Getting Started with AWS

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Introduction to AWS

1

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Introduction to AWS
What is AWS?

- AWS stands for **Amazon Web Services.**

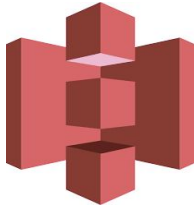- Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted **Cloud Platform**.

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Introduction to AWS

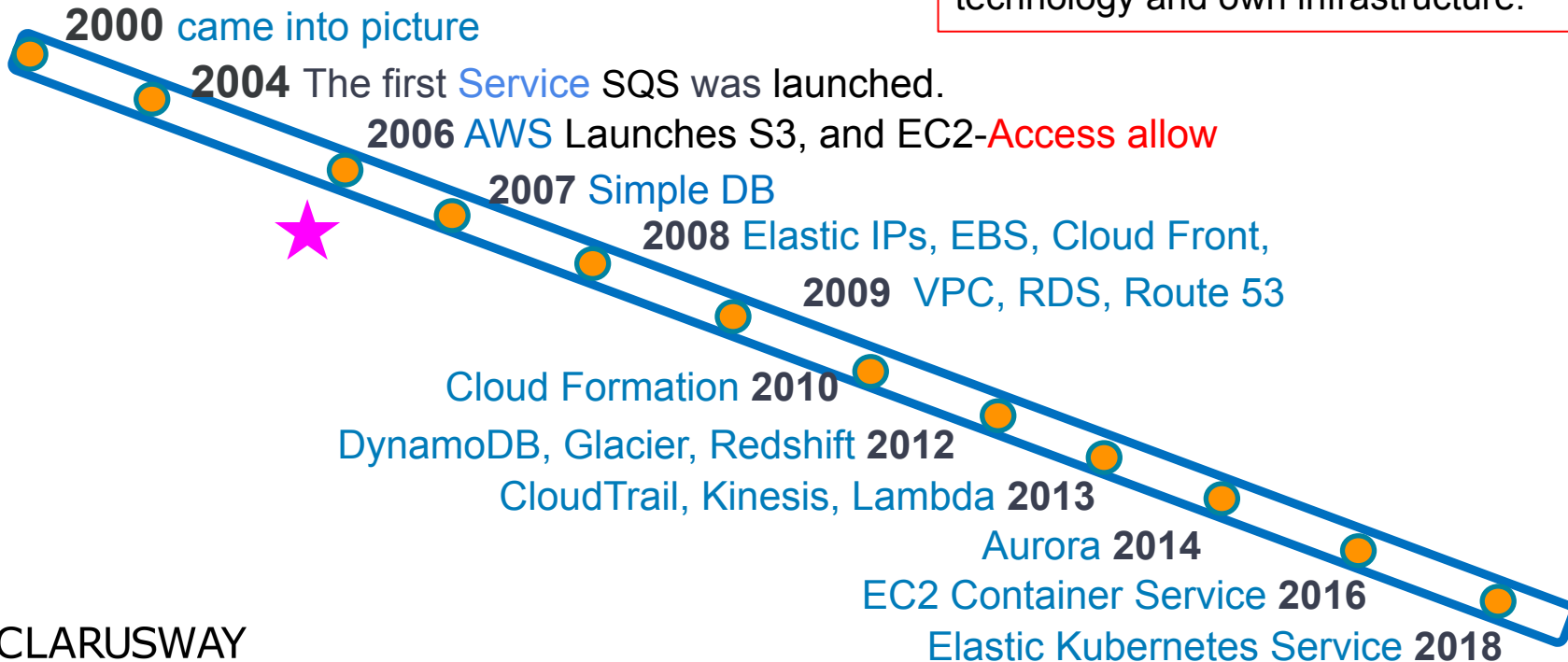## What is AWS?

| IAM | S3 | EC2 | Cloudformation | Elastic Beanstalk |

- AWS provides **on-demand** delivery of **technology services** via internet**.**

- It offers **over 200** fully featured services.

