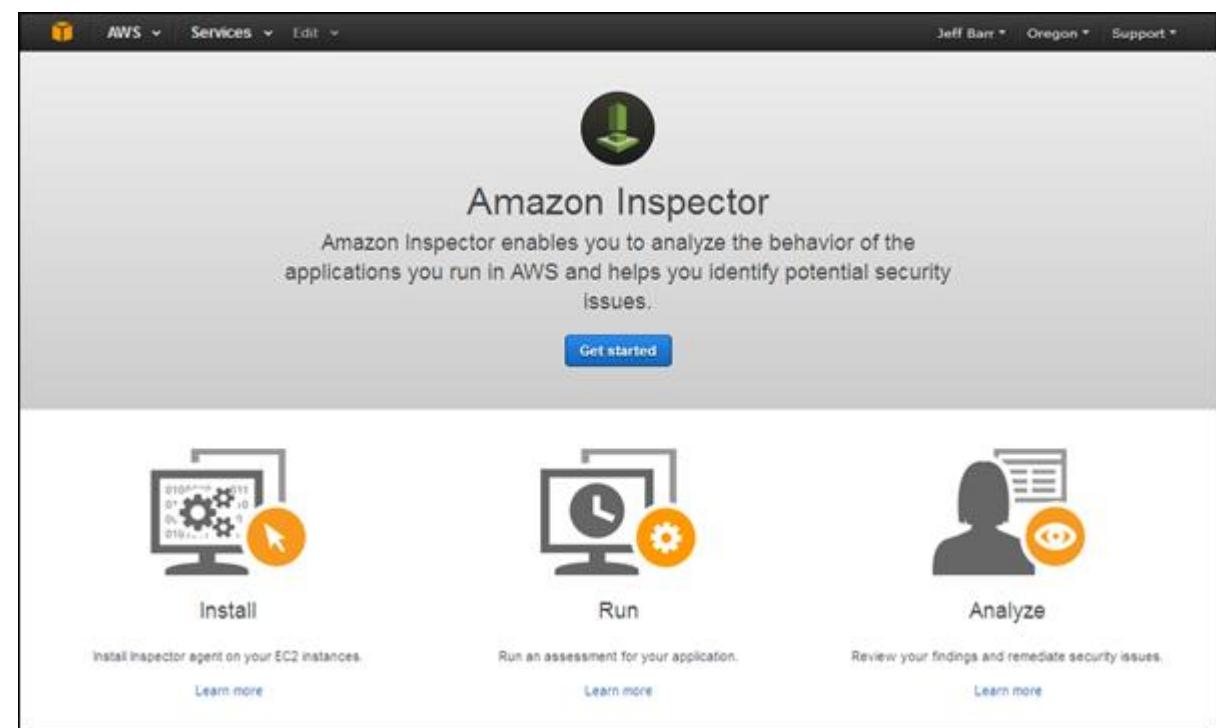
**Removes cost of infrastructure acquisition and support**

- No upfront investments
- Easy to set up and manage
- Pay for what you use
- Add users in new regions simply and cost-effectively
- Bring Your Own License (BYOL) to further reduce costs

## AWS Trusted Advisor



## Inspector



**Amazon Inspector**  
Amazon Inspector enables you to analyze the behavior of the applications you run in AWS and helps you identify potential security issues.

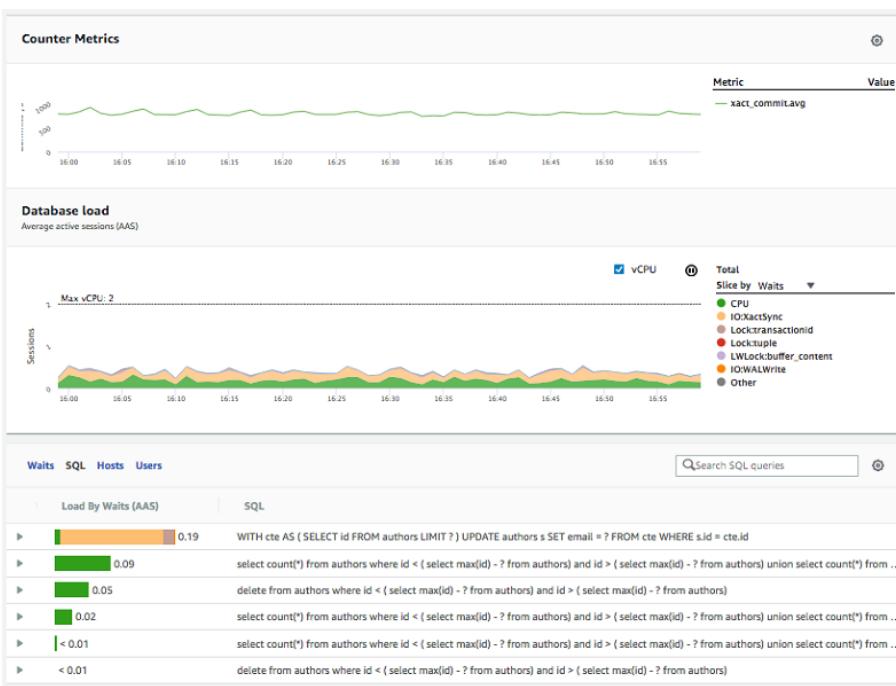
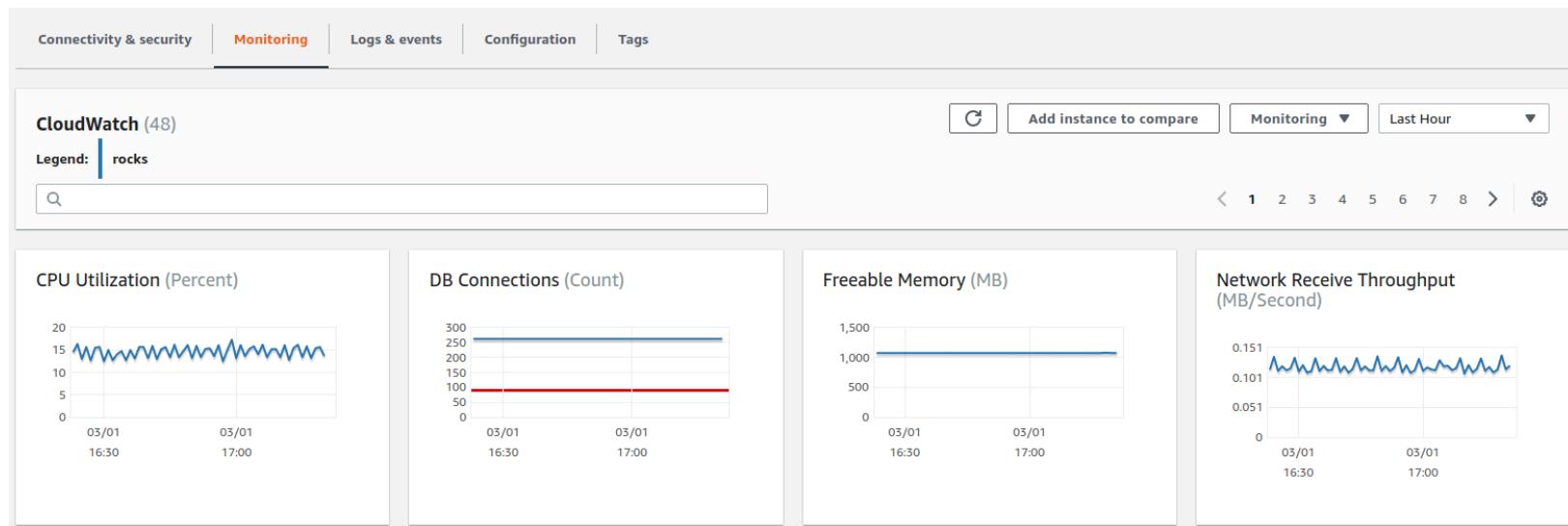
**Get started**

**Install**  
Install Inspector agent on your EC2 instances.  
[Learn more](#)

**Run**  
Run an assessment for your application.  
[Learn more](#)

**Analyze**  
Review your findings and remediate security issues.  
[Learn more](#)

# Cloudwatch



## S3 Transfer Acceleration

Amazon S3 Transfer Acceleration enables fast, easy, and secure transfers of files over long distances between your client and an S3 bucket. Transfer Acceleration takes advantage of Amazon CloudFront's globally distributed edge locations. As the data arrives at an edge location, data is routed to Amazon S3 over an optimized network path.



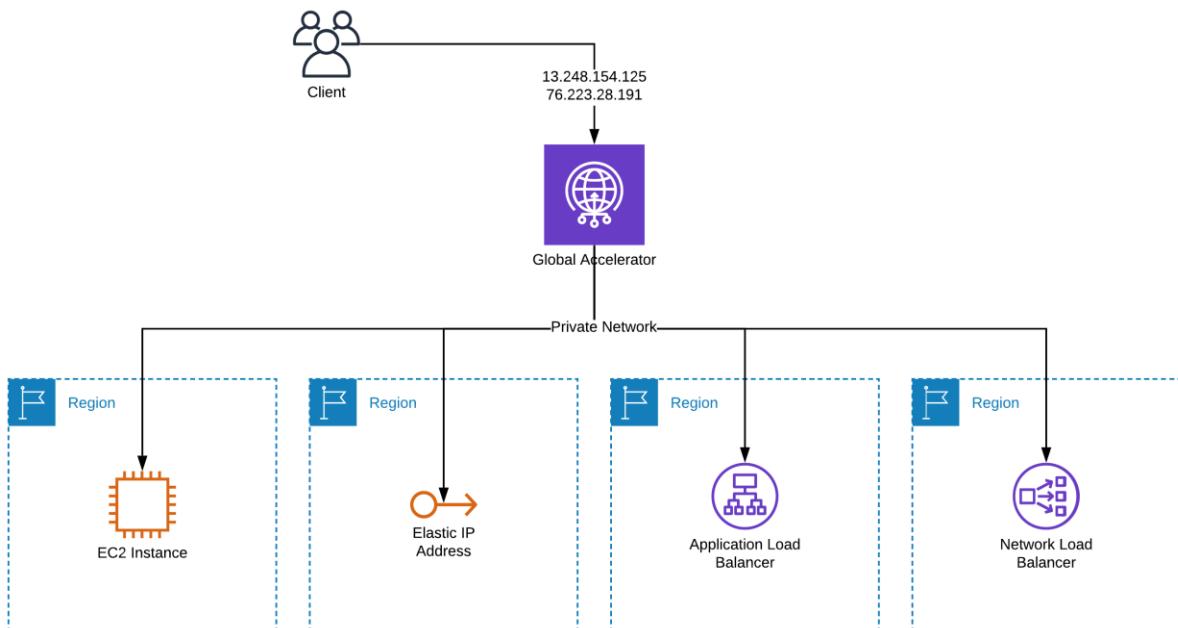
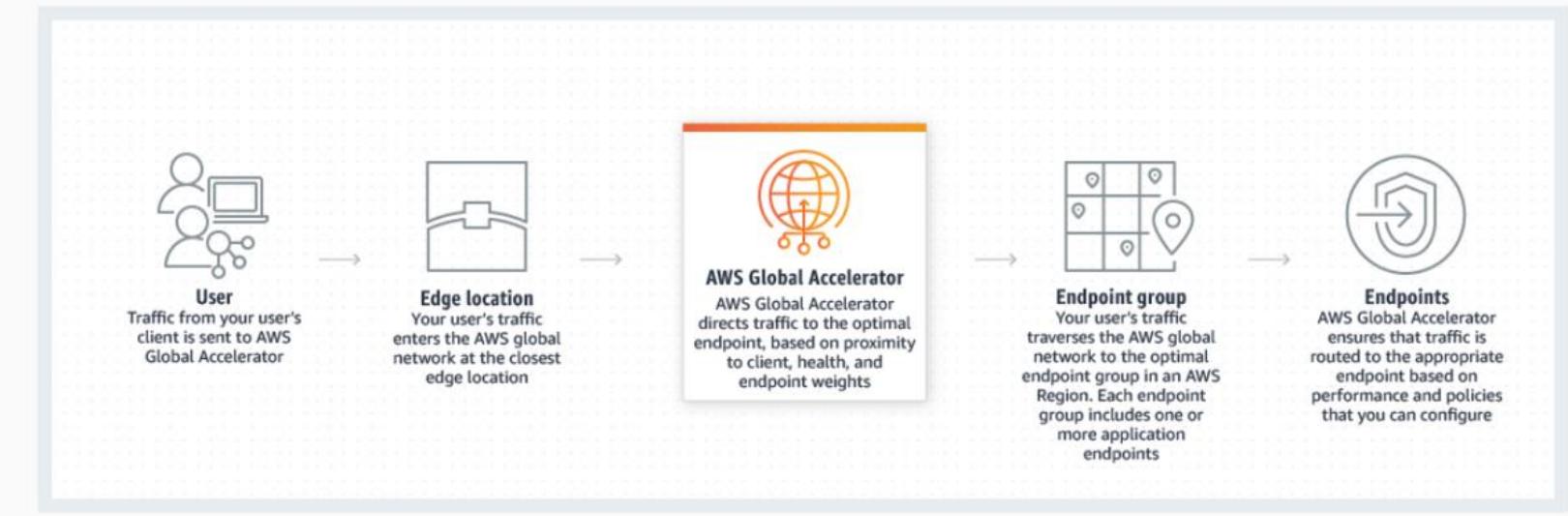
### Introducing Amazon S3 Transfer Acceleration

- Up to 300% faster
- Change your endpoint, not your code
- 56 global edge locations
- No firewall exceptions
- No client software required



# Global Accelerator

## How it works



# AWS Budgets

Home

## AWS Budgets

Cost Management  
 Cost Explorer  
**Budgets**  
 Budgets Reports  
 Cost & Usage Reports  
 Cost allocation tags  
 Billing  
 Bills  
 Orders and invoices  
 Credits  
 Preferences  
 Billing preferences  
 Payment methods  
 Consolidated billing  
 Tax settings

You currently have no budgets. AWS Budgets lets you quickly create custom budgets that will automatically alert you when your AWS costs or usage exceed, or are forecasted to exceed, the thresholds you set.

**Create a budget**



**Create and manage budgets**  
Set custom cost and usage budgets to more easily manage your AWS spend. Monitor your budget status from the Budgets Dashboard.



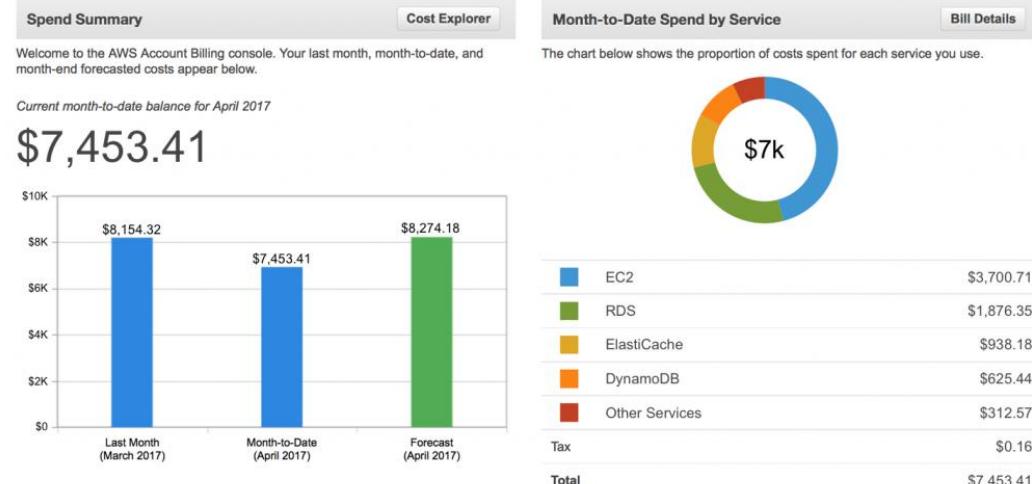
**Refine your budget using filters**  
Track your cost or usage across multiple dimensions by adding filters related to Service, Linked Account(s), Availability Zone, and more.



**Add notifications to your budget**  
Set up to five alert thresholds for each budget. Each alert can notify up to ten email recipients as well as publish updates to an Amazon SNS topic of your choice.

For more information, refer to the [Managing Your Costs With Budgets](#) section in the AWS Billing & Cost Management user guide.

# Cost Explorer

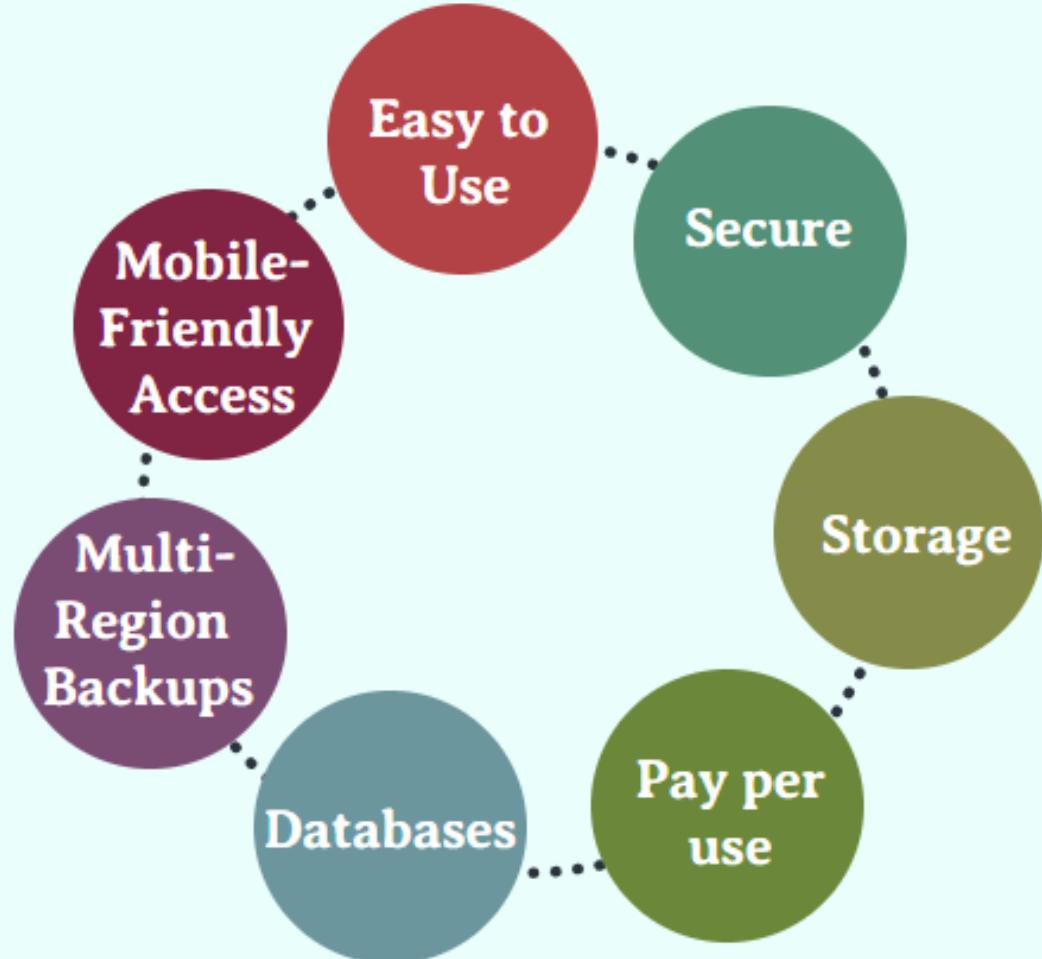
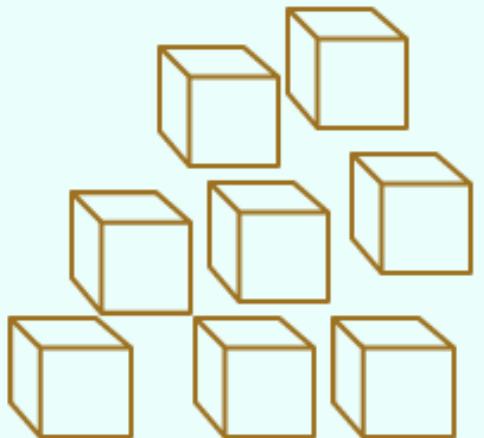


# Design for Failure and Nothing Fails

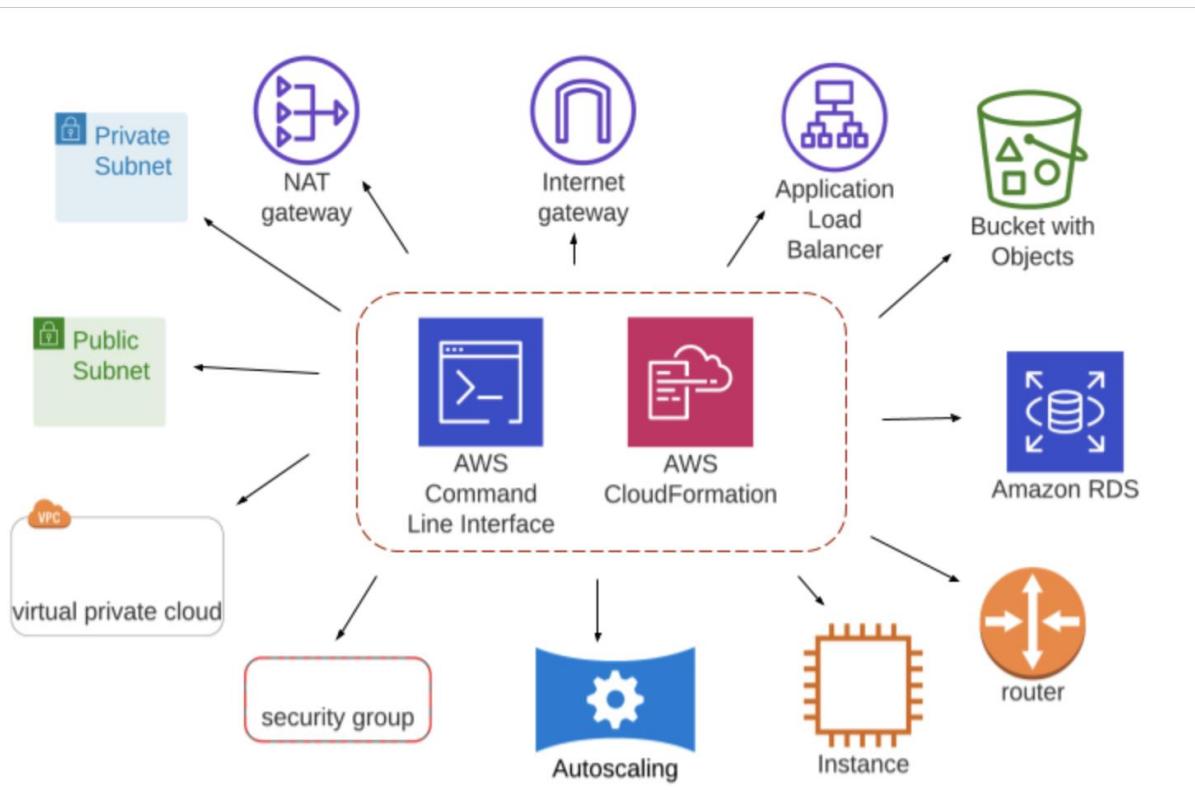
- Never expect your systems to be stable
- Never expect your code to be perfect
- Everything fails
  - IO controllers
  - Ethernet chips
  - Hard disks
  - Fans
  - Power supplies
  - Cabling
  - Network ports
  - Switches
  - Load-balancers
- If you can add it, it can fail



# Benefits Of AWS

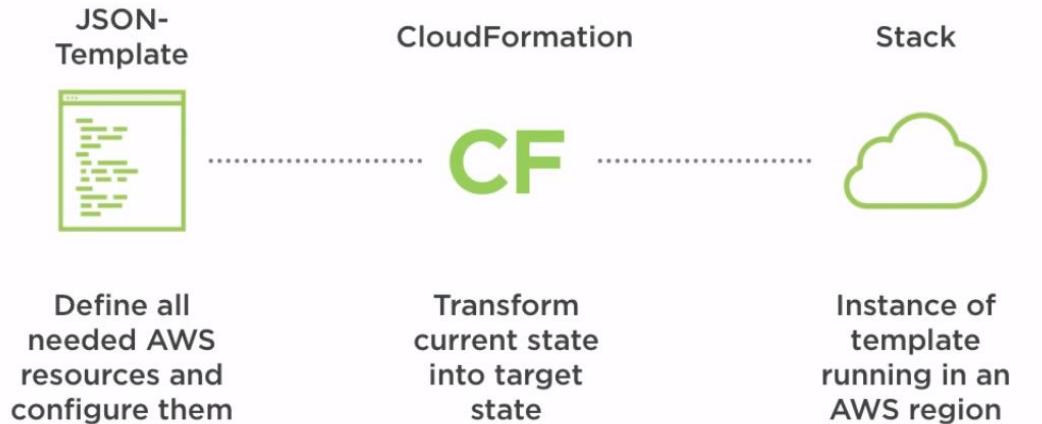


# CloudFormation

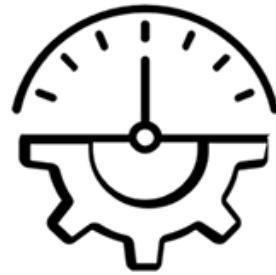


Various infrastructure resources on AWS cloud

## AWS CloudFormation



# AWS Well-Architected-Framework



## Operational Excellence

Run, manage and monitor production workload to deliver business value and continuous improve on supporting process and events

## Security

Protecting information, systems, and assets along from outside world with risk assessment, unplanned failures, and mitigation strategies

## Reliability

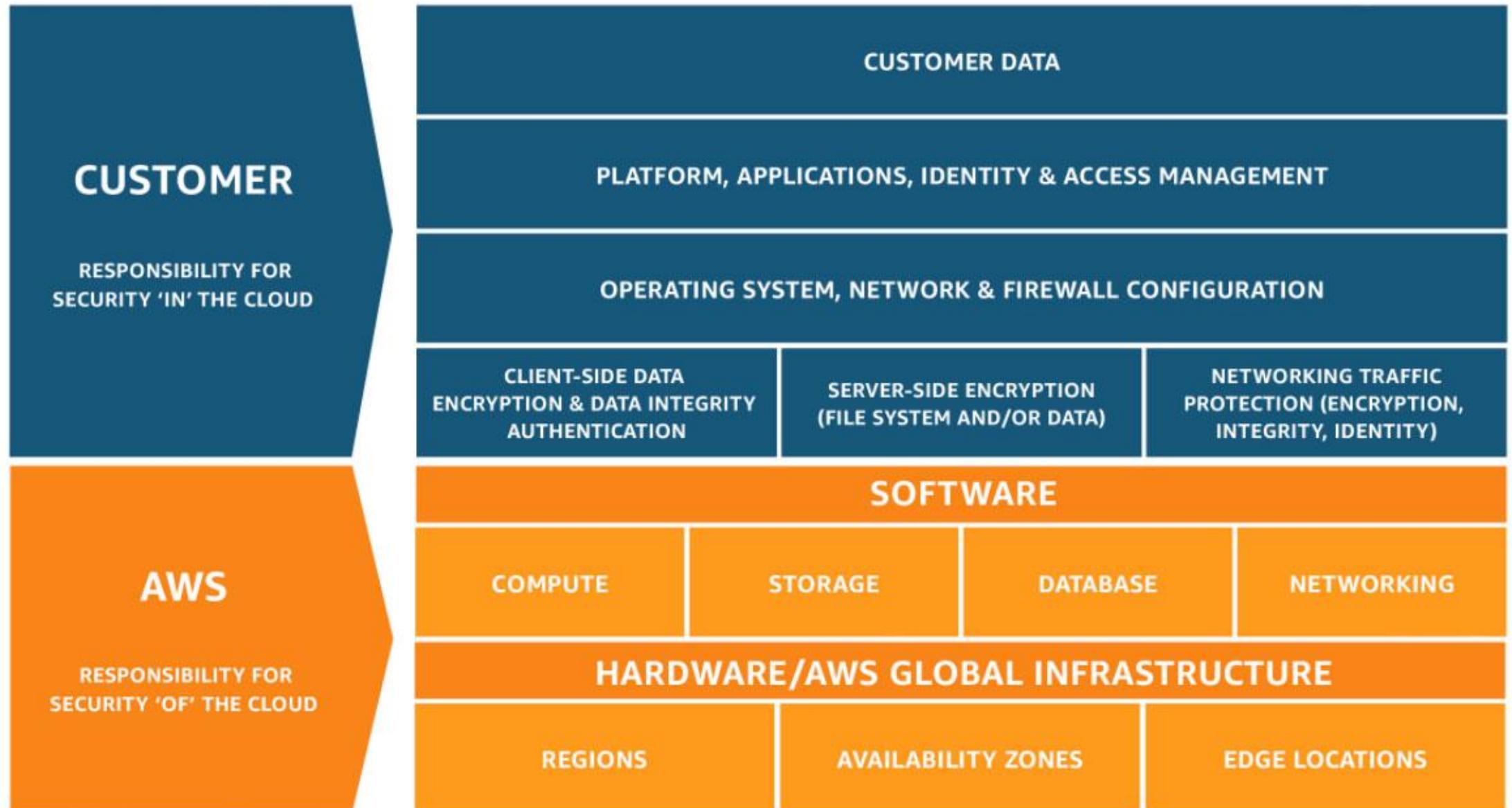
Auto recover workload from infrastructure, power or system failures with dynamic resource management to meet operational threshold.

## Performance Efficiency

Use computing resources efficiently to support on demand changes for delivering workload with maximum performance to meet the SLA

## Cost Optimization

Avoiding & eliminate un-needed cost or replace resources with cost-effective resources without impacting the best practices and business need



# AWS Cost Explorer

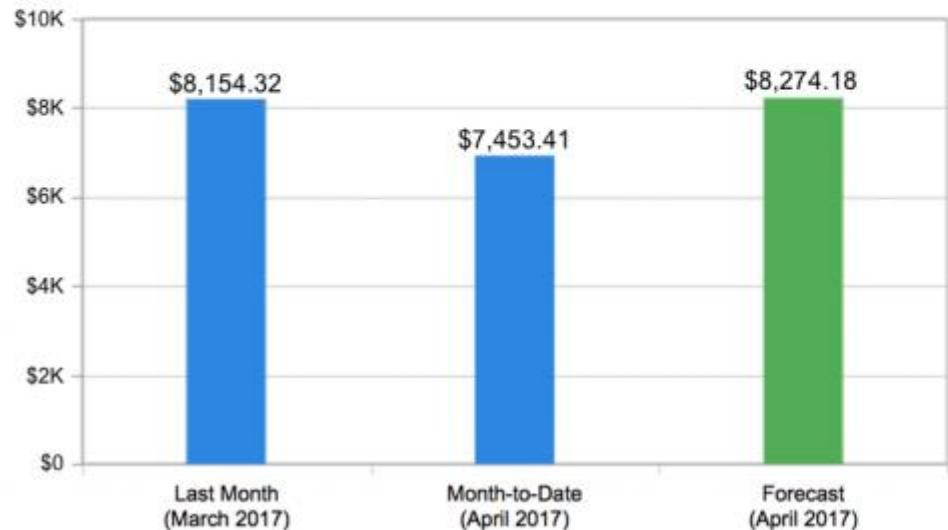
## Spend Summary

## Cost Explorer

Welcome to the AWS Account Billing console. Your last month, month-to-date, and month-end forecasted costs appear below.

*Current month-to-date balance for April 2017*

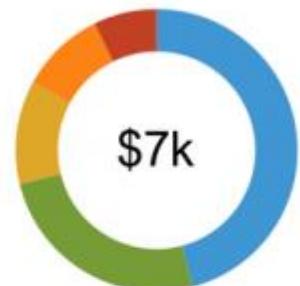
**\$7,453.41**



## Month-to-Date Spend by Service

## Bill Details

The chart below shows the proportion of costs spent for each service you use.



EC2	\$3,700.71
RDS	\$1,876.35
ElastiCache	\$938.18
DynamoDB	\$625.44
Other Services	\$312.57
Tax	\$0.16
<b>Total</b>	<b>\$7,453.41</b>

## AWS account root user and IAM user

There are two different types of users in AWS. You are either the account owner (root user) or you are an AWS Identity and Access Management (IAM) user. The root user is created when the AWS account is created and IAM users are created by the root user or an IAM administrator for the account. All AWS users have security credentials.

### **Root user credentials**

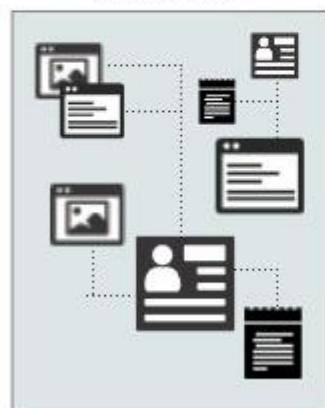
The credentials of the account owner allow full access to all resources in the account. You cannot use **IAM policies** to explicitly deny the root user access to resources. You can only use an AWS Organizations service **control policy (SCP)** to limit the permissions of the root user. Because of this, we recommend that you create an IAM user with administrator permissions to use for everyday AWS tasks and lock away the access keys for the root user.

## decoupled-architecture

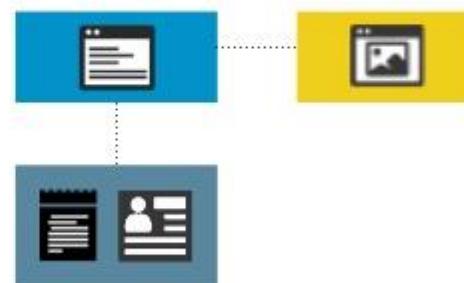
### Monoliths vs. Microservices



Monolith



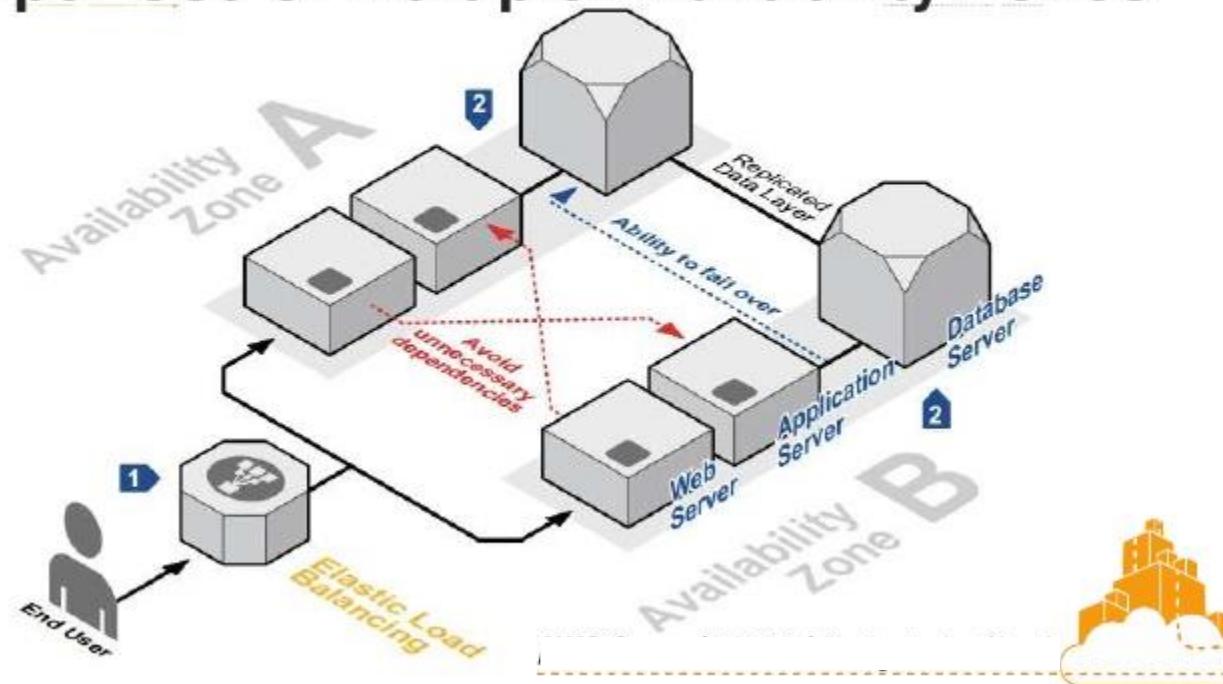
Decoupled



VS.

# Fault Tolerance

## Proper Use of Multiple Availability Zones

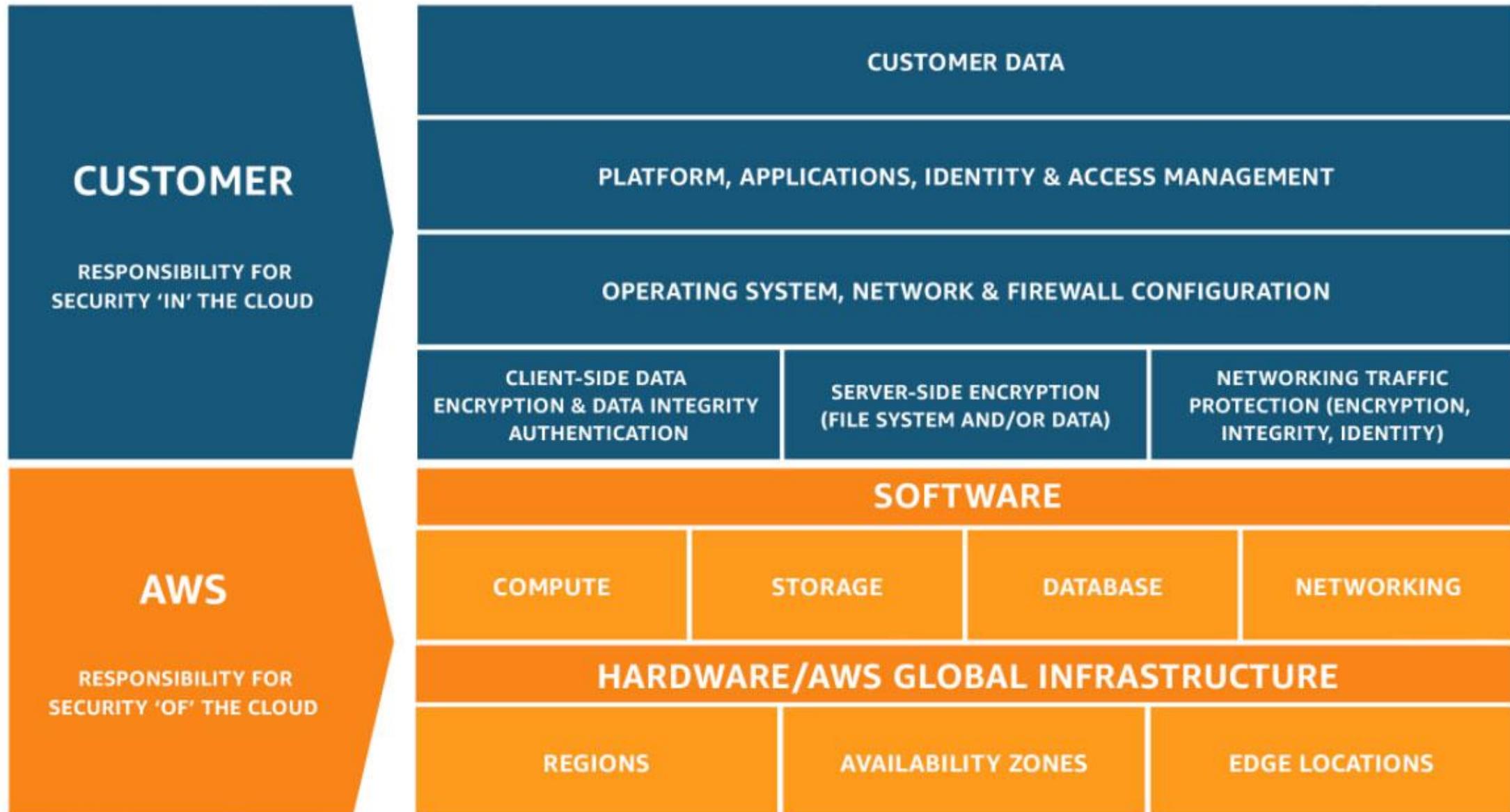


Fault Tolerance

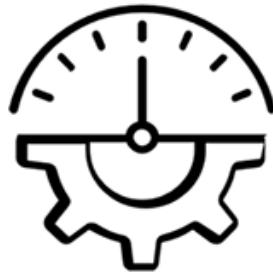


Multi AZ

# aws shared-responsibility-model



# AWS Well-Architected-Framework



## Operational Excellence

Run, manage and monitor production workload to deliver business value and continuous improve on supporting process and events

## Security

Protecting information, systems, and assets along from outside world with risk assessment, unplanned failures, and mitigation strategies

## Reliability

Auto recover workload from infrastructure, power or system failures with dynamic resource management to meet operational threshold.

## Performance Efficiency

Use computing resources efficiently to support on demand changes for delivering workload with maximum performance to meet the SLA

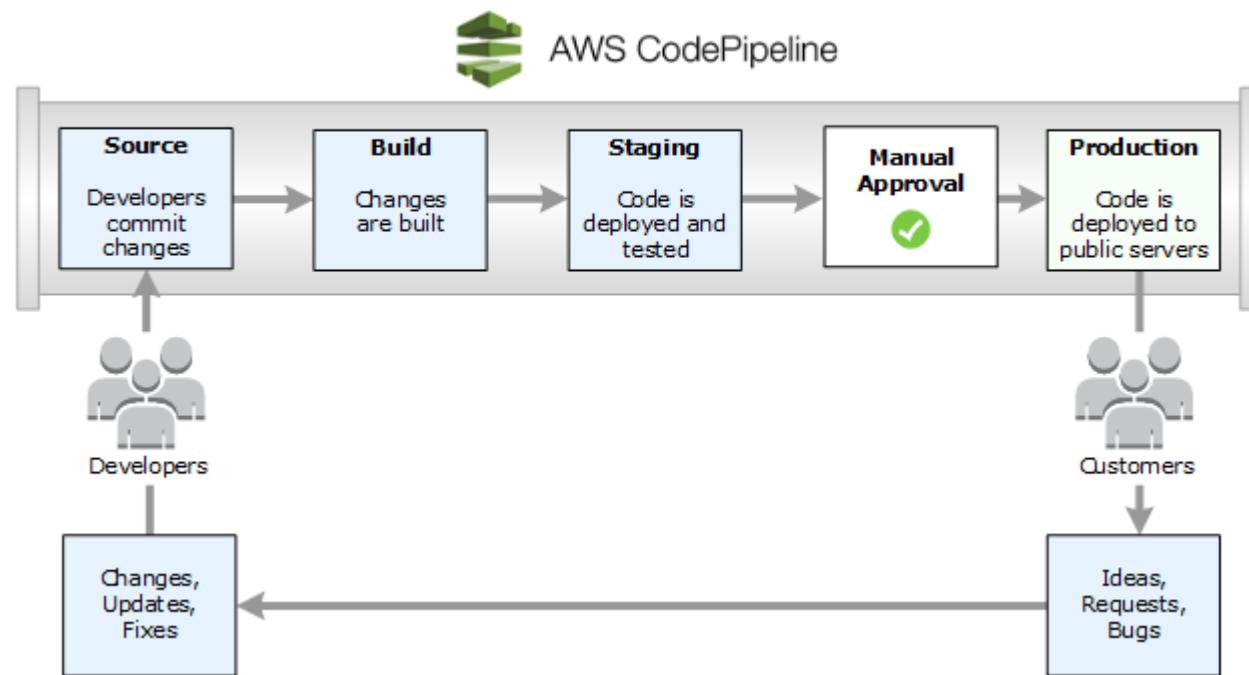
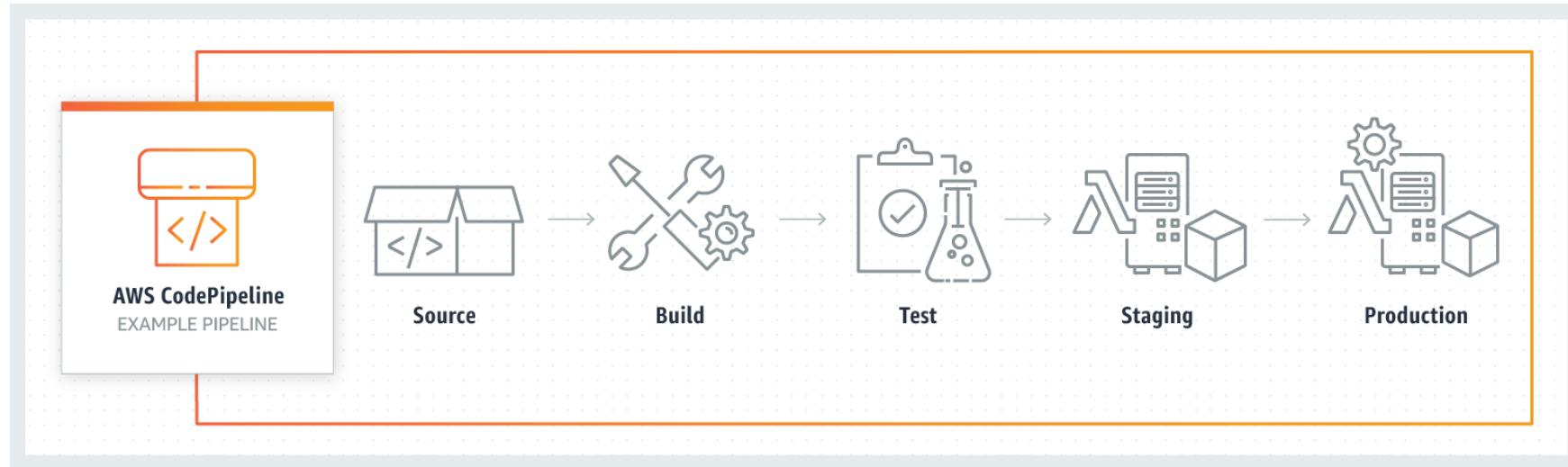
## Cost Optimization

Avoiding & eliminate un-needed cost or replace resources with cost-effective resources without impacting the best practices and business need