CLARUSWAY
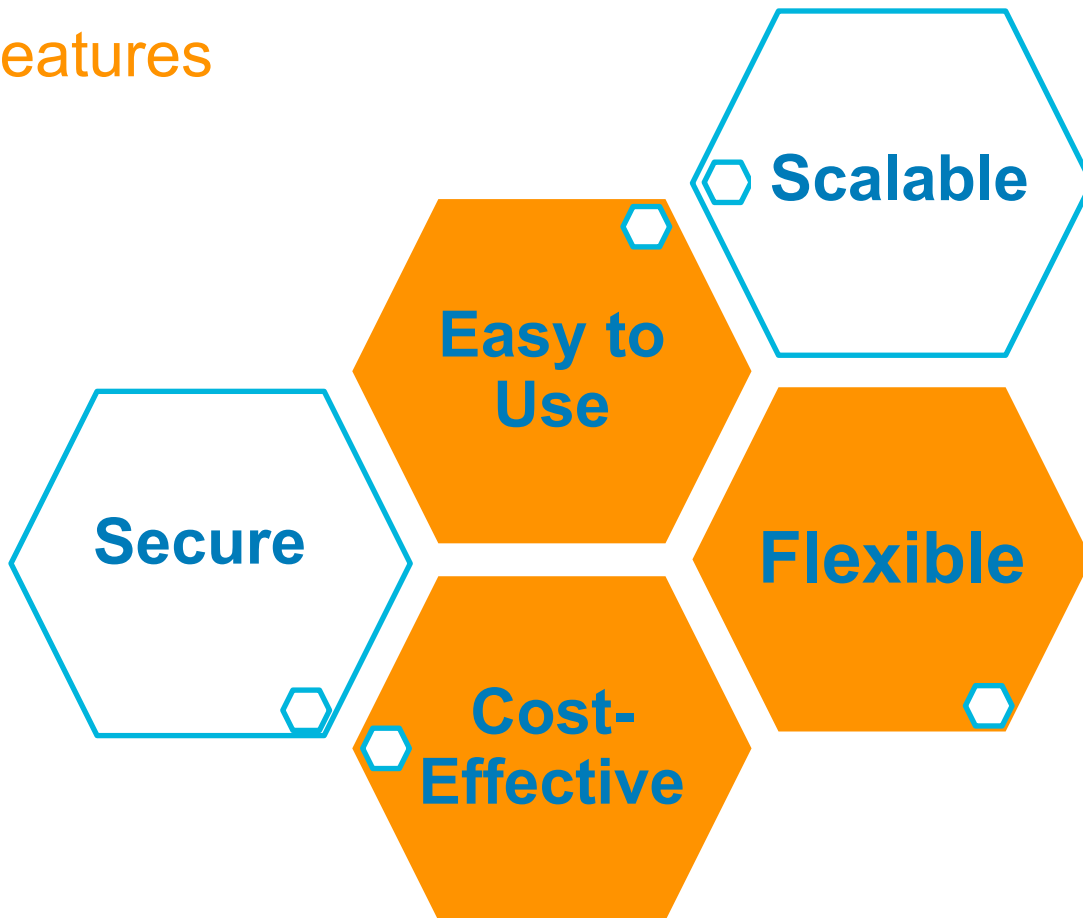WAY TO REINVENT YOURSELF

Introduction to AWS
History of AWS

AWS launched its first service in 2004. Over the years, many new services were put into service. But in this diagram, the real breaking point started in 2006, when AWS allowed developer begin to access to Amazon's own back-end technology and own infrastructure.

2000 came into picture

2004 The first Service SQS was launched.

2006 AWS Launches S3, and EC2-Access allow

2007 Simple DB

2008 Elastic IPs, EBS, Cloud Front,

2009 VPC, RDS, Route 53

Cloud Formation **2010**

DynamoDB, Glacier, Redshift **2012**

CloudTrail, Kinesis, Lambda **2013**

Aurora **2014**

EC2 Container Service **2016**

Elastic Kubernetes Service **2018**

Introduction to AWS

AWS Features

Scalable

Easy to Use

Secure

Cost-Effective

Flexible

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Introduction to AWS

AWS Market Share

AWS 31%

Azure 20%,

Google Cloud 12%,

Alibaba Cloud 4%

IBM 2%

Oracle 3%

Tencent 2%

www.statista.com-Q32024

Introduction to AWS
AWS Pros

- AWS offers more than **5 times the computation capacity** in use compared to the aggregate of the other 14 leading market providers.