## Spot Instances

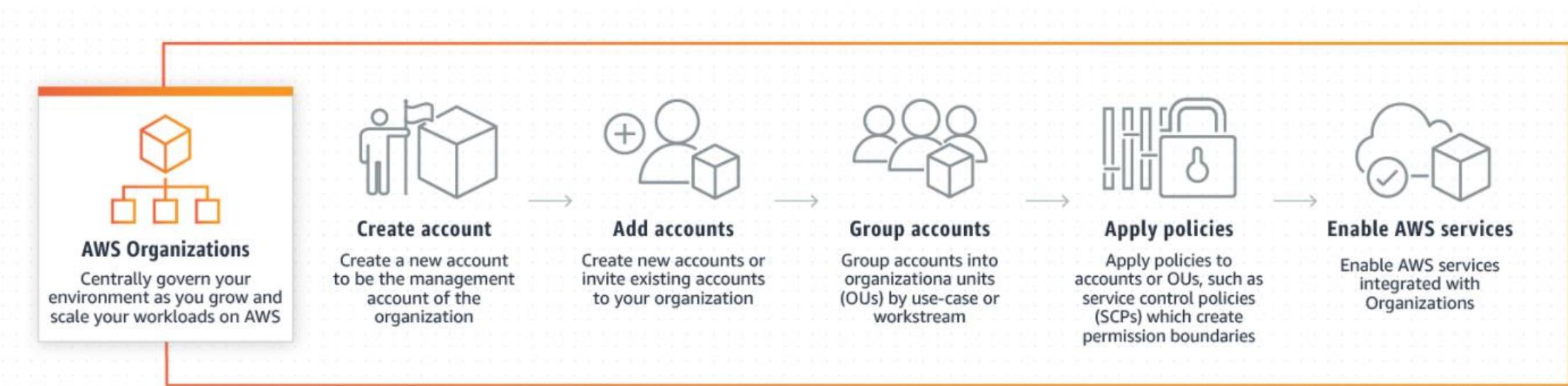
Spot Instances are a cost-effective choice if you can be flexible about when your applications run and if your applications can be interrupted. For example, Spot Instances are well-suited for data analysis, batch jobs, background processing, and optional tasks. For more information, see [Amazon EC2 Spot Instances](#) ↗

# CodePipeline

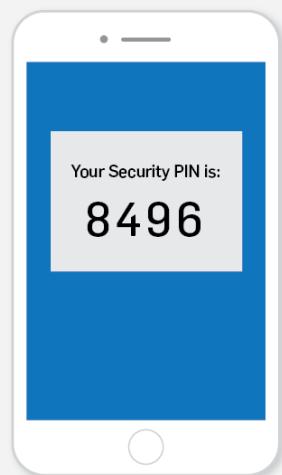
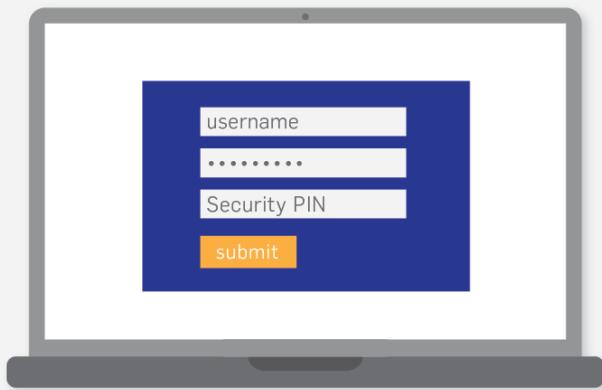


# AWS Organizations

AWS Organizations helps you centrally manage and govern your environment as you grow and scale your AWS resources. Using AWS Organizations, you can programmatically create new AWS accounts and allocate resources, group accounts to organize your workflows, apply policies to accounts or groups for governance, and simplify billing by using a single payment method for all of your accounts.



# Two Factor Authentication



## MFA



### Multi-factor Authentication

Please enter an MFA code to complete sign-in.

**MFA Code:**

115127

**Submit**

[Cancel](#)

# Elastic Beanstalk

AWS Elastic Beanstalk is an easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS.

**Elastic Beanstalk**

Elastic Beanstalk > Environments > GettingStartedApp-env

**GettingStartedApp-env** GettingStartedApp-env.bx7dx222kw.us-east-2.elasticbeanstalk.com

**Health** OK **Running version** Sample Application **Platform** Tomcat 8.5 with Java 8 running on 64bit Amazon Linux/3.3.2

**Recent events**

Time	Type	Details
2020-01-28 12:11:17 UTC-0800	INFO	Environment health has transitioned from Pending to Ok. Initialization completed 9 seconds ago and took 4 minutes.
2020-01-28 12:11:15 UTC-0800	INFO	Successfully launched environment: GettingStartedApp-env
2020-01-28 12:11:13 UTC-0800	INFO	Application available at GettingStartedApp-env.bx7dx222kw.us-east-2.elasticbeanstalk.com.
2020-01-28 12:10:32 UTC-0800	INFO	Created CloudWatch alarm named: awseb-e-cubmdjm6ga-stack-AWSEBCloudwatchAlarmHigh-1J990QJ72AWQ6
2020-01-28 12:10:32 UTC-0800	INFO	Created CloudWatch alarm named: awseb-e-cubmdjm6ga-stack-AWSEBCloudwatchAlarmLow-NkZGB7ZLMDH6

**Elastic Beanstalk** mobilebackend-prod (mobilebackend-prod.elasticbeanstalk.com)

**Overview**

**Environment Health** Green **Running Version** Sample Application **Configuration** Python

**Recent Events**

Time	Type	Details
2013-07-12 18:21:28 UTC-0700	INFO	Environment update completed successfully.
2013-07-12 18:21:28 UTC-0700	INFO	Successfully deployed new configuration to environment.
2013-07-12 18:20:28 UTC-0700	INFO	Updating environment mobilebackend-prod's configuration settings.
2013-07-12 18:20:19 UTC-0700	INFO	Environment update is starting.

## Across multiple regions

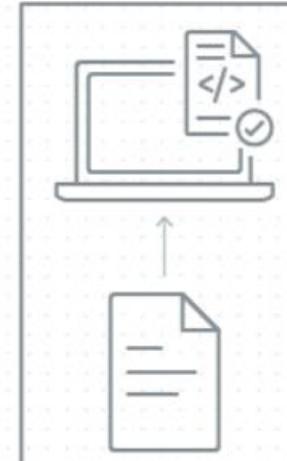
### Cross-Region Disaster Recovery

Whether you have built your applications on AWS or migrated to AWS, you can protect your workloads with cross-region disaster recovery. This is a cost-effective way to achieve business continuity. CloudEndure Disaster Recovery enables geographic redundancy between AWS Regions or Availability Zones while still providing continuous replication with stringent RPOs and RTOs.

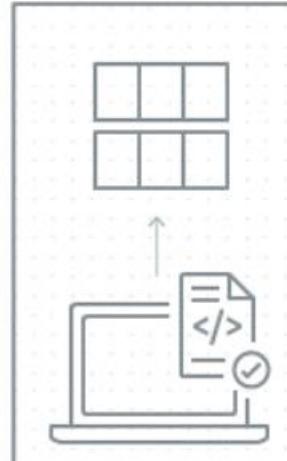
## Dedicated Host

# Amazon EC2 Dedicated Hosts

Dedicated hardware to support existing software licenses and improve compliance



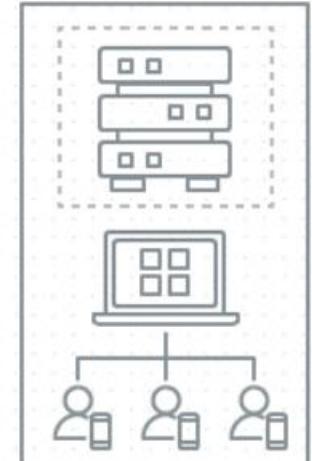
Specify your licensing rules



Attach licensing rules to AMI



Specify Dedicated Host management preferences

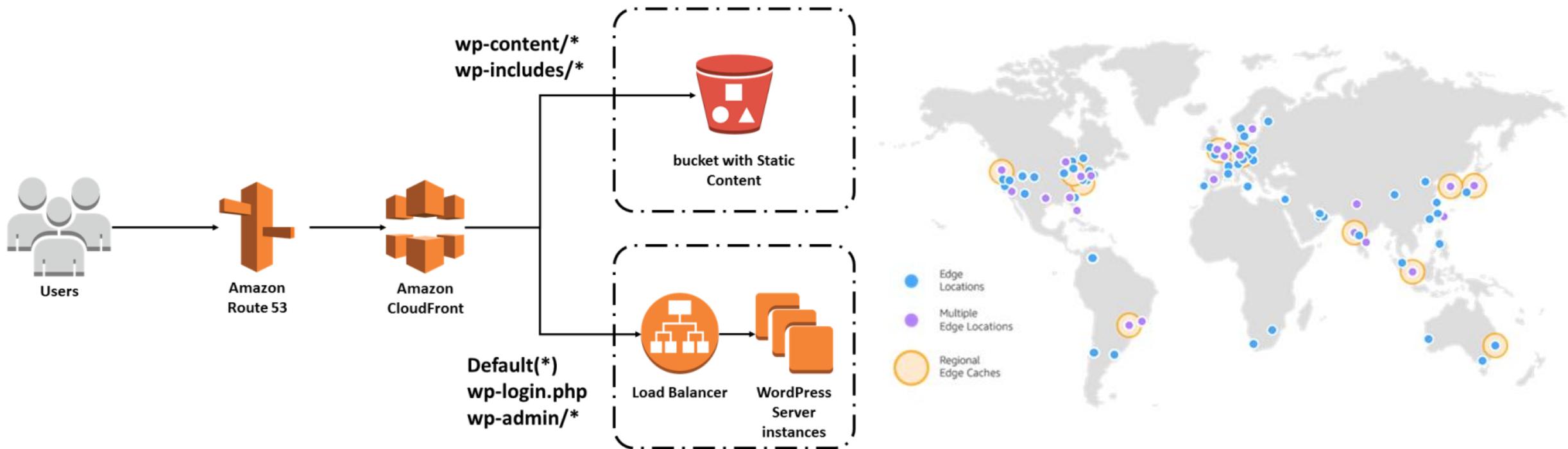


Management of Dedicated Host is now automated. Start launching of instances

# Cloudfront

## Amazon CloudFront

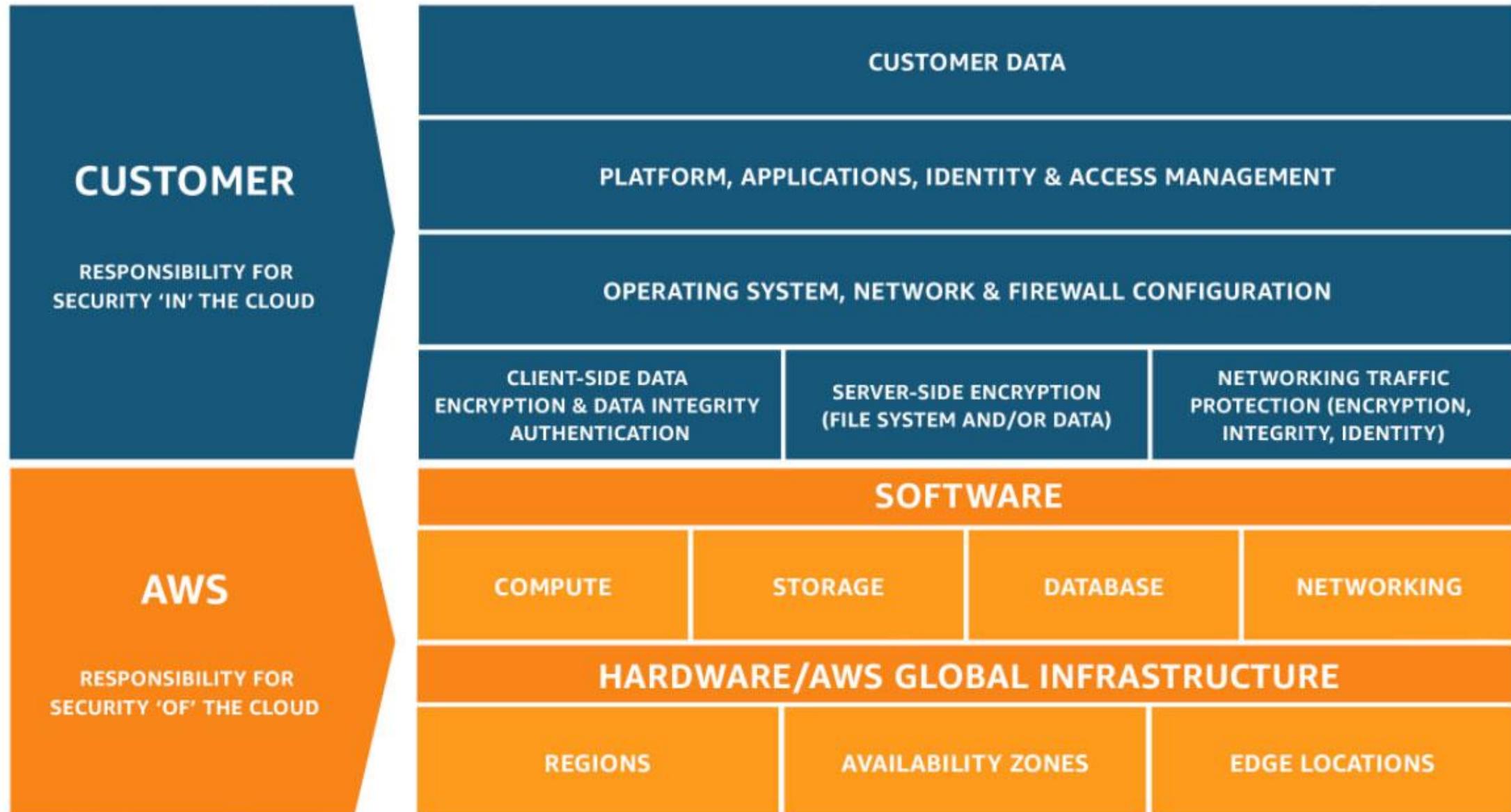
Fast, highly secure and programmable content delivery network (CDN)



# Lambda@Edge

Lambda@Edge is a feature of [Amazon CloudFront](#) that lets you run code closer to users of your application, which improves performance and reduces latency. With Lambda@Edge, you don't have to provision or manage infrastructure in multiple locations around the world. You pay only for the compute time you consume - there is no charge when your code is not running.





## Pricing EC2 Instances

- **On-Demand Instances** – Pay, by the second, for the instances that you launch.
- **Savings Plans** – Reduce your Amazon EC2 costs by making a commitment to a consistent amount of usage, in USD per hour, for a term of 1 or 3 years.
- **Reserved Instances** – Reduce your Amazon EC2 costs by making a commitment to a consistent instance configuration, including instance type and Region, for a term of 1 or 3 years.
- **Spot Instances** – Request unused EC2 instances, which can reduce your Amazon EC2 costs significantly.
- **Dedicated Hosts** – Pay for a physical host that is fully dedicated to running your instances, and bring your existing per-socket, per-core, or per-VM software licenses to reduce costs.
- **Dedicated Instances** – Pay, by the hour, for instances that run on single-tenant hardware.
- **Capacity Reservations** – Reserve capacity for your EC2 instances in a specific Availability Zone for any duration.

# CloudTrail Event History

Services | Resource Groups | Tara E Walker | N. Virginia | Support

CloudTrail

**Event history** (selected)

Your event history contains the create, modify, and delete activities for supported services taken by people, groups, or AWS services in your AWS account. To view a complete log of your CloudTrail events, create a trail and then go to your Amazon S3 bucket or CloudWatch Logs.

You can view the last 7 days of events. Choose an event to view more information about it. [Learn more](#)

Filter:   Time range:

	Event time	User name	Event name	Resource type	Resource name
▶	2017-08-11, 04:28:47 AM	root	UpdateUserPoolClient		
▶	2017-08-11, 02:39:03 AM	root	UpdateUserPoolClient		
▶	2017-08-11, 02:38:53 AM	root	UpdateUserPoolClient		
▶	2017-08-11, 02:38:39 AM	root	UpdateUserPoolClient		
▶	2017-08-10, 11:20:33 PM	root	UpdateUserPoolClient		
▶	2017-08-10, 08:22:50 PM	AWS-SNS	CreateLogStream		
▶	2017-08-10, 08:22:46 PM	root	CreateUserPoolClient		
▶	2017-08-10, 08:21:52 PM	root	CreateRole		
▶	2017-08-10, 08:21:52 PM	root	CreatePolicy	IAM Policy	arn:aws:iam::[REDACTED]po...
▶	2017-08-10, 08:21:52 PM	root	AttachRolePolicy	IAM Policy and 1 more	arn:aws:iam::[REDACTED]po...
▶	2017-08-10, 08:21:08 PM	root	DetachRolePolicy	IAM Policy and 1 more	arn:aws:iam::[REDACTED]po...
▶	2017-08-10, 08:21:08 PM	root	DeleteRole	IAM Role	TaraCognitoGAPool-SMS-Role

# AWS Config



Configuration change occurs in your AWS resources.



**AWS Config**  
AWS Config records and normalizes the changes into a consistent format.



AWS Config automatically evaluates the recorded configurations against the configurations you specify.



AWS Config APIs & Console



Amazon SNS



Amazon CloudWatch



Amazon S3

Access change history and compliance results using the console or APIs. CloudWatch Events or SNS alert you when changes occur. Deliver change history and snapshot files to your S3 bucket for analysis.

## AWS Config

### Dashboard

Rules  
Resources  
Settings

### What's new

Learn More  
Documentation  
Partners  
Pricing  
FAQs

### Resources

Total resources

A

200

Top 10 resource types

B

Total

CloudWatch Alarm

38

RDS DBSnapshot

26

EC2 SecurityGroup

25

EC2 NetworkInterface

18

S3 Bucket

17

EC2 Subnet

16

EC2 RouteTable

12

EC2 NetworkAcl

8

EC2 Volume

7

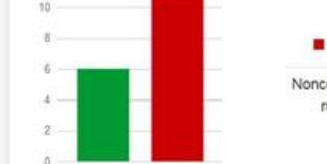
EC2 EIP

5

View all 200 resources

C

### Config rule compliance



D

### Top 5 noncompliant rules

Rule name	Compliance
s3-bucket-ssl-requests-only	14 noncompliant resource(s)
s3-bucket-logging-enabled	13 noncompliant resource(s)
restricted-ssh	12 noncompliant resource(s)
s3-bucket-versioning-enabled	9 noncompliant resource(s)
encrypted-volumes	4 noncompliant resource(s)

F

View all 11 noncompliant rules

G

### Resource compliance



E

## S3 Static Content

Uploading progress

---

Uploaded file url:

**AWS S3 Upload Image**

**AWS S3 Upload Video**

**AWS S3 Upload Audio**

**AWS S3 Upload File**

# Security Group

Launch Instance ▼ Connect Actions ▾

Filter by tags and attributes or search by keyword

	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name	Monitoring	Launch Time
<input checked="" type="checkbox"/>	jasmin	i-07df312d5e15670a5	t2.small	us-east-2b	running	2/2 checks ...	None	ec2-3-21-230-249.us-e...	10.0.0.10	-	key1	disabled	May 11, 2020 at 6:24:14 PM ...
<input type="checkbox"/>		i-0544f72515190eaaa	t2.small	us-east-2c	running	2/2 checks ...	None	ec2-18-221-189-57.us...	10.0.0.11	-	key2	disabled	May 11, 2020 at 3:42:44 PM ...

Instance: i-07df312d5e15670a5 (jasmin) Public DNS: ec2-3-21-230-249.us-east-2.compute.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID	i-07df312d5e15670a5	Public DNS (IPv4)	ec2-3-21-230-249.us-east-2.compute.amazonaws.com
Instance state	running	IPv4 Public IP	10.0.0.10
Instance type	t2.small	IPv6 IPs	-
Finding	Opt-in to AWS Compute Optimizer for recommendations. Learn more	Elastic IPs	-
Private DNS	ip-172-31-30-249.us-east-2.compute.internal	Availability zone	us-east-2b
Private IPs	172.31.30.249	Security groups	My WebServer, view inbound rules, view outbound rules
Secondary private IPs	-	Scheduled events	No scheduled events
VPC ID	vpc-d010d9bb	AMI ID	Windows_Server-2019-English-Full-Base-2020.04.15 (ami-08db69d5de9dc9245)
Subnet ID	subnet-629eb118	Platform details	Windows
Network interfaces	eth0	Usage operation	RunInstances:0002
IAM role	-	Source/dest. check	True

Connect Get Windows Password Create Template From Instance

Launch More Like This

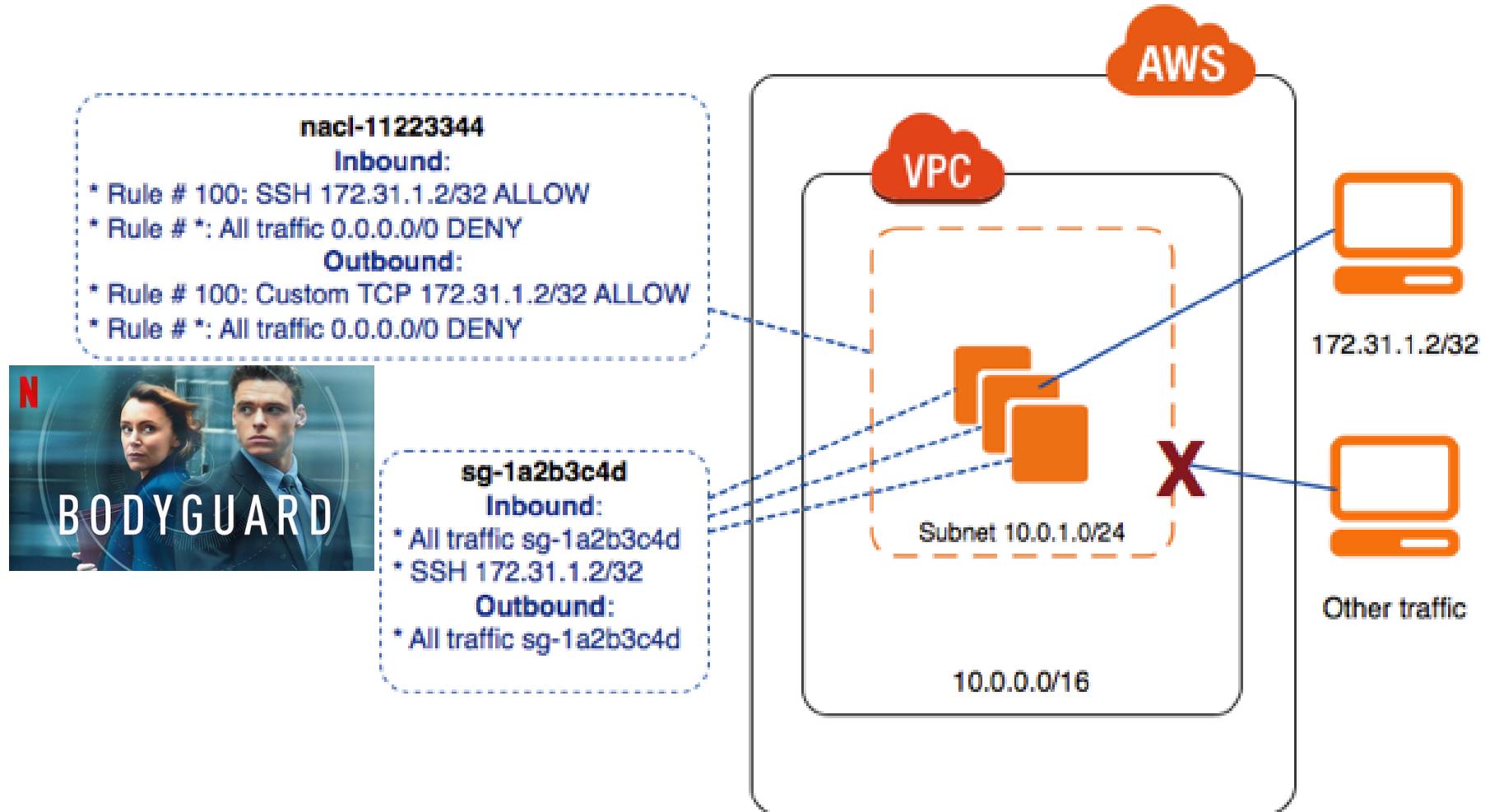
- Instance State
- Instance Settings
- Image
- Networking ▾ Change Security Groups
- ClassicLink ▾ Attach Network Interface
- CloudWatch Monitoring ▾ Detach Network Interface
- Private IPs 10.0.0.10
- Secondary private IPs 10.0.0.11
- VPC ID vpc-3e305
- Subnet ID subnet-9a3d049b2 (OMM1)
- Manage IP Addresses

## EC2

**Amazon EC2 is a web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers.**



## SG &amp; NACL



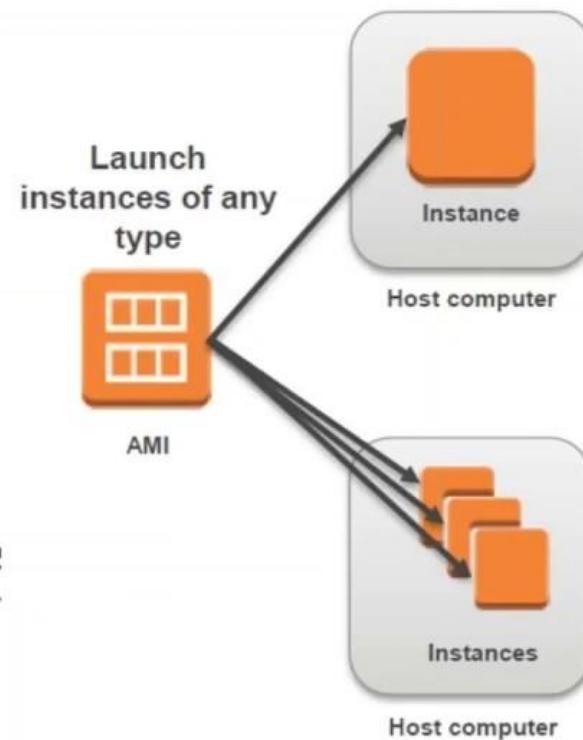
## AMI

## EC2: Amazon Machine Image - AMI



An AMI includes the following:

- A template for the **root volume** for the instance (for example, an operating system, an application server, and applications).
- Launch **permissions** that control which AWS accounts can use the AMI to launch instances.
- A block device mapping that specifies the **volumes to attach** to the instance when it is launched.