- With hundreds of thousands of customers operating every possible use case on AWS in over **190 countries.**

- Thousands of independent software vendors such as **SAP, Oracle, Adobe, Microsoft,** etc.

- Amazon Web Services currently **supports over 7,500 government agencies and 14,000 educational institutions.**

Introduction to AWS
AWS Cons

- Sometimes a difficult learning curve for large companies

- Billing can be confusing

- Amazon's EC2 Limits

- Common Cloud Computing problems

There is no cloud
it's just someone else's computer

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2 What does AWS offer?

What does AWS offer?
AWS Services

What does AWS offer?

www.e-commerce...

What does AWS offer?

www.e-commerce..

Publishing the website

aws

EC2

THE *Chocolate* MARKET

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www.e-commerce...

Staff

customer

Sign Up

CloudFront

AWS Lambda

VPC

- Web Server work in EC2 machine
  (nginx-apache httpd)
- Auto Scaling
- Load Balancing

- Register domain name of the website
- Publishing on Internet
- Routing policies

- Best seller images,
- Inventory List etc.
- Data Log

-Customer info
-System Backups

EC2

AWS Route 53
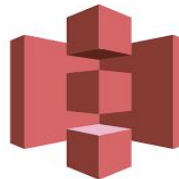
S3

RDS

Problem, bug vs..

Developer

- Inventory changed
- Price Changed
- Sale
- Discount, etc.
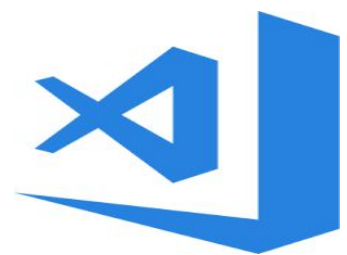
Change the code
Versioning CSS, HTML