## S3 Glacier

# Uploading an Archive in Amazon S3 Glacier

[PDF](#) | [Kindle](#) | [RSS](#)

Amazon S3 Glacier (S3 Glacier) provides a management console, which you can use to create and delete vaults. However, you cannot upload archives to S3 Glacier by using the management console. To upload data, such as photos, videos, and other documents, you must either use the AWS CLI or write code to make requests, by using either the REST API directly or by using the AWS SDKs.

## AWS Support Plans

# Compare AWS Support Plans

Select a Support Plan

## Edge Locations

Amazon CloudFront **employs a global network** of edge locations and regional edge caches that **cache copies of your content close to your viewers**. Amazon CloudFront ensures that end-user requests are served by the **closest edge location**. As a result, viewer requests travel a short distance, improving performance for your viewers. For files not cached at the edge locations and the regional edge caches, Amazon CloudFront keeps persistent connections with your origin servers so that those files can be fetched from the origin servers as quickly as possible.

### Amazon CloudFront Edge Locations

Global Network Infrastructure



### Edge location

A site that CloudFront uses to cache copies of your content for faster delivery to users at any location.

## S3 Lifecycle

# Object lifecycle management

[PDF](#) | [Kindle](#) | [RSS](#)

To manage your objects so that they are stored cost effectively throughout their lifecycle, configure their *Amazon S3 Lifecycle*. An *S3 Lifecycle configuration* is a set of rules that define actions that Amazon S3 applies to a group of objects. There are two types of actions:

- **Transition actions**—Define when objects transition to another [storage class](#). For example, you might choose to transition objects to the S3 Standard-IA storage class 30 days after you created them, or archive objects to the S3 Glacier storage class one year after creating them.

There are costs associated with the lifecycle transition requests. For pricing information, see [Amazon S3 pricing](#).

- **Expiration actions**—Define when objects expire. Amazon S3 deletes expired objects on your behalf. The lifecycle expiration costs depend on when you choose to expire objects. For more information, see [Understanding object expiration](#).

# RDS Read-Replica & RDS Multi AZ

Multi-AZ deployments	Multi-Region deployments	Read replicas
Main purpose is high availability	Main purpose is disaster recovery and local performance	Main purpose is scalability
Non-Aurora: synchronous replication; Aurora: asynchronous replication	Asynchronous replication	Asynchronous replication
Non-Aurora: only the primary instance is active; Aurora: all instances are active	All regions are accessible and can be used for reads	All read replicas are accessible and can be used for readscaling
Non-Aurora: automated backups are taken from standby; Aurora: automated backups are taken from shared storage layer	Automated backups can be taken in each region	No backups configured by default
Always span at least two Availability Zones within a single region	Each region can have a Multi-AZ deployment	Can be within an Availability Zone, Cross-AZ, or Cross-Region
Non-Aurora: database engine version upgrades happen on primary; Aurora: all instances are updated together	Non-Aurora: database engine version upgrade is independent in each region; Aurora: all instances are updated together	Non-Aurora: database engine version upgrade is independent from source instance; Aurora: all instances are updated together
Automatic failover to standby (non-Aurora) or read replica (Aurora) when a problem is detected	Aurora allows promotion of a secondary region to be the master	Can be manually promoted to a standalone database instance (non-Aurora) or to be the primary instance (Aurora)

## Route53 DNS TTL

Domain registrars typically use a TTL (time to live) of 24 to 48 hours for name servers. This means that when a DNS resolver gets the name servers for your domain, it uses that information for up to 48 hours before it submits another request for the current name servers for the domain. If you transferred DNS service to Route 53 in the last 48 hours and then changed DNS settings, some DNS resolvers are still using your old DNS service to route traffic for the domain.

Generally, DNS resolvers make queries for changes every 86400 seconds. That means the DNS resolver cache is stagnant for up to 24 hours. This can be changed, but the widely accepted time is 24 hours.

# AWS KMS

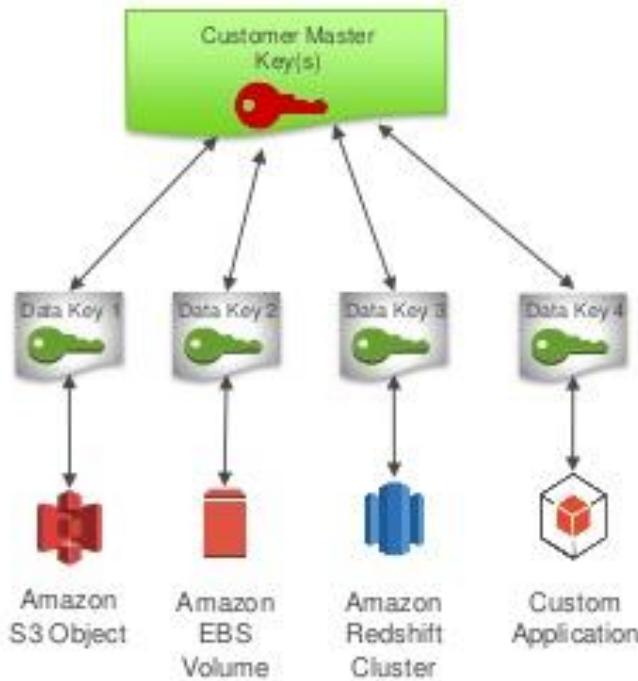
## Services integration with AWS KMS

Two-tiered key hierarchy using envelope encryption

- Unique data key encrypts customer data
- AWS KMS master keys encrypt data keys

Benefits:

- Limits risk of compromised data key
- Better performance for encrypting large data
- Easier to manage small number of master keys than millions of data keys
- Centralized access and audit of key activity



# Cloudwatch Logs

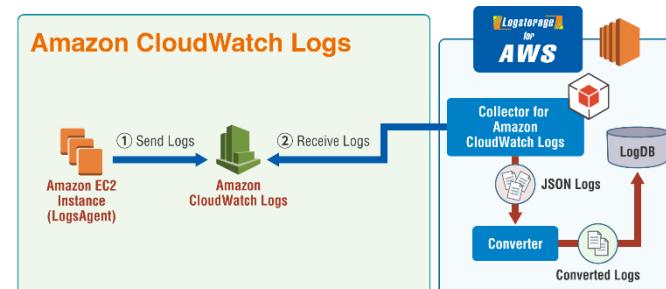
AWS Services Resource Groups

CloudWatch > Log Groups > apache-access > [REDACTED]

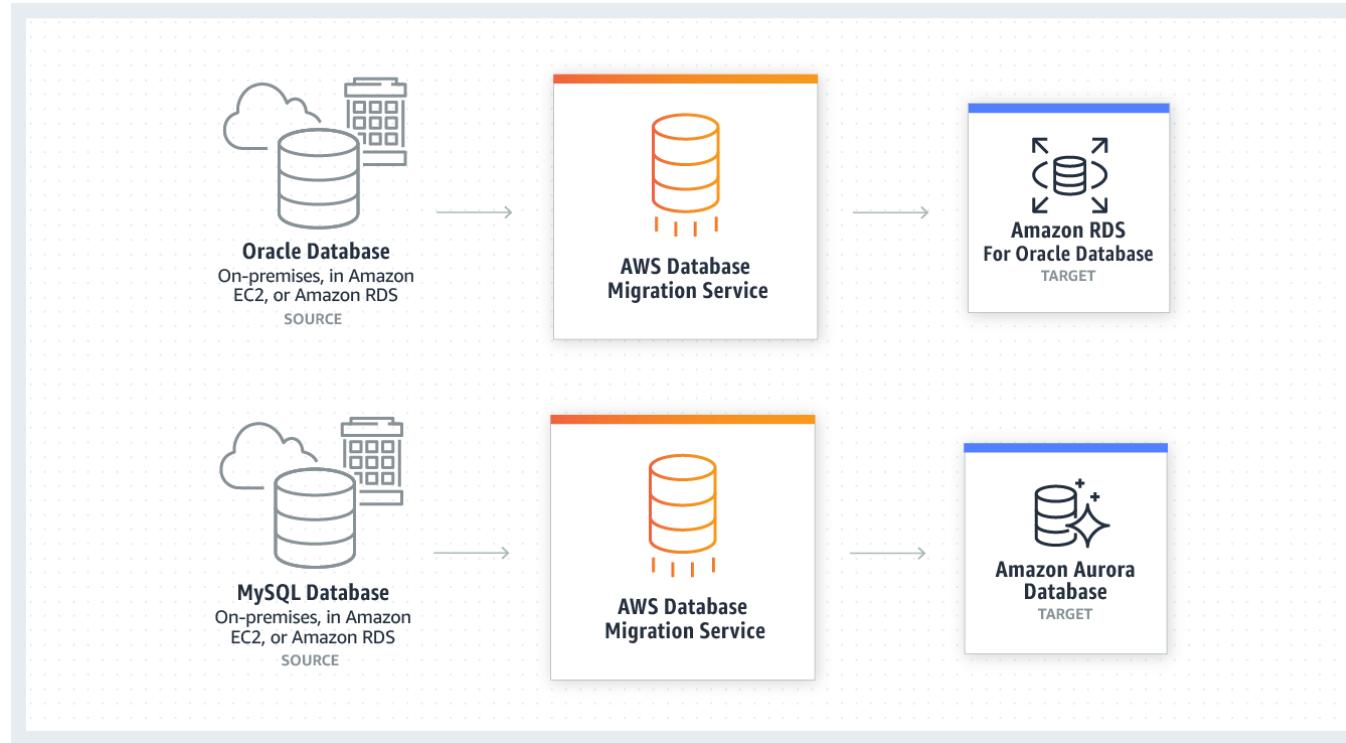
Expand all Row Text Filter events all 2019-04-30 (12:31:05)

Time (UTC +00:00)	Message
2019-04-30	
11:55:52	182.73.116.202 - - [30/Apr/2019:11:55:47 +0000] "GET / HTTP/1.1" 200 11173 "-" "Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
16:17:47	45.168.138.131 - - [30/Apr/2019:16:17:42 +0000] "GET / HTTP/1.1" 200 11173 "-" "Mozilla/5.0 (Windows NT 10.0; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
17:02:10	61.219.11.153 - - [30/Apr/2019:17:02:05 +0000] "- 408 0 "-" -"
17:08:12	185.209.0.12 - - [30/Apr/2019:17:08:07 +0000] "0x03" 400 0 "-" -"
18:05:53	180.251.54.70 - - [30/Apr/2019:18:05:48 +0000] "GET / HTTP/1.1" 200 11229 "-" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_11_6) AppleWebKit/601.7.7 (KHTML, like Gecko) Version/12.0 Safari/537.36"
19:43:12	109.94.121.118 - - [30/Apr/2019:19:43:07 +0000] "GET / HTTP/1.1" 200 11173 "-" "Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:45	183.178.64.143 - - [30/Apr/2019:19:45:44 +0000] "GET /mysql/admin/index.php?lang=en HTTP/1.1" 404 458 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:45	183.178.64.143 - - [30/Apr/2019:19:45:44 +0000] "GET /mysql/dbadmin/index.php?lang=en HTTP/1.1" 404 460 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:46	183.178.64.143 - - [30/Apr/2019:19:45:45 +0000] "GET /mysql/sqlmanager/index.php?lang=en HTTP/1.1" 404 463 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:47	183.178.64.143 - - [30/Apr/2019:19:45:46 +0000] "GET /mysql/mysqlmanager/index.php?lang=en HTTP/1.1" 404 465 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:47	183.178.64.143 - - [30/Apr/2019:19:45:46 +0000] "GET /phpmyadmin/index.php?lang=en HTTP/1.1" 404 457 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:48	183.178.64.143 - - [30/Apr/2019:19:45:47 +0000] "GET /phpMyAdmin/index.php?lang=en HTTP/1.1" 404 457 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:48	183.178.64.143 - - [30/Apr/2019:19:45:48 +0000] "GET /phpMyAdmin/index.php?lang=en HTTP/1.1" 404 457 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:49	183.178.64.143 - - [30/Apr/2019:19:45:48 +0000] "GET /phpMyAdmin/index.php?lang=en HTTP/1.1" 404 457 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:50	183.178.64.143 - - [30/Apr/2019:19:45:49 +0000] "GET /phpmyadmin2/index.php?lang=en HTTP/1.1" 404 458 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:51	183.178.64.143 - - [30/Apr/2019:19:45:50 +0000] "GET /phpmyadmin3/index.php?lang=en HTTP/1.1" 404 458 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:51	183.178.64.143 - - [30/Apr/2019:19:45:50 +0000] "GET /phpmyadmin4/index.php?lang=en HTTP/1.1" 404 458 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:52	183.178.64.143 - - [30/Apr/2019:19:45:51 +0000] "GET /2phpmyadmin/index.php?lang=en HTTP/1.1" 404 458 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:52	183.178.64.143 - - [30/Apr/2019:19:45:52 +0000] "GET /wp-content/plugins/portable-phpmyadmin/wp-pma-mod/index.php?lang=en HTTP/1.1" 404 496 "
19:45:53	183.178.64.143 - - [30/Apr/2019:19:45:52 +0000] "GET /phpmy/index.php?lang=en HTTP/1.1" 404 452 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:54	183.178.64.143 - - [30/Apr/2019:19:45:53 +0000] "GET /ppphma/index.php?lang=en HTTP/1.1" 404 453 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:54	183.178.64.143 - - [30/Apr/2019:19:45:54 +0000] "GET /myadmin/index.php?lang=en HTTP/1.1" 404 454 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:55	183.178.64.143 - - [30/Apr/2019:19:45:54 +0000] "GET /shopdb/index.php?lang=en HTTP/1.1" 404 453 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:55	183.178.64.143 - - [30/Apr/2019:19:45:55 +0000] "GET /MyAdmin/index.php?lang=en HTTP/1.1" 404 454 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"
19:45:56	183.178.64.143 - - [30/Apr/2019:19:45:56 +0000] "GET /MyAdmin/index.php?lang=en HTTP/1.1" 404 454 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/72.0.3626.121 Safari/537.36"

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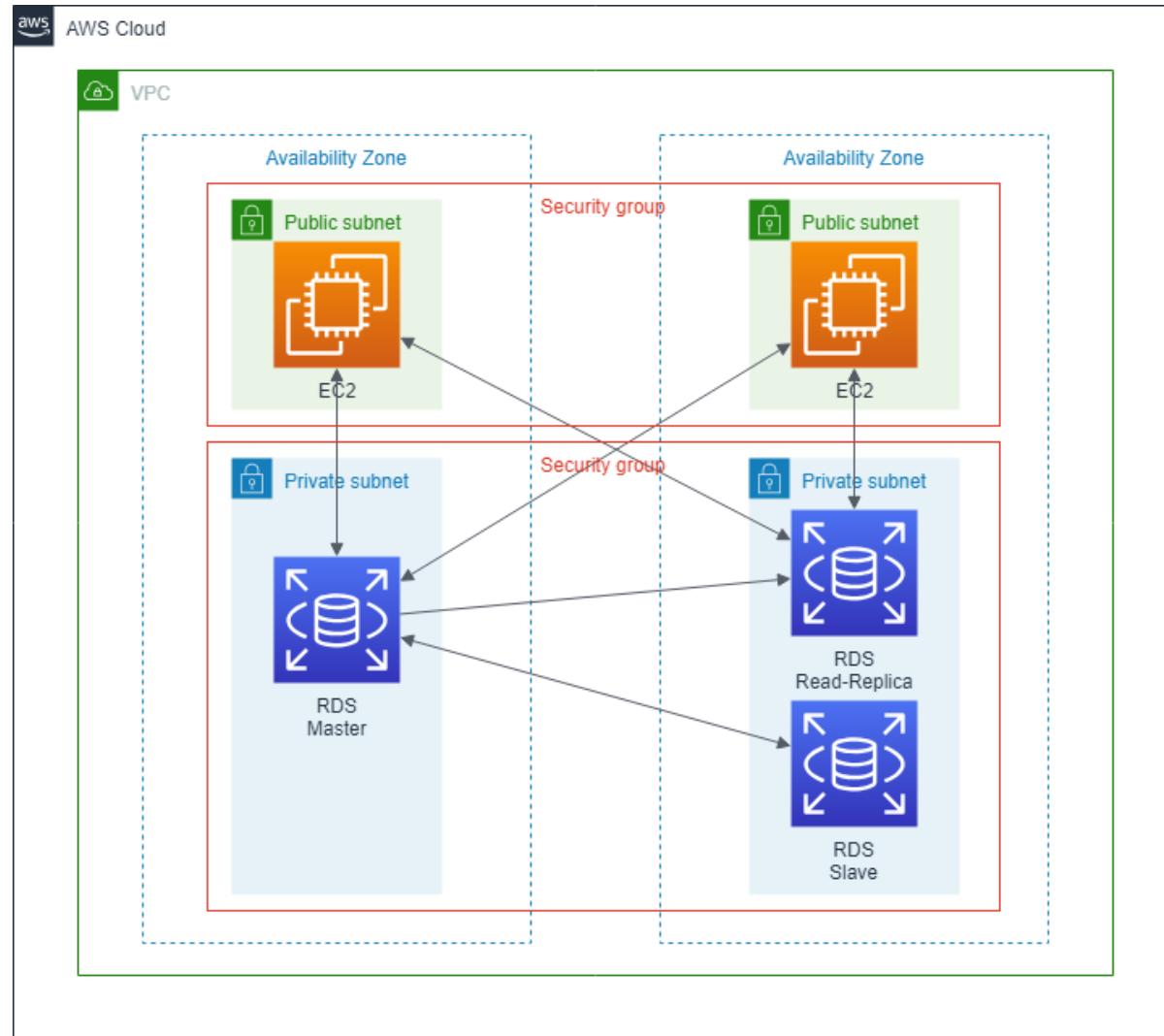


# AWS Database Migration

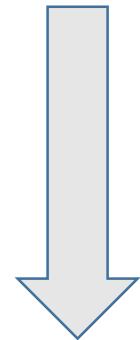


AWS Database Migration Service supports homogeneous migrations such as Oracle to Oracle, as well as heterogeneous migrations between different database platforms, such as Oracle or Microsoft SQL Server to Amazon Aurora. With AWS Database Migration Service, you can continuously replicate your data with high availability and consolidate databases into a petabyte-scale data warehouse by streaming data to Amazon Redshift and Amazon S3. [Learn more](#) about the supported source and target databases.

# RDS Read Replicas



\*Reduce the Load  
\*Increase the performance



Read Replicas

# AWS Regions



# EC2

If you want a self-managed database, that means you want complete control over the database engine and the underlying infrastructure. In such a case you need to host the database on an EC2 Instance.

## Quick summary of the options

Self-managed



Corporate data center

EC2 instances



DB on EC2 instance

Fully managed



RDS

# Amazon Inspector

## Welcome to Amazon Inspector



Amazon Inspector assessments check for security exposures and vulnerabilities in your EC2 instances. Learn more about [how Inspector functions](#).

Inspector uses a [Service-linked Role](#) to describe your EC2 instances and network configuration.

### Assessment Setup

You can use the options below to get the following assessments on all of your EC2 instances in this AWS region. Click **Run weekly** for the assessment to run at this time once a week starting now, **Run once** for a one-time assessment, or **Advanced setup** for custom assessments.

**Network Assessments** (Inspector Agent is not required)



- **Assessments performed:** Network configuration analysis to checks for ports reachable from outside the VPC. [Learn more](#)
- **Optional Agent:** If the Inspector Agent is installed on your EC2 instances, the assessment also finds processes reachable on port. Learn more about [Inspector Agent](#)
- **Pricing:** Pricing for [network assessments](#) is based on the monthly volume of instance-assessments, where an instance-assessment denotes a successful assessment of an instance. For example, for 100 instances assessed weekly, the monthly cost would be around \$61/month. [Learn more](#)

**Host Assessments** (Inspector Agent is required)

- **Assessments performed:** Vulnerable software (CVE), host hardening (CIS benchmarks), and security best practices. [Learn more](#)
- **Agent Deployment:** Inspector assessments require an agent to be installed on your EC2 instances. We will automatically install the agent for instances that allow System Manager Run Command. Learn more about [Inspector Agent](#) and [how to manually install agent](#).
- **Pricing:** Pricing for [host assessments](#) is based on the monthly volume of agent-assessments, where an agent-assessment denotes a successful assessment of an instance. For example, for 100 instances assessed weekly, the monthly cost would be around \$120/month. [Learn more](#)



**Run weekly (recommended)**

**Run once**

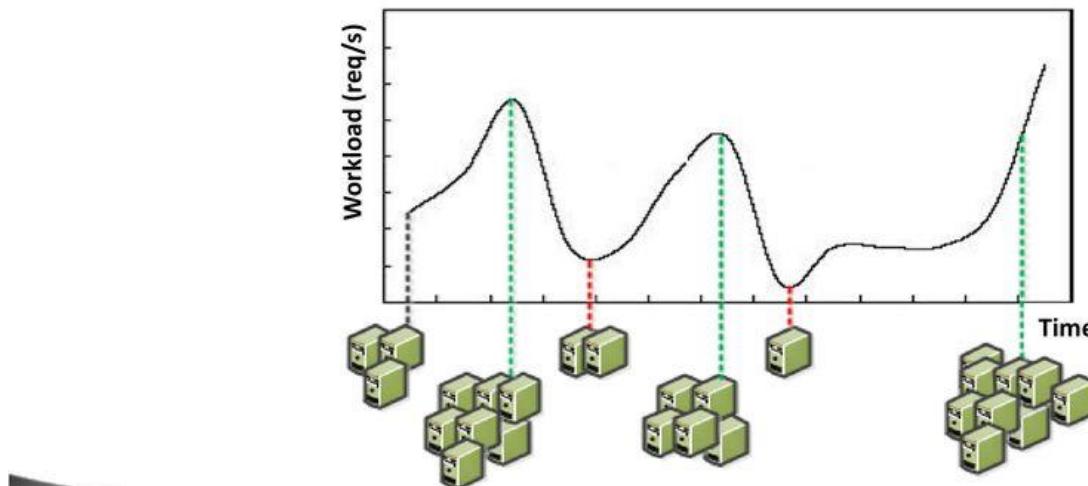
**Advanced setup**

**Cancel**

# Elasticity

## Elasticity in Cloud Computing

- Ability of a system to *expand* or *contract* its dedicated resources to meet the current demand



# Trusted Advisor

## Dashboard

[Cost Optimizing](#)[Performance](#)[Security](#)[Fault Tolerance](#)[Preferences](#)

## Trusted Advisor Dashboard

[Download](#) 

### Cost Optimizing



1 6 0

\$2,528.46

Potential monthly savings

### Performance



6 2 0

### Security



2 3 4

### Fault Tolerance



5 6 2

### Recent Changes



[Amazon EC2 Availability Zone Balance](#)

7/28/14

### What's New

Check: [Service Limits check improvements](#)

Check: [AWS CloudTrail and 4 Amazon Route 53 checks](#)

Check: [CloudFront Content Delivery Optimization](#)

Feature: [AWS Trusted Advisor notifications](#)

# DynamoDB



## Amazon DynamoDB

Amazon DynamoDB is a fast and flexible NoSQL database service for all applications that need consistent, single-digit millisecond latency at any scale. Its flexible data model and reliable performance make it a great fit for mobile, web, gaming, ad-tech, IoT, and many other applications.

[Create table](#)

Getting started guide



Create tables      Add and query items      Monitor and manage tables

# TCO

AWS Total Cost of Ownership (TCO) Calculator

Contact Sales

Basic

Use this calculator to compare the cost of running your applications in an on-premises or colocation environment to AWS. Describe your on-premises or colocation configuration to produce a detailed cost comparison with AWS. You can switch between the basic and advanced views to provide additional configuration details.

Select Currency: United States Dollar

What type of environment are you comparing against?  On-Premises  Colocation

Which AWS region is ideal for your geo requirements? US East (N. Virginia)

Choose workload type: General

Servers

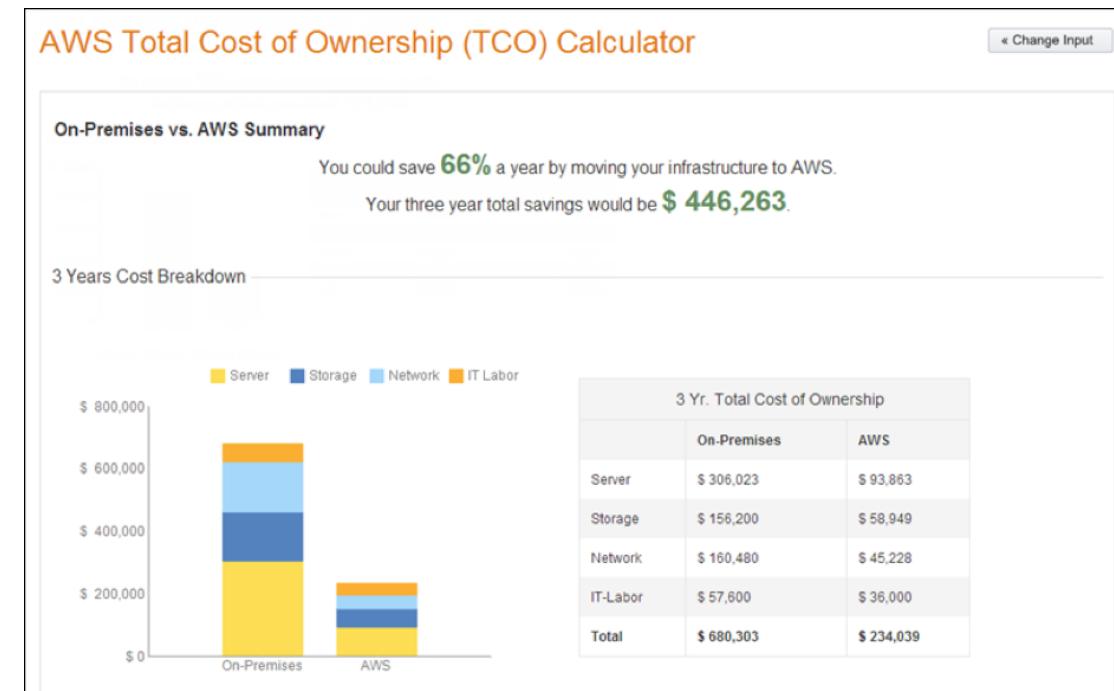
Are you comparing physical servers or virtual machines?  Physical Servers  Virtual Machines

Provide your configuration details:

Server Type	App. Name	Number of VMs	CPU Cores	Memory(GB)	Hypervisor	Guest OS	DB Engine
Non DB		1 - 10000	1 - 32	1 - 256	VMware	Linux	

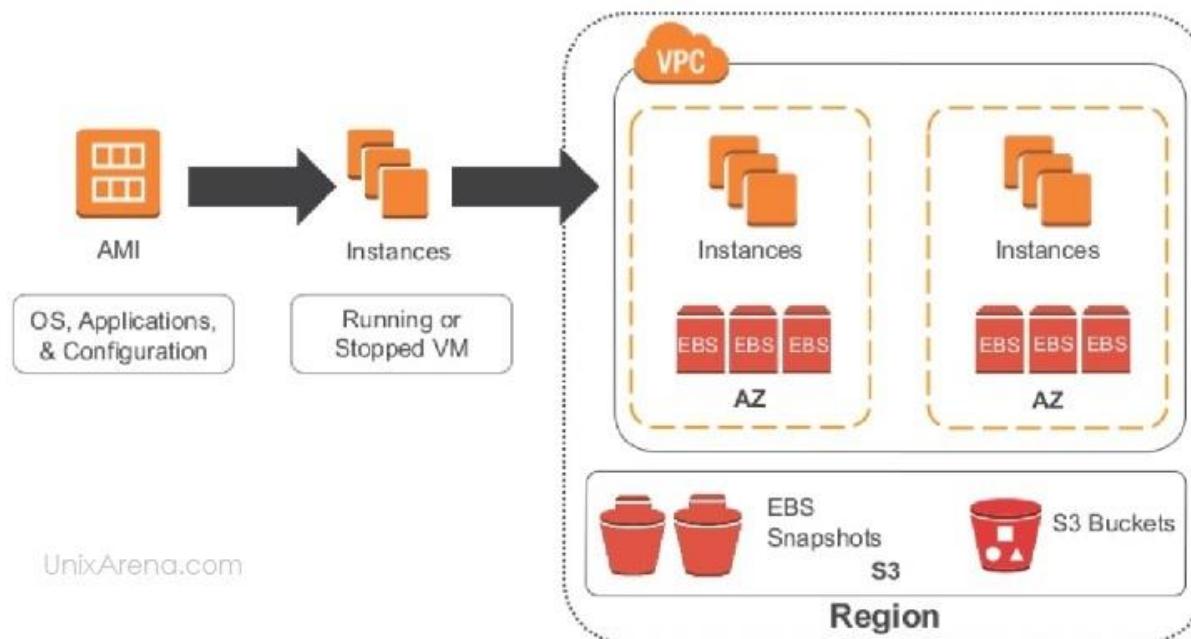
Total no.of VMs:

+ Add Row

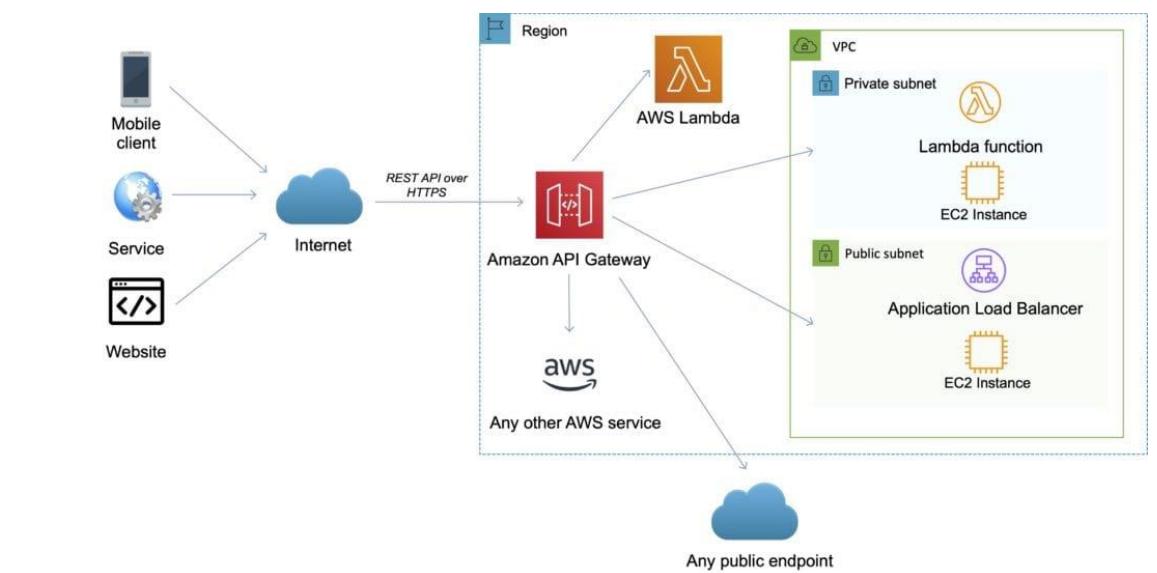
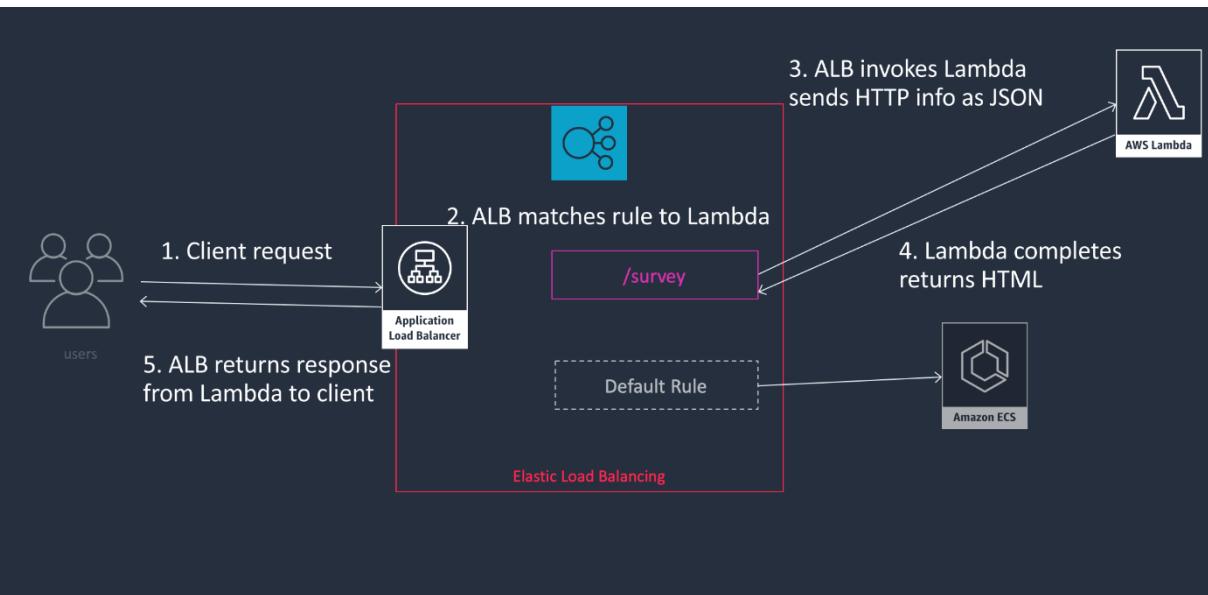


# EBS Volume

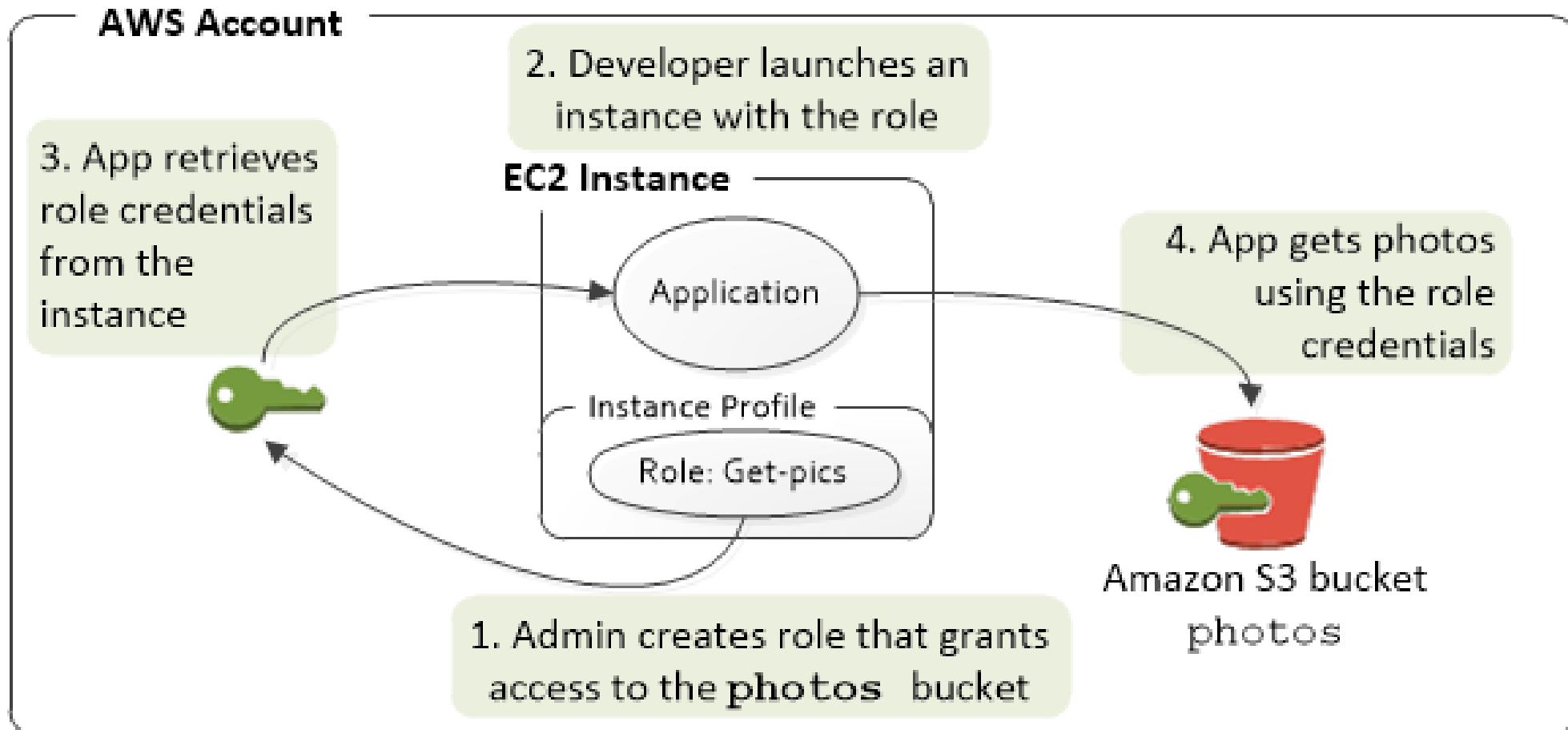
When you create an EBS volume in an Availability Zone, it is automatically replicated within that zone to prevent data loss due to failure of any single hardware component.



# ALB



## EC2-IAM-S3



## DynamoDB Read Consistency

	Eventual Consistency	Strong consistency
Consistency	Propagation of latest update might take a few ms longer. It is possible to miss the latest update	You always read the latest update
Performance	Fastest possible reads	Slower than eventually consistent reads
Cost	Cheapest possible reads. Two eventually consistent reads cost 1 RCU	Twice as expensive as eventually consistent reads. Each strongly consistent read cost 1 RCU

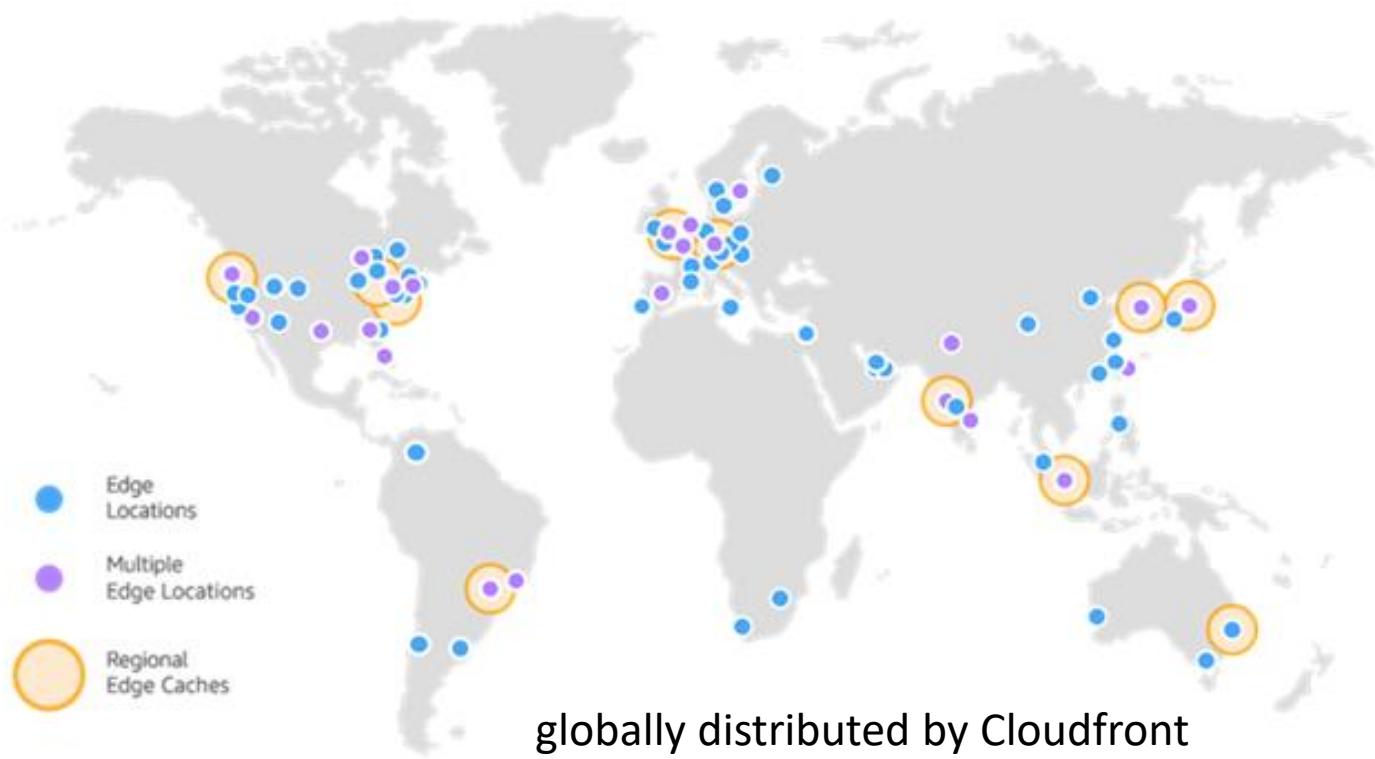
### Eventually Consistent Reads:

When you read data from a DynamoDB table, the response might not reflect the results of a recently completed write operation. The response might include some stale data. If you repeat your read request after a short time, the response should return the latest data.

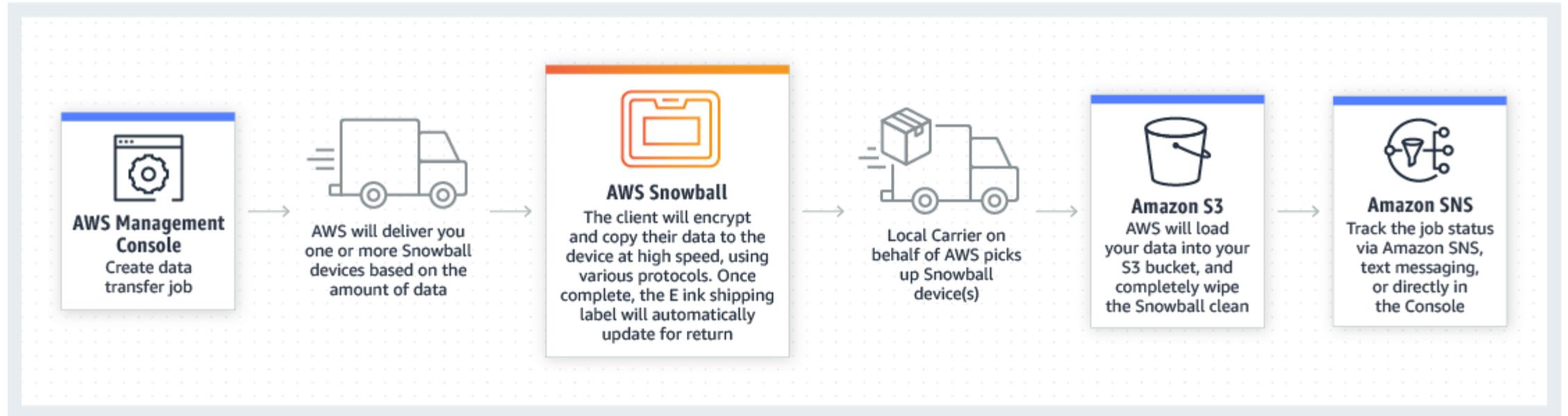
### Strongly Consistent Reads:

When you request a strongly consistent read, DynamoDB returns a response with the most up-to-date data, reflecting the updates from all prior write operations that were successful.