AWS Route 53

Publish in Public
Internet

EC2

Build&
Deploy
Pipeline
Send-EC2 server

Hook
function

Jenkins

GitHub

Git Commit

AWS Well-Architected Framework 6 Pillars

Operational Excellence Pillar

Security Pillar

Reliability Pillar

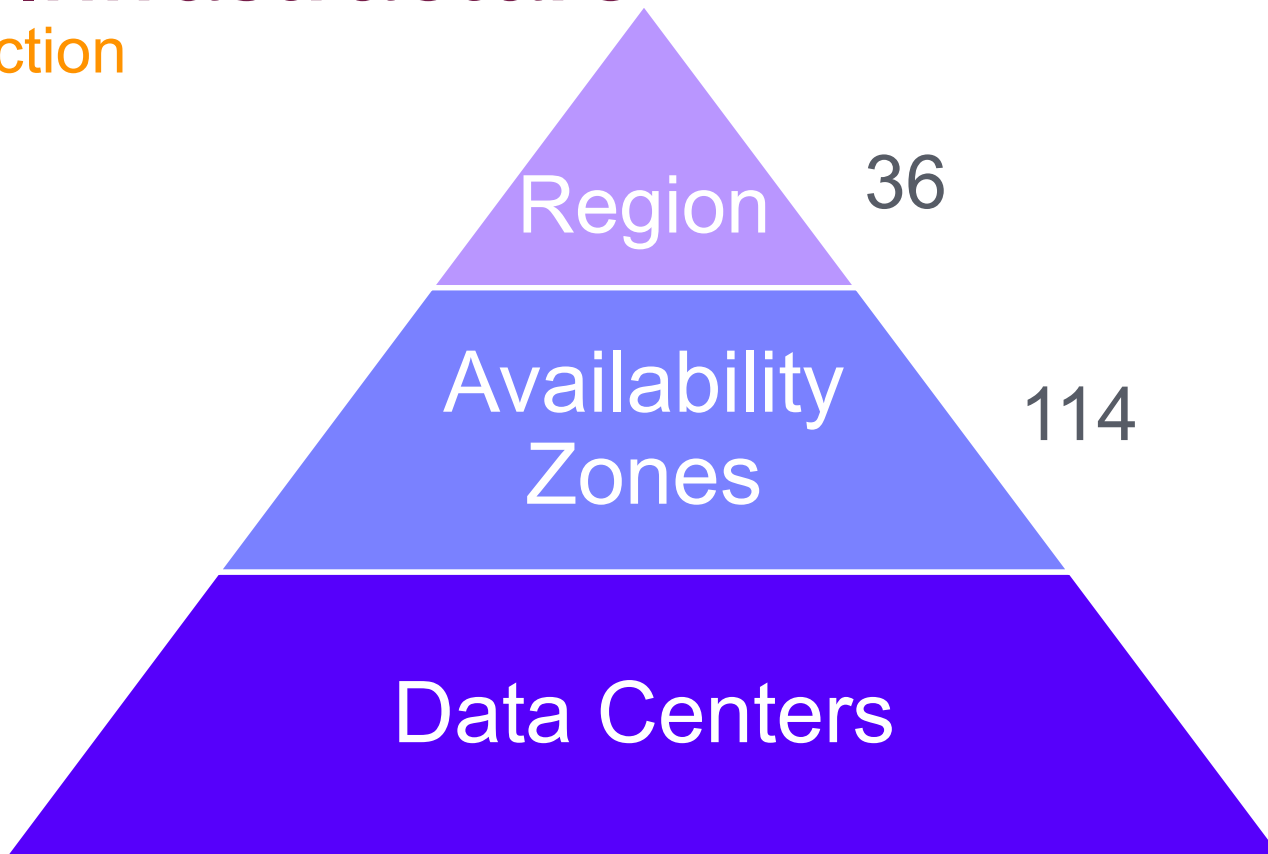**Performance Efficiency Pillar**

Cost Optimization Pillar

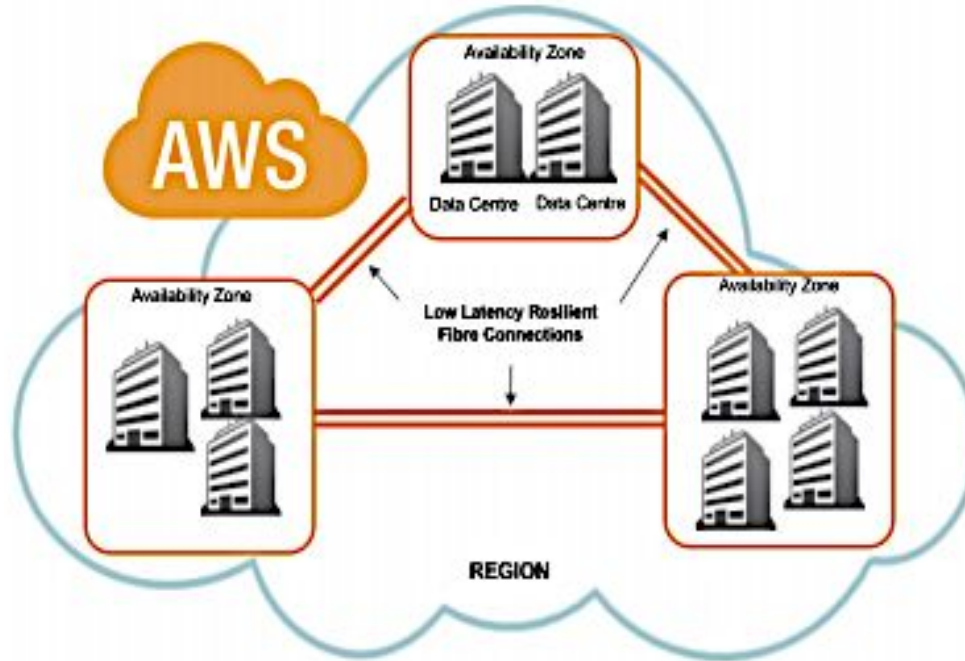**Sustainability Pillar**

3 AWS Infrastructure

AWS Infrastructure

Introduction

Region   36

Availability
Zones   114

Data Centers

AWS Infrastructure

Introduction

- Multiple Availability Zones in AWS Region

- Availability Zones consist of one or more discrete Data Centers

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AWS Infrastructure
AWS Regions