## Cloudfront AWS Shield



# AWS Snowball



## AWS Snowball

Petabyte-scale data transport



- Rugged 8.5G impact case
- Rain and dust resistant
- Data encryption end-to-end
- 80 TB capacity/10G network



physical storage devices to transfer large amounts of data

# Serverless Services on AWS

## Compute



**AWS Lambda**



**Amazon Fargate**

## Application Integration



**Amazon EventBridge**



**AWS Step Functions**



**Amazon SQS**



**Amazon SNS**



**Amazon API Gateway**



**AWS AppSync**

## Data Store



**Amazon Aurora Serverless**



**Amazon S3**



**Amazon DynamoDB**



**Amazon RDS Proxy**

# Disaster Recovery

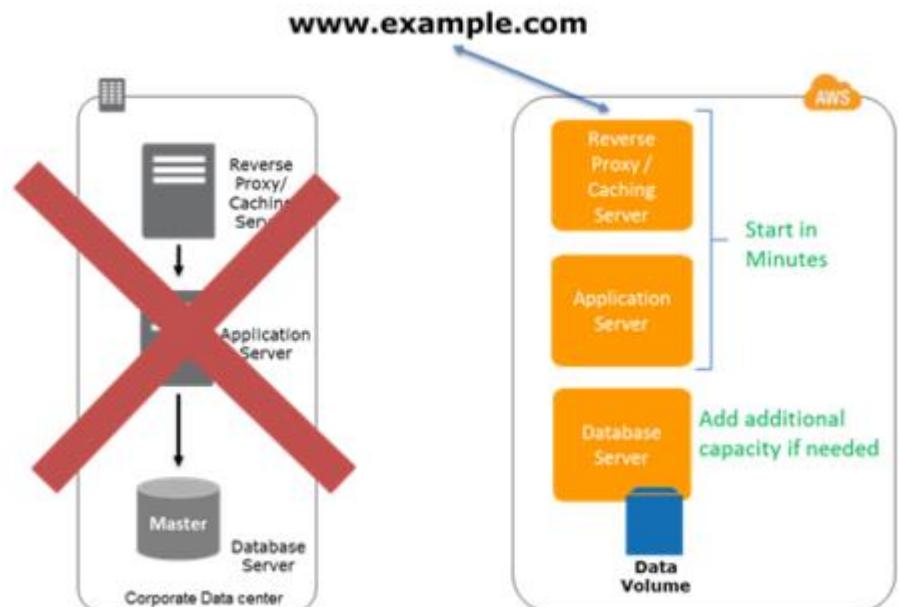


Figure 4: The recovery phase of the Pilot light scenario.

## Example Disaster Recovery Scenarios with AWS

- There are four DR scenarios that highlight the use of AWS.
- The following figure shows a spectrum for the four scenarios, arranged by how quickly a system can be available to users after a DR event.

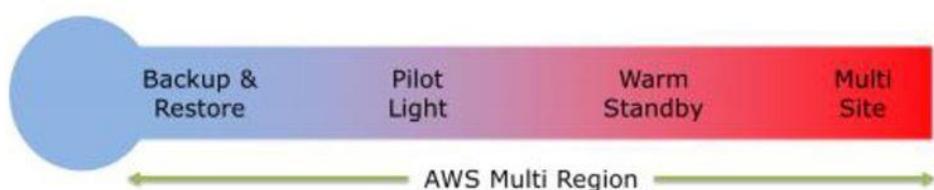


Figure 1: Spectrum of Disaster Recovery Options

# Amazon Inspector



The screenshot shows the AWS Amazon Inspector console. At the top, there's a navigation bar with 'AWS', 'Services', 'Edit', 'Jeff Barr', 'Oregon', and 'Support'. Below the header, there's a large 'Amazon Inspector' logo with a download icon. A descriptive text block says: 'Amazon Inspector enables you to analyze the behavior of the applications you run in AWS and helps you identify potential security issues.' It includes a 'Get started' button. Below this, there are three main sections: 'Install' (with a monitor icon), 'Run' (with a monitor and clock icon), and 'Analyze' (with a person and eye icon). Each section has a brief description and a 'Learn more' link.

Amazon Inspector

Amazon Inspector enables you to analyze the behavior of the applications you run in AWS and helps you identify potential security issues.

Get started

Install

Run

Analyze

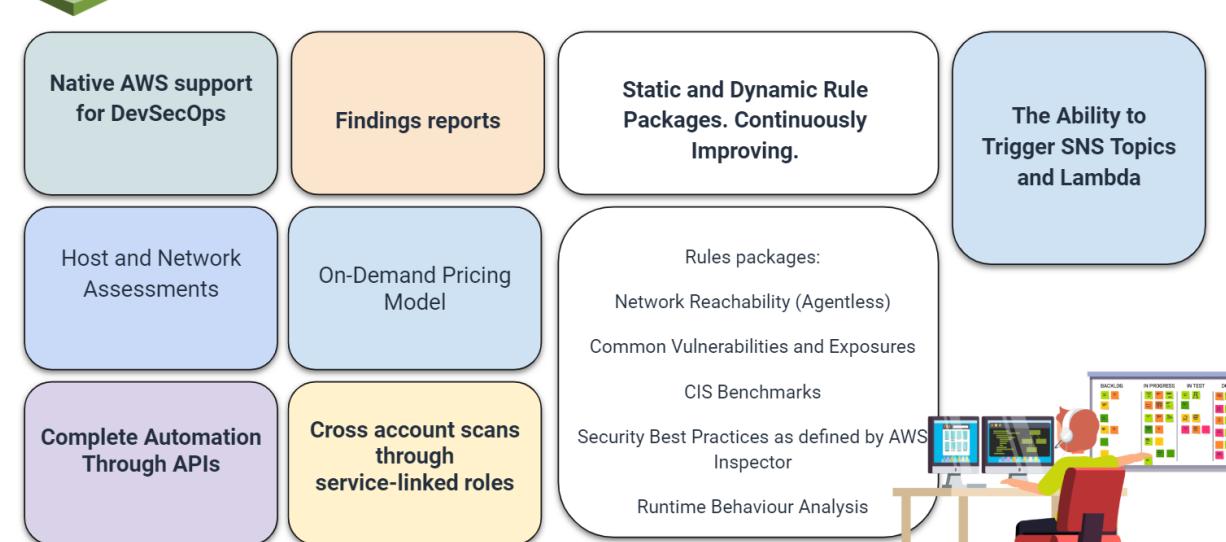
Install Inspector agent on your EC2 instances.  
[Learn more](#)

Run an assessment for your application.  
[Learn more](#)

Review your findings and remediate security issues.  
[Learn more](#)



## AWS Inspector Overview





## Deploying a Static Website with AWS Amplify and CDK



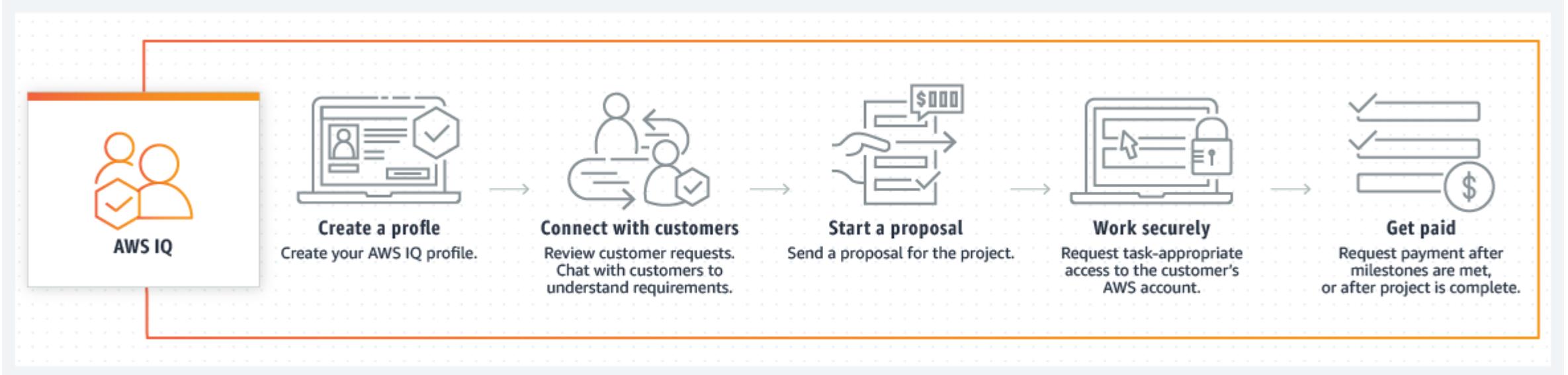
**Connect your Repository**  
Connect your source code from a Git repository or upload files in the Amplify console.



**Configure Build Settings**  
Confirm build settings for the front end and backend from the Amplify console.



**Deploy your App**  
Amplify deploys your app directly from the console to a globally available content delivery network (CDN).





**Aidan Hoolachan**  
★★★★★ 5.0 (10 reviews)

- Solutions Architect – Associate
- Developer – Associate

Aidan has five years experience building complex cloud applications for mobile backends, image processing pipelines, high-performance computing, text processing, and business analytics.



**Ademola Sanusi**  
★★★★★ 4.8 (5 reviews)

- Solutions Architect – Associate

Ademola Sanusi specializes in creating secure, highly available and cost efficient environments in the AWS cloud that meet all modern compliance standards

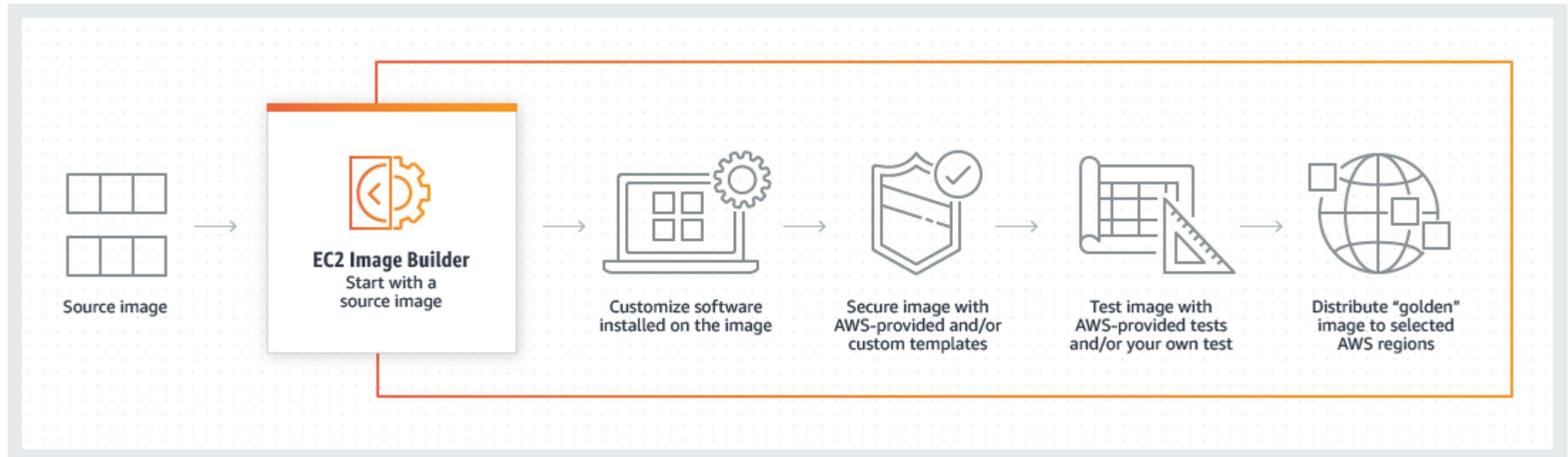


**Warren Enslin**  
★★★★★ 4.9 (7 reviews)

- Solutions Architect – Associate
- SysOps Administrator – Associate
- Solutions Architect – Professional
- DevOps Engineer – Professional

Warren has over 20 years of IT experience and five years of hands-on experience with AWS. Warren has implemented and managed continuous delivery systems and methodologies on AWS.





Management &amp; Governance

# AWS Control Tower

## Set up and govern your multi-account AWS environment

Gain control over your AWS environment with prescriptive guidance.

### How it works



**Automated setup**  
Set up an automated landing zone with best practices blueprints.



**Policy management**  
Enable pre-packaged guardrails to enforce policies or detect violations.



**Dashboard for visibility**  
Get continuous visibility into how your workloads comply with guardrails.

### Benefits and features

#### Automated landing zone

Automate the setup of a well-architected multi-account environment and customize

#### Guardrails for governance

Ensure that your provisioned resources always conform to your policies

### AWS Control Tower setup

Set up your well-architected automated landing zone.

[Set up landing zone](#)

### Pricing (US)

There is no additional charge for using AWS Control Tower. You only pay for AWS services enabled by AWS Control Tower.

[Learn more](#)

### Underlying services

[AWS Organizations](#)

[AWS Service Catalog](#)

[AWS Single Sign-on](#)

[AWS Config](#)

[AWS CloudFormation](#)

▶ [View all underlying services](#)



- \* Run AWS infrastructure & services on-premise for consistent hybrid experience.
- \* Solution for hybrid...



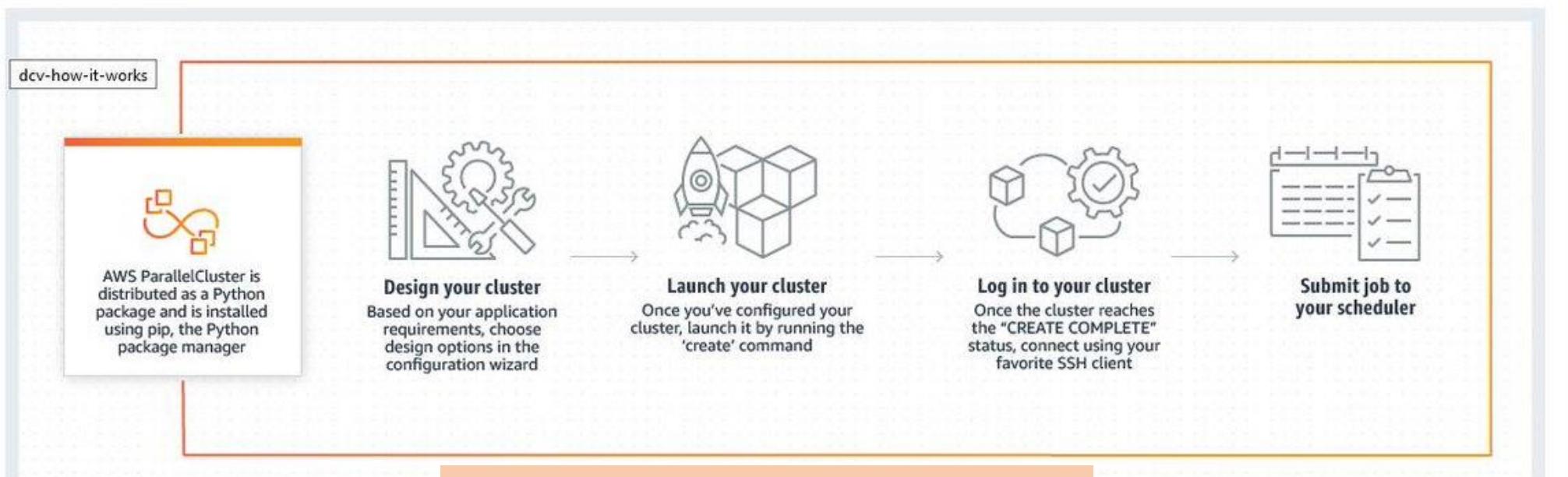
# AWS ParallelCluster

Quickly build HPC compute environments on AWS

[Download AWS ParallelCluster](#)

## How it works

### Cluster Management, Deploy & Manage HPC

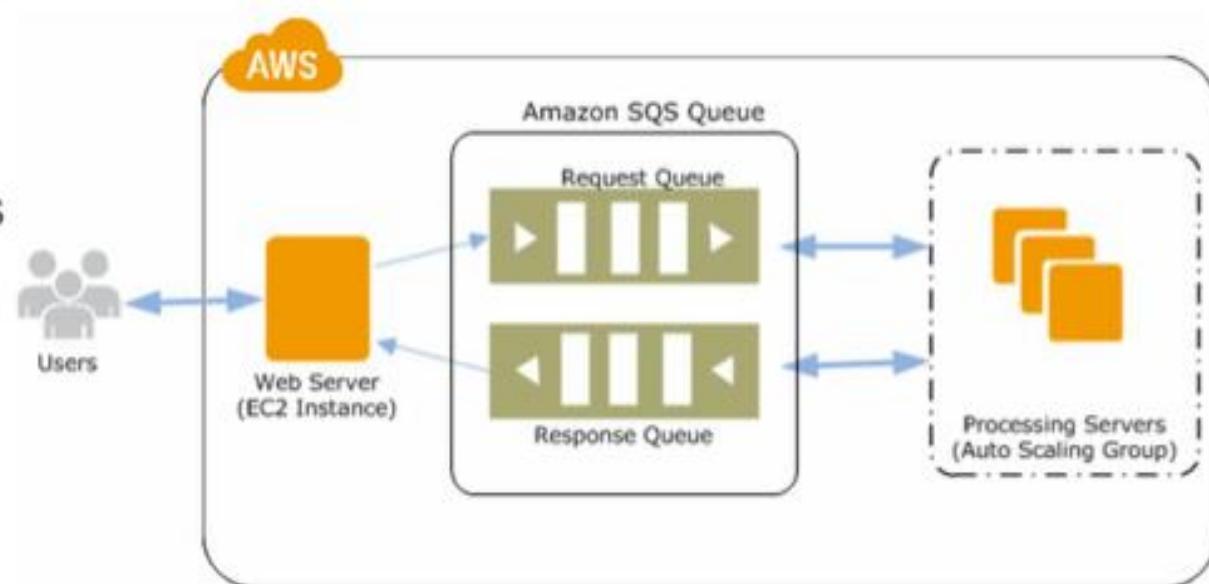


## SQS

# What is Amazon Simple Queue Service?

[PDF](#) | [Kindle](#) | [RSS](#)

Amazon Simple Queue Service (Amazon SQS) offers a secure, durable, and available hosted queue that lets you integrate and decouple distributed software systems and components. Amazon SQS offers common constructs such as [dead-letter queues](#) and [cost allocation tags](#). It provides a generic web services API and it can be accessed by any programming language that the AWS SDK supports.



# Inspector

## What is Amazon Inspector?

[PDF](#) | [Kindle](#) | [RSS](#)

Amazon Inspector tests the network accessibility of your Amazon EC2 instances and the security state of your applications that run on those instances. Amazon Inspector assesses applications for exposure, vulnerabilities, and deviations from best practices. After performing an assessment, Amazon Inspector produces a detailed list of security findings that is organized by level of severity.

### Benefits of Amazon Inspector

- Identify Application Security Issues
- Integrate Security Into DevOps
- Increase Development Agility
- Leverage AWS Security Expertise
- Streamline Security Compliance
- Enforce Security Standards

## AWS Trusted Advisor

**Trusted Advisor** Beta

AWS Trusted Advisor checks your configuration and usage of Amazon Web Services, compares the results to best practices, and alerts you to opportunities to save money, close security gaps, and improve system reliability and performance.

**Cost Optimizing**  
Suppressed resources: 0



\$69,013  
in potential monthly savings

**Security**  
Suppressed resources: 0



**Fault Tolerance**  
Suppressed resources: 0



**Performance**  
Suppressed resources: 0



CloudFront Content Delivery Optimization Summary:  
11 of 42 Amazon S3 buckets might benefit from the use of Amazon CloudFront.

What's New    Cost Optimizing    Security    Fault Tolerance    Performance

✓ No problems detected    ⚠ Investigation recommended    ❗ Action recommended    💬 Not available

New Features

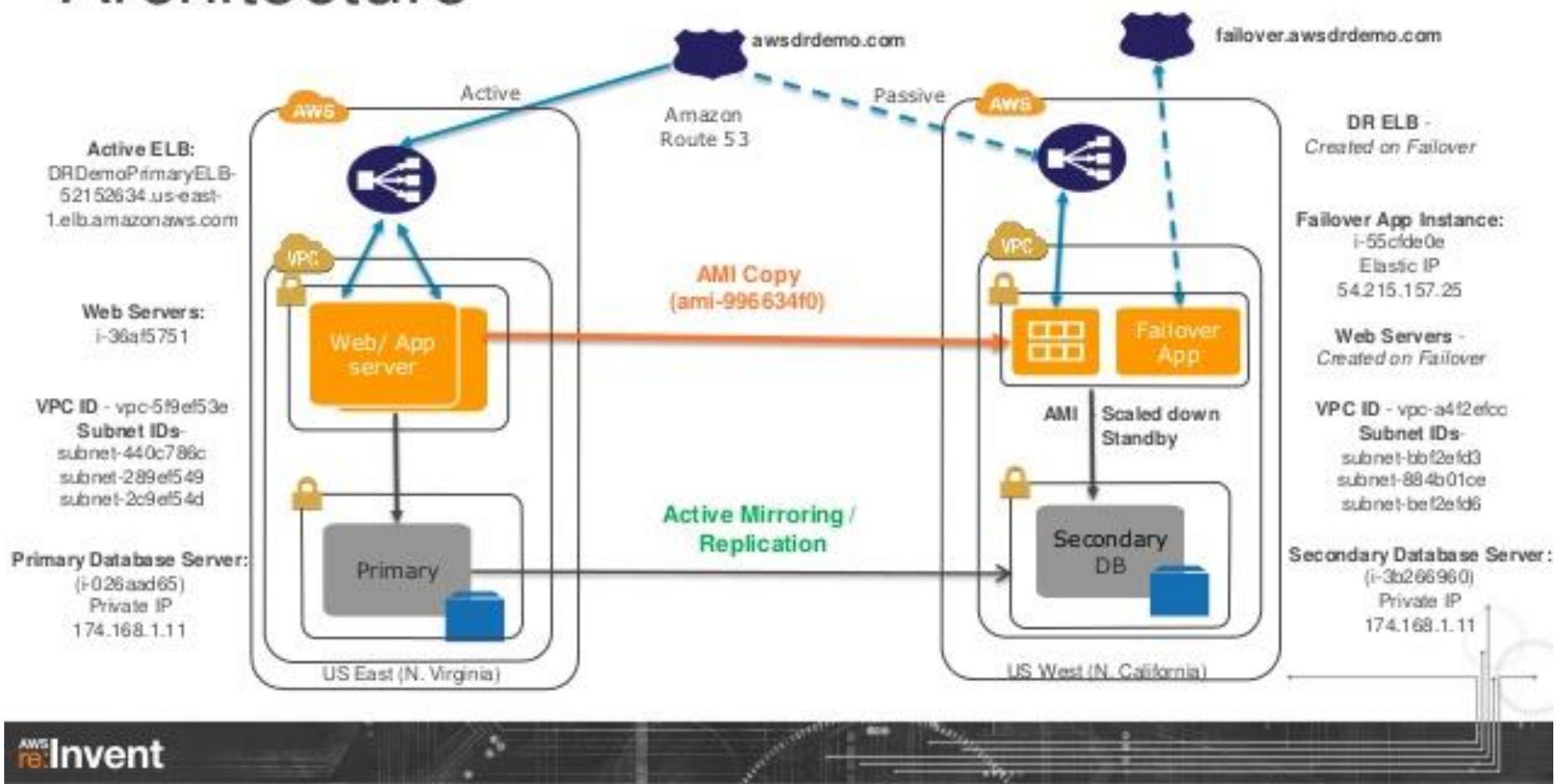
Notification settings: Receive weekly email summaries of Trusted Advisor results and cost savings estimates.

Recently Released Checks

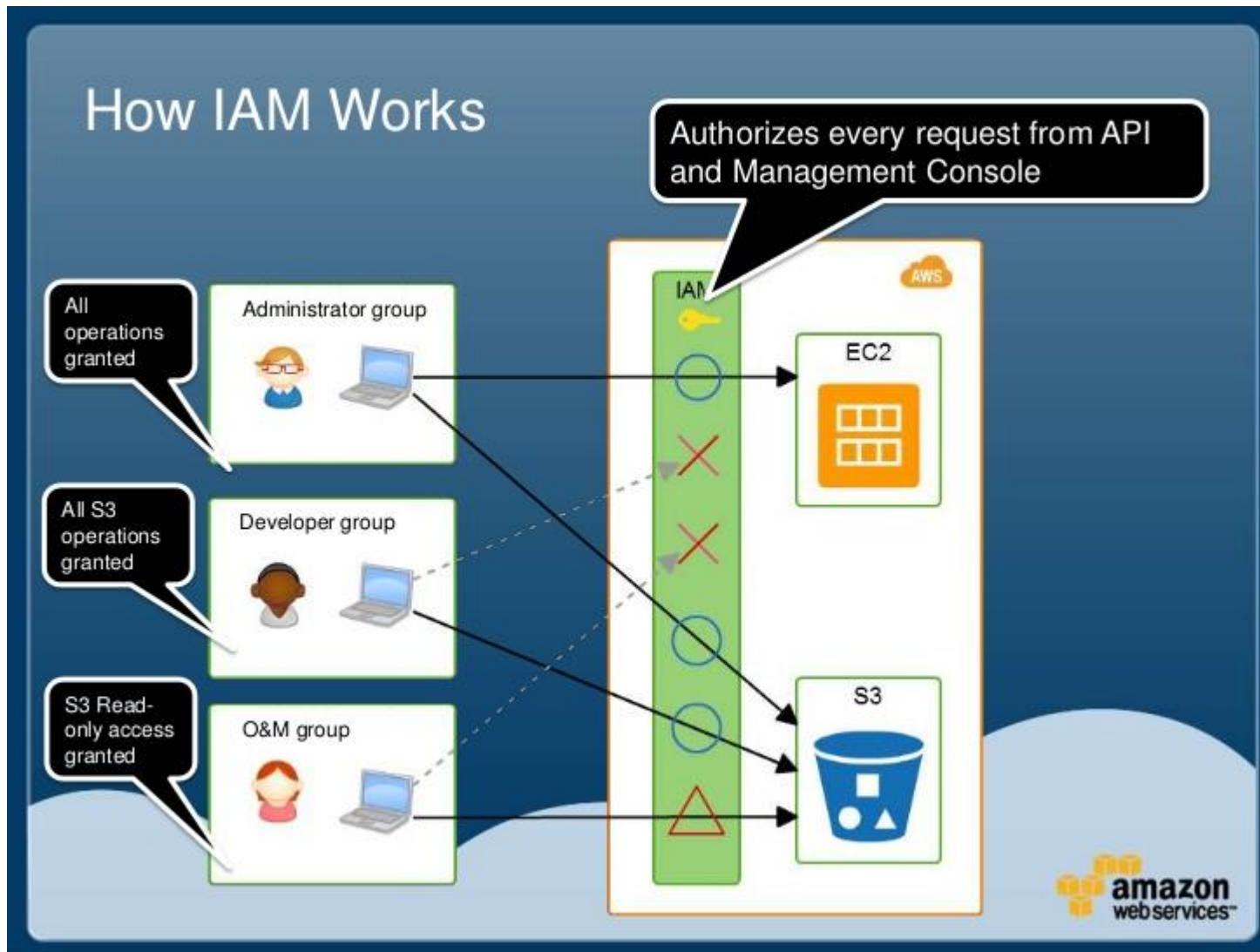
<span style="color: orange;">New</span>	Overutilized Standard Amazon EBS Volumes	<span style="color: green;">✓</span> 0 of 336 standard Amazon EBS volumes are potentially overutilized and might benefit from a more efficient configuration.
<span style="color: orange;">New</span>	CloudFront Content Delivery Optimization	<span style="color: red;">❗</span> 11 of 42 Amazon S3 buckets might benefit from the use of Amazon CloudFront.

# Disaster Recovery with R53

## Architecture



# AWS IAM



## AWS IAM

# AWS WAF & AWS Shield

9:05 AM Fri May 31

[console.aws.amazon.com](#)


## AWS WAF and AWS Shield

AWS WAF and AWS Shield help protect your AWS resources from web exploits and DDoS attacks



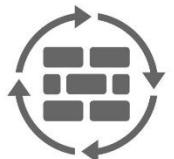
### AWS WAF

AWS WAF is a web application firewall service that helps protect your web apps from common exploits that could affect app availability, compromise security, or consume excessive resources.

[Go to AWS WAF](#)


### AWS Shield

AWS Shield provides expanded DDoS attack protection for your AWS resources. Get 24/7 support from our DDoS response team and detailed visibility into DDoS events.

[Go to AWS Shield](#)


### AWS Firewall Manager

AWS Firewall Manager simplifies your AWS WAF administration and maintenance tasks across multiple accounts and resources.

[Go to AWS Firewall Manager](#)

11:30 AM Sun Jun 2

[console.aws.amazon.com](#)

### Features

### AWS Shield Standard

### AWS Shield Advanced

#### Active monitoring

Network flow monitoring



Automated application (layer 7) traffic monitoring



#### DDoS mitigations

Helps protect from common DDoS attacks, such as SYN floods and UDP reflection attacks



Access to additional DDoS mitigation capacity



#### Visibility and reporting

Layer 3/4 attack notification and attack forensic reports



Layer 3/4/7 attack historical report

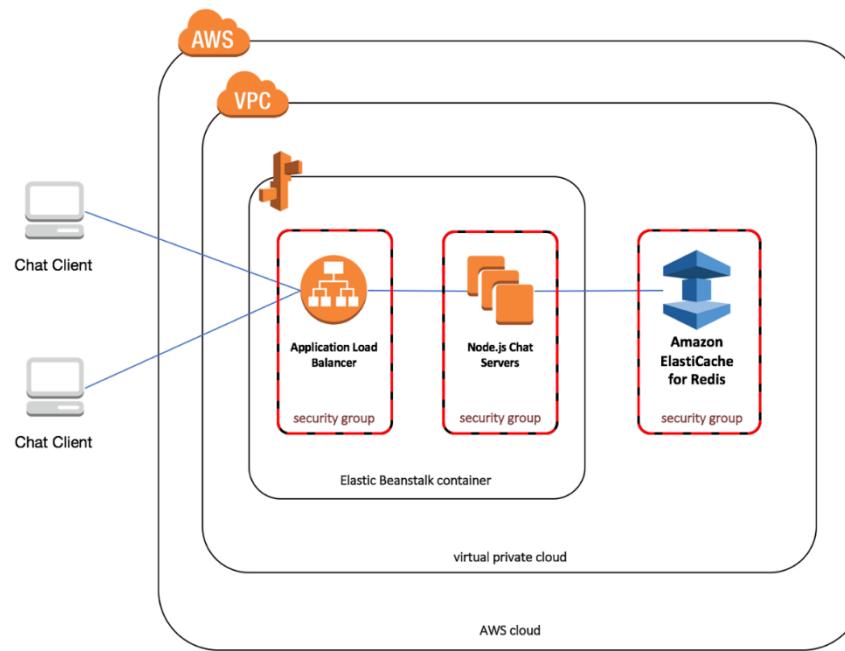


#### DDoS response team support

Incident management during high severity events



# ElastiCache



# Route53 TTL

## TTL (seconds)

The amount of time, in seconds, that you want DNS recursive resolvers to cache information about this record. If you specify a longer value (for example, 172800 seconds, or two days), you reduce the number of calls that DNS recursive resolvers must make to Route 53 to get the latest information in this record. This has the effect of reducing latency and reducing your bill for Route 53 service. For more information, see [How Amazon Route 53 routes traffic for your domain](#).

The screenshot shows the AWS Route 53 console interface. On the left, there's a navigation sidebar with options like Dashboard, Hosted Zones (which is selected and highlighted in orange), Health Checks, Domains, Registered Domains, and Pending Requests. The main area displays a list of records for the domain 'domenech.org.' under a 'Hosted Zones' tab. One specific record, 'domenech.org.' of type NS, is selected and highlighted with a red box. To the right of the list, there's an 'Edit Record Set' panel for this selected record. In this panel, the 'Name' field is set to 'domenech.org.', the 'Type' is 'NS – Name server', and the 'Value' field contains four name servers: 'ns-1322.awsdns-37.org.', 'ns-1615.awsdns-09.co.uk.', 'ns-238.awsdns-29.com.', and 'ns-912.awsdns-50.net.'. Below these fields, the 'TTL (Seconds)' input field is set to '+1h', which is also highlighted with a red box. The 'Routing Policy' dropdown is set to 'Simple'. At the bottom of the panel, there's a note: 'Route 53 responds to queries based only on the values in this record. [Learn More](#)'.

# HTTP Status Codes

1XX Informational	
<b>100</b>	Continue
<b>101</b>	Switching Protocols
<b>102</b>	Processing
2XX Success	
<b>200</b>	OK
<b>201</b>	Created
<b>202</b>	Accepted
<b>203</b>	Non-authoritative Information
<b>204</b>	No Content
<b>205</b>	Reset Content
<b>206</b>	Partial Content
<b>207</b>	Multi-Status
<b>208</b>	Already Reported
<b>226</b>	IM Used
3XX Redirectional	
<b>300</b>	Multiple Choices
<b>301</b>	Moved Permanently
<b>302</b>	Found
<b>303</b>	See Other
<b>304</b>	Not Modified
<b>305</b>	Use Proxy
<b>307</b>	Temporary Redirect
<b>308</b>	Permanent Redirect
4XX Client Error	
<b>400</b>	Bad Request
<b>401</b>	Unauthorized
<b>402</b>	Payment Required
<b>403</b>	Forbidden
<b>404</b>	Not Found
<b>405</b>	Method Not Allowed
<b>406</b>	Not Acceptable
<b>407</b>	Proxy Authentication Required
<b>408</b>	Request Timeout
4XX Client Error Continued	
<b>409</b>	Conflict
<b>410</b>	Gone
<b>411</b>	Length Required
<b>412</b>	Precondition Failed
<b>413</b>	Payload Too Large
<b>414</b>	Request-URI Too Long
<b>415</b>	Unsupported Media Type
<b>416</b>	Requested Range Not Satisfiable
<b>417</b>	Expectation Failed
<b>418</b>	I'm a teapot
<b>421</b>	Misdirected Request
<b>422</b>	Unprocessable Entity
<b>423</b>	Locked
<b>424</b>	Failed Dependency
<b>426</b>	Upgrade Required
<b>428</b>	Precondition Required
<b>429</b>	Too Many Requests
<b>431</b>	Request Header Fields Too Large
<b>444</b>	Connection Closed Without Response
<b>451</b>	Unavailable For Legal Reasons
<b>499</b>	Client Closed Request
5XX Server Error	
<b>500</b>	Internal Server Error
<b>501</b>	Not Implemented
<b>502</b>	Bad Gateway
<b>503</b>	Service Unavailable
<b>504</b>	Gateway Timeout
<b>505</b>	HTTP Version Not Supported
<b>506</b>	Variant Also Negotiates
<b>507</b>	Insufficient Storage
<b>508</b>	Loop Detected
<b>510</b>	Not Extended
<b>511</b>	Network Authentication Required
<b>599</b>	Network Connect Timeout Error

HTTP STATUS CODES

When a browser requests a service from a web server, an error may occur.  
This is a list of HTTP status messages that might be returned.

## HTTP Status :

- **1xx: Information**
- **2xx: Successful**
- **3xx: Redirection**
- **4xx: Client Error**
- **5xx: Server Error**

# Aurora

## Features of Amazon Aurora



## ELB

Target group: my-alb-targets

Description Targets **Health checks** Monitoring Tags

Protocol	(i)	HTTP
Path	(i)	/
Port	(i)	traffic port
Healthy threshold	(i)	5
Unhealthy threshold	(i)	2
Timeout	(i)	5
Interval	(i)	30
Success codes	(i)	200

Edit health check

Since the health check runs every 30 seconds and the instance goes down one second into the cycle, it means 29 seconds will lapse before a new health check is run. Additionally, it will take 5 more seconds of the ELB instance probing the instance that is down, upon getting no response, it would then fail the health check.

Therefore,  $29 + 5$  seconds = 34 seconds



S3



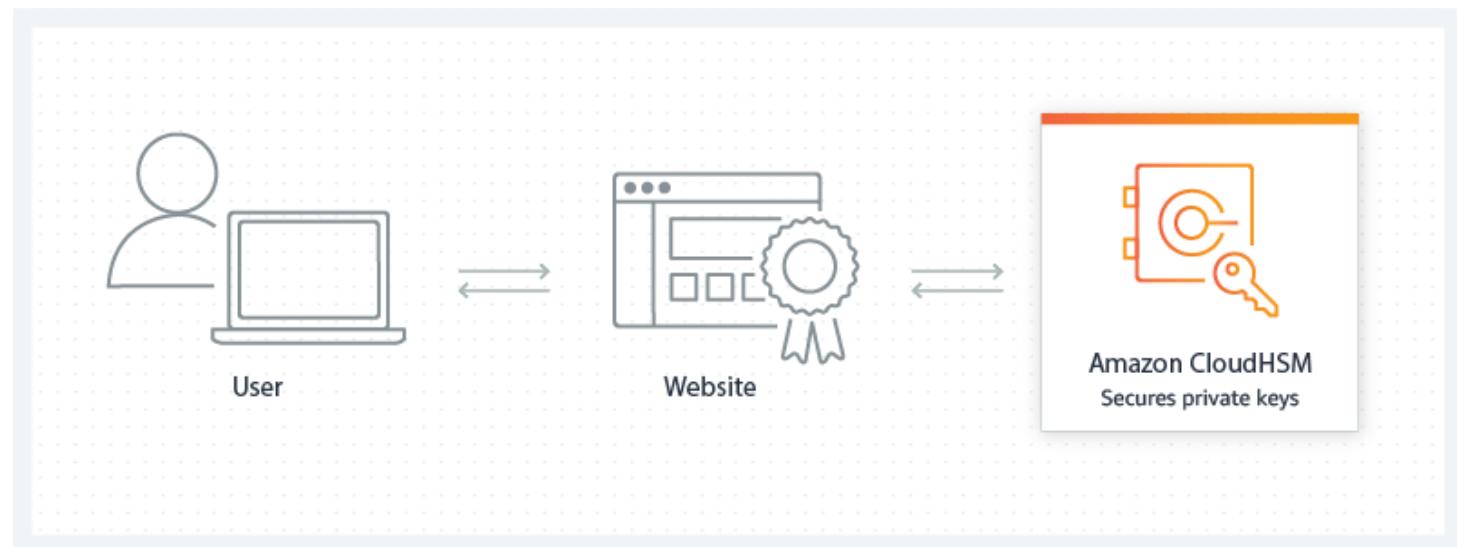
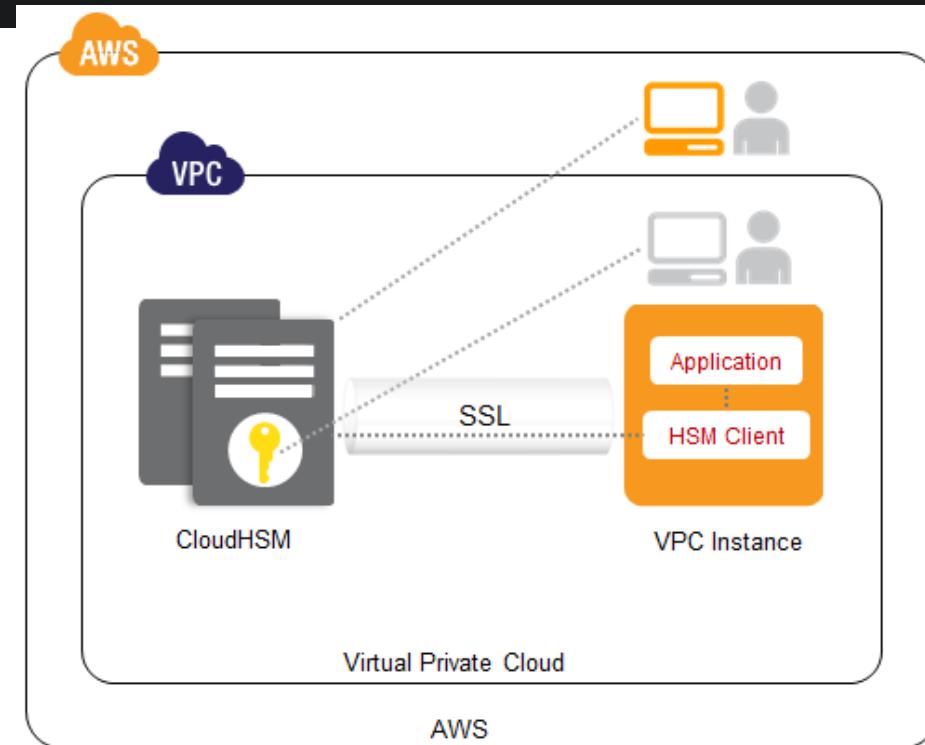
- **Lifecycle Management** objects can be moved between storage classes or objects can be deleted automatically based on a Schedule.
- S3 has 6 different **Storage Class**:
- **Standart**, 99.99% availability, 11 9' durability. Replicated across at least three AZs
- **Intelligent Tiering** uses ML to analyze your object usage and determine the appropriate storage class. Data is moved to the most cost-effective access tier, without any performance impact or added overhead
- **Standart Infrequent Accessed (IA)**, cheaper if you access files less than once a month. An additional retrieval fee is applied. 50% less than Standart (reduced availability)
- **One Zone IA**, objects only exist one AZ. Availability (is 99.5%). but cheaper than Standart IA by 20% less (Reduce durability). Data could get destroyed. A retrieval fee is applied.
- **Glacier** for long-term cold storage. Retrieval of data can take minutes to hours but the off is very cheap storage
- **Glacier Deep Archive** the lowest cost storage class. Data retrieval time is 12 hours.

# EFS

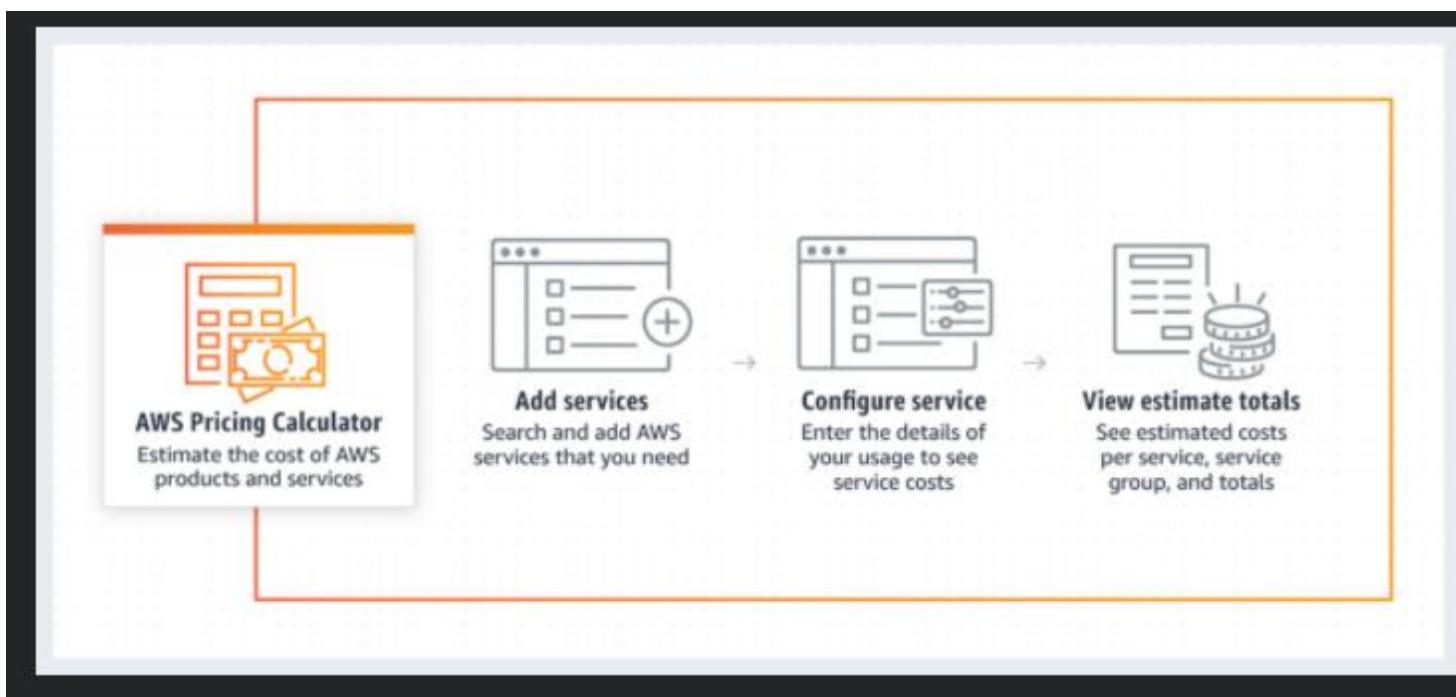
- EFS is a fully-managed service that makes it easy to set up and scale file storage in the Amazon Cloud.
- Elastic File System (EFS) supports the **Network File System (NFS)** protocol
- You pay GB of storage per month
- EFS can scale up to petabyte size storage
- Your data is stored across multiple AZs within a region
- Multiple EC2 instances can mount to a single EFS (as long as they are all in the same VPC). it can concurrently connect 1 to 1000s of EC2 instances, from multiple AZs.
- Good for big data and analytics, media processing workflows, content management, web serving, home directories etc.
- EFS offers the ability to encrypt data at rest and in transit. Encryption keys are managed by the AWS Key Management Service (KMS).
- **EFS File Sync** provides a fast and simple way to securely sync existing file systems into Amazon EFS.
- EFS File Sync copies files and directories into Amazon EFS at speeds up to 5x faster than standard Linux copy tools, with simple setup and management in the AWS Console.
- EFS File Sync securely and efficiently copies files over the internet or an AWS Direct Connect connection.
- Amazon EFS is well suited to support a broad spectrum of use cases from highly parallelized, scale-out workloads that require the highest possible throughput to single-threaded, latency-sensitive workloads. Use cases such as lift-and-shift enterprise applications, big data analytics, web serving and content management, application development and testing, media and entertainment workflows, database backups, and container storage.

## HSM (Hardware Security Model)

AWS CloudHSM is a cloud-based hardware security module (HSM) that enables you to easily generate and use your own encryption keys on the AWS Cloud. With CloudHSM, you can manage your own encryption keys using FIPS 140-2 Level 3 validated HSMs. CloudHSM offers you the flexibility to integrate with your applications using industry-standard APIs, such as PKCS#11, Java Cryptography Extensions (JCE), and Microsoft CryptoAPI (CNG) libraries.



# AWS Pricing Calculator



My estimate <small>Info</small>					
		First 12 months total		7,956.48 USD	
		Up front	Monthly	0.00 USD	663.04 USD
<b>West Coast Servers</b> Region: US West (Oregon)					
		<a href="#">Add service</a>	<a href="#">Edit Region</a>	<a href="#">Action ▾</a>	
<b>Amazon EC2</b>					
1 t3.xlarge Linux instance with a consistent workload		Up front	0.00 USD	Monthly	76.14 USD
<b>Amazon EBS</b>					
30 GB General Purpose SSD (gp2)		Up front	0.00 USD	Monthly	3.00 USD
<b>Amazon EC2</b>					
5-10 t3.xlarge Linux instances with a daily workload		Up front	0.00 USD	Monthly	543.56 USD
<b>Amazon EBS</b>					
30 GB General Purpose SSD (gp2) with 2x daily snapshots		Up front	0.00 USD	Monthly	38.34 USD
<b>Data Transfer</b>					
Outbound: 100 GB		Up front	0.00 USD	Monthly	2.00 USD
<b>Group total</b>					
		Up front	0.00 USD	Monthly	663.04 USD

## SSL/TLS

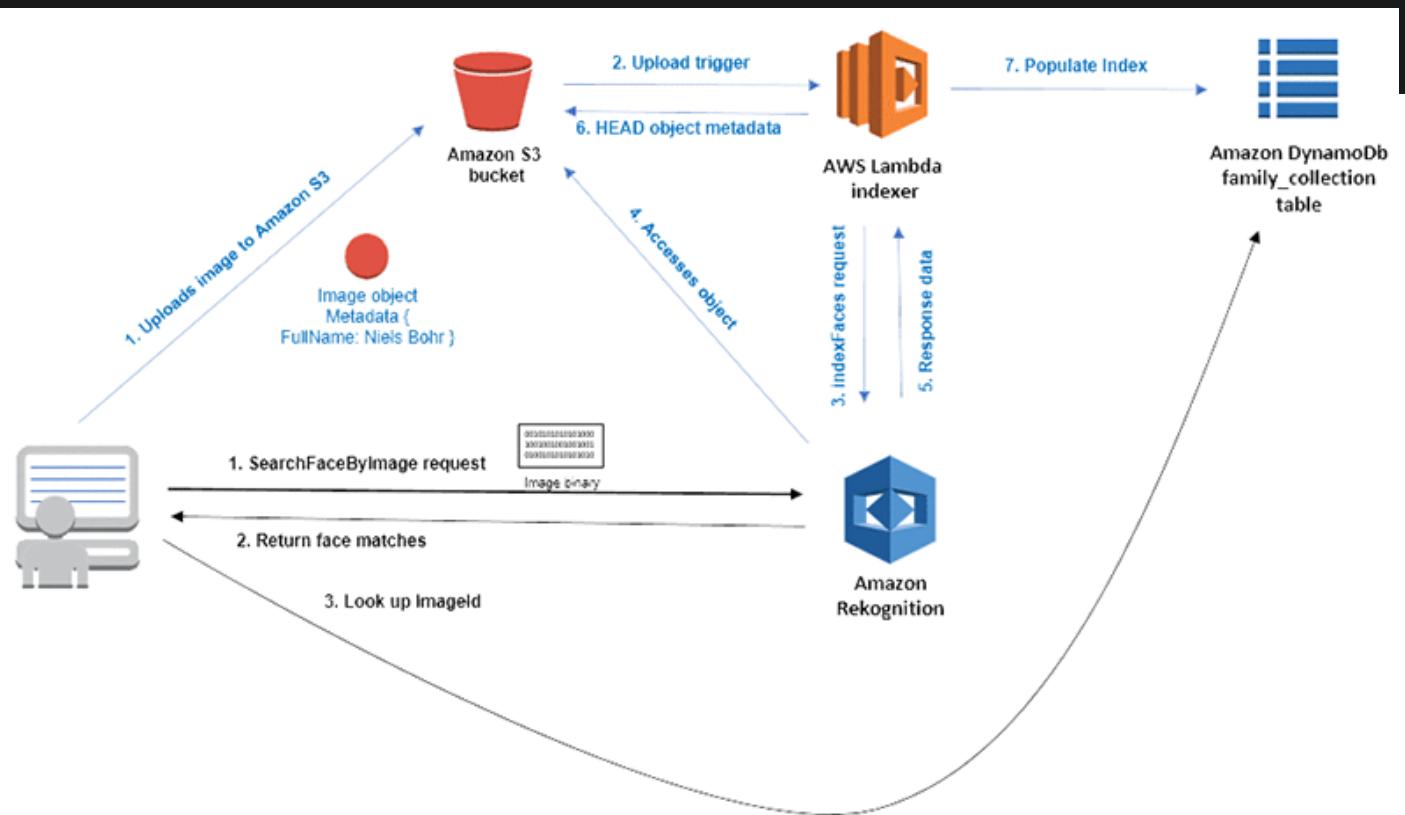
# Improve Your Web Server's Security with SSL/TLS Offload in AWS CloudHSM

[PDF](#) | [Kindle](#) | [RSS](#)

Web servers and their clients (web browsers) can use Secure Sockets Layer (SSL) or Transport Layer Security (TLS). These protocols confirm the identity of the web server and establish a secure connection to send and receive webpages or other data over the internet. This is commonly known as HTTPS. The web server uses a public–private key pair and an SSL/TLS public key certificate to establish an HTTPS session with each client. This process involves a lot of computation for the web server, but you can offload some of this to the HSMs in your AWS CloudHSM cluster. This is sometimes known as SSL acceleration. Offloading reduces the computational burden on your web server and provides extra security by storing the server's private key in the HSMs.

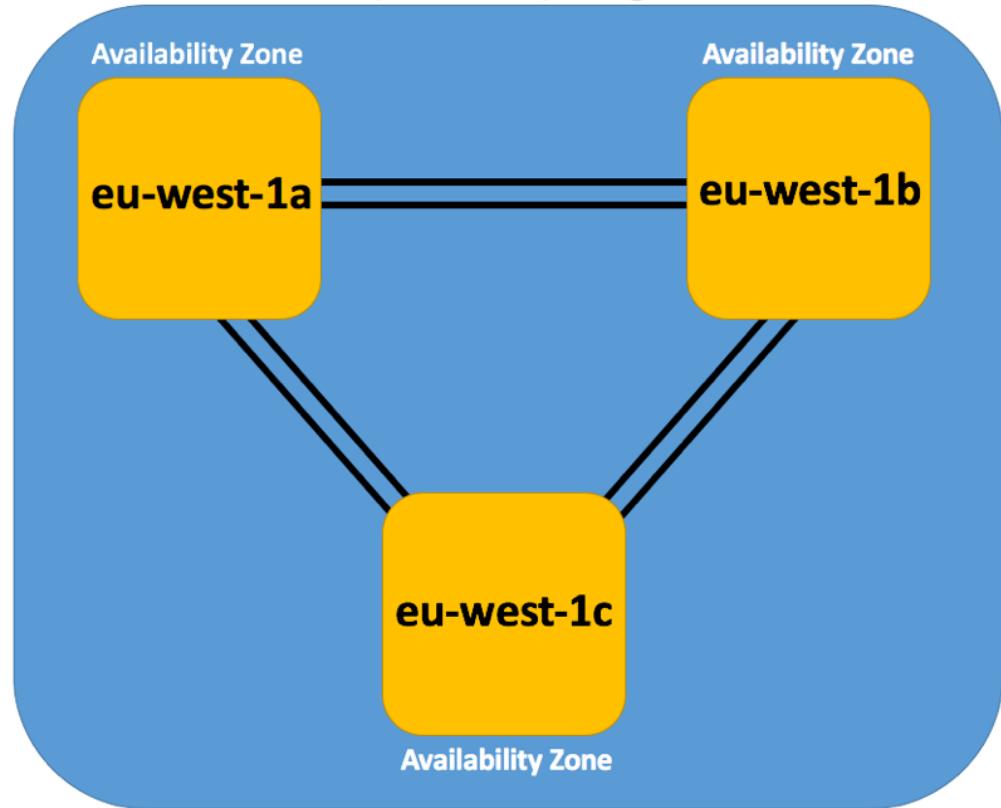
# Rekognition

Amazon Rekognition makes it easy to add image and video analysis to your applications. You just provide an image or video to the Amazon Rekognition API, and the service can identify objects, people, text, scenes, and activities. It can detect any inappropriate content as well. Amazon Rekognition also provides highly accurate facial analysis, face comparison, and face search capabilities. You can detect, analyze, and compare faces for a wide variety of use cases, including user verification, cataloging, people counting, and public safety.

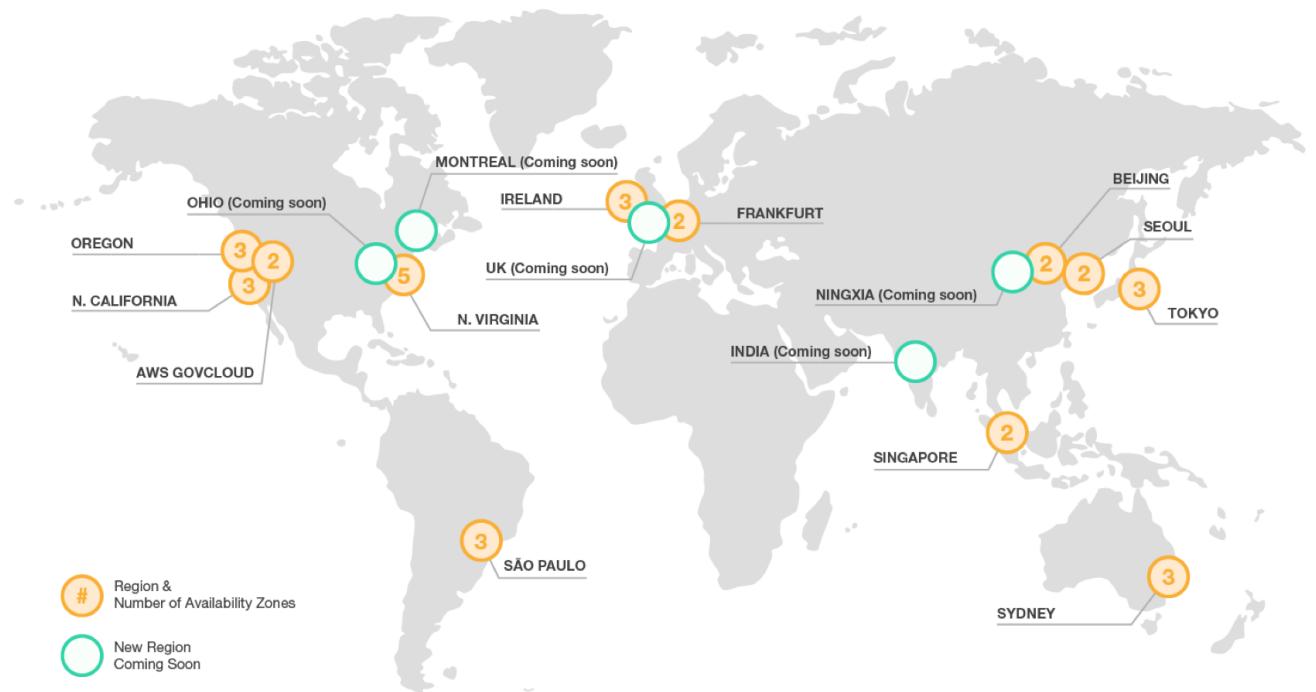


# AWS Regions

## EU (Ireland) Region

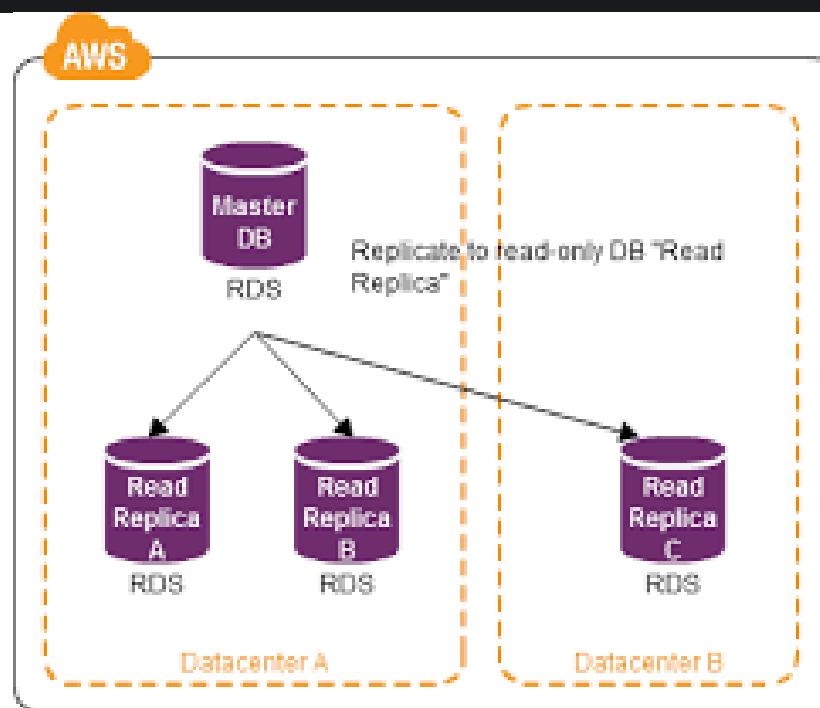


## Global Infrastructure



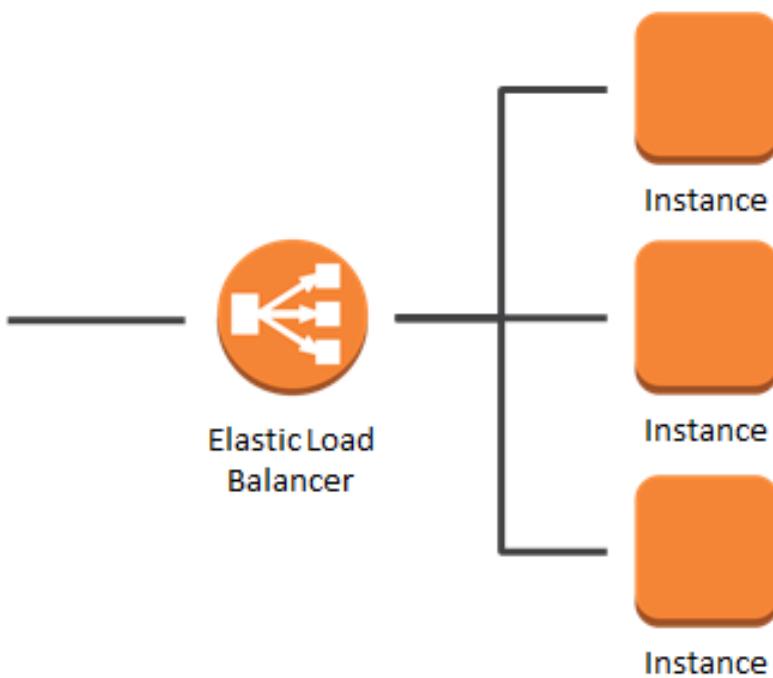
## RDS Read Replicas

Amazon RDS Read Replicas provide enhanced performance and durability for RDS database (DB) instances. They make it easy to elastically scale out beyond the capacity constraints of a single DB instance for read-heavy database workloads. You can create one or more replicas of a given source DB Instance and serve high-volume application read traffic from multiple copies of your data, thereby increasing aggregate read throughput. Read replicas can also be promoted when needed to become standalone DB instances. Read replicas are available in Amazon RDS for [MySQL](#), [MariaDB](#), [PostgreSQL](#), [Oracle](#), and [SQL Server](#) as well as [Amazon Aurora](#).

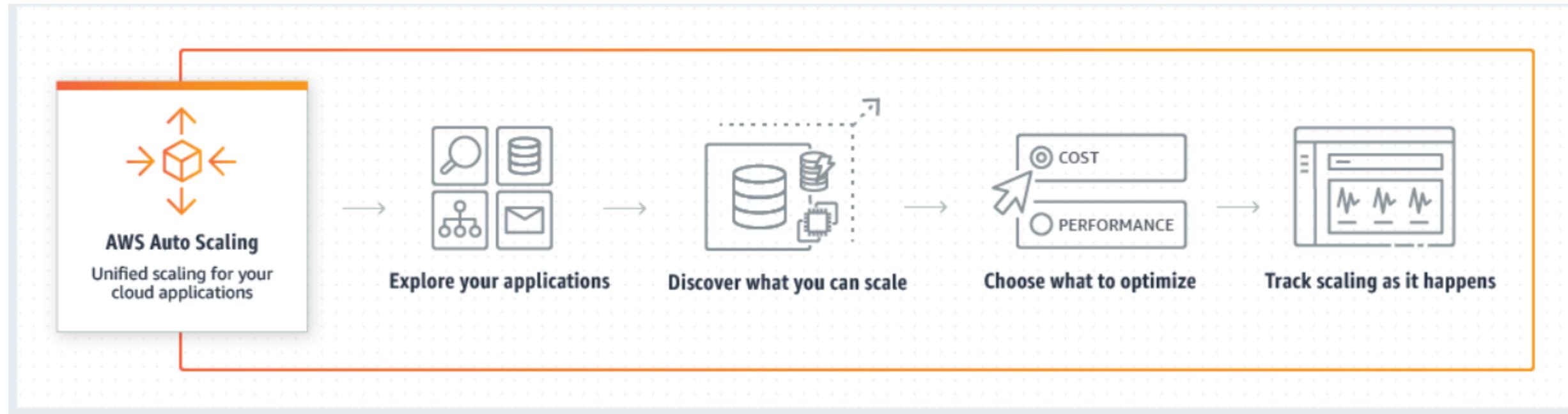


# ELB

Elastic Load Balancing automatically distributes your incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in one or more Availability Zones. It monitors the health of its registered targets, and routes traffic only to the healthy targets. Elastic Load Balancing scales your load balancer as your incoming traffic changes over time. It can automatically scale to the vast majority of workloads.



## Auto Scaling



AWS Auto Scaling monitors your applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost. Using AWS Auto Scaling, it's easy to set up application scaling for multiple resources across multiple services in minutes.

# EC2 Right Sizing

Cost Optimization: EC2 Right Sizing utilizes managed services to execute right-sizing analysis to provide detailed recommendations for more cost-saving builds and implementations of Amazon EC2 instances.

**3** Optimization opportunities    **\$110** Estimated monthly savings    **50.00%** Estimated savings (%)

Based on the last 14 days, we have identified 3 instances that have been idle and underutilized. Taking action on these instances could help you save an estimated \$110 monthly (50.00% of the EC2 On-Demand instance costs associated with these instances).

[Download CSV](#)

Recommendation	Instance ID	Account ID	Tag(s)	CPU (%)	Monthly estimated savings	
Modify instance	i-0b18d304a1...	AWS Insights Demo...	3 ▾	6.6%	\$72	<a href="#">View</a>
Modify instance	i-0196e32825...	AWS Insights Demo...	2 ▾	4.0%	\$33	<a href="#">View</a>
Modify instance	i-0a9909f442...	AWS Insights Demo...	2 ▾	7.5%	\$4	<a href="#">View</a>

< Viewing 1 to 3 of 3 recommendations >

\*Estimated Annual Savings and Purchase Recommendations are based on your past usage history and the relevant EC2, RDS, ElastiCache, Redshift, or Elasticsearch pricing. If your usage patterns change, it may affect the accuracy of the estimates and the purchase recommendations.  
\*\*To maximize savings, On-Demand usage associated with instance families eligible for size flexible RIs is auto-detected, analyzed, and shown as a purchase recommendation for the smallest instance size available in that instance family. [Learn More](#)  
\*\*\*Please note that for RDS recommendations with SQL and/or Oracle Database Engines, Cost Explorer will display the associated cost and usage inclusive of all database editions and/or license models for that Database Engine.

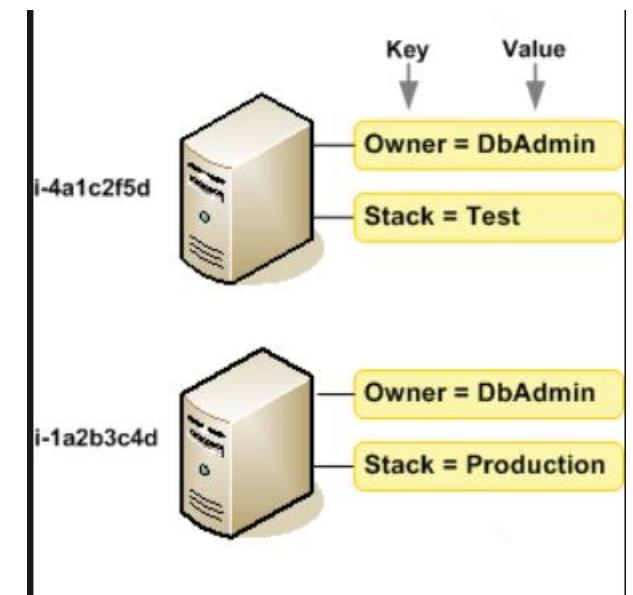
# Tagging EC2 Instances

To help you manage your instances, images, and other Amazon EC2 resources, you can assign your own metadata to each resource in the form of *tags*. Tags enable you to categorize your AWS resources in different ways, for example, by purpose, owner, or environment. This is useful when you have many resources of the same type—you can quickly identify a specific resource based on the tags that you've assigned to it. This topic describes tags and shows you how to create them.

Manage Tags

Filter:  Search Keys   Search Values  1 to 7 of 7 Tags

	Tag Key	Tag Value	Total	Instances	AMIs	Volumes
Manage Tag	Name	DNS Server	1	1	0	0
Manage Tag	Owner	TeamB	2	0	0	2
Manage Tag	Owner	TeamA	2	0	0	2
Manage Tag	Purpose	Project2	1	0	0	1
Manage Tag	Purpose	Logs	1	0	0	1
Manage Tag	Purpose	Network Management	1	1	0	0
Manage Tag	Purpose	Project1	2	0	0	2





Wish You  
All the Best