N. Virginia is the region with the most service-support. In the other regions, not all services of AWS are in progress.

Ireland

N.Virginia

Singapore

⭕ Current Regions

⭕ New Regions coming soon

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AWS Infrastructure
Factors Impacting Region Selection
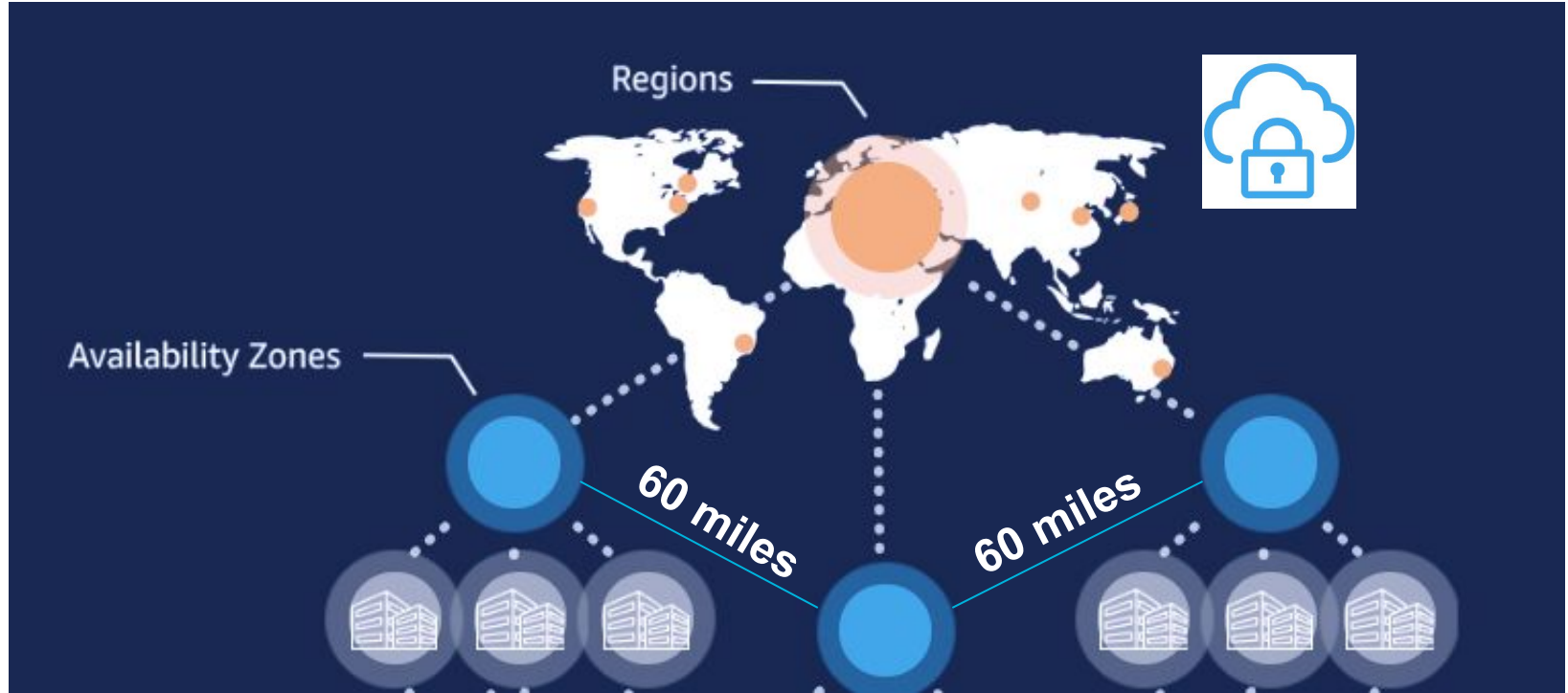
Governance and Legal Requirements

Latency

Cost

Service availability

AWS Infrastructure
AWS Availability Zones

AWS Infrastructure
AWS Availability Zones

- An Availability Zone is a facility where the data centers are located.

- There are currently 114 Availability Zones (as of Jan 2024).

- All AZ's in an AWS region are interconnected with metro fiber.

- All traffic between AZ's is encrypted.

- AZ's are physically separated by a meaningful distance, many kilometers, from any other AZ, although all are within 100 km (60 miles of each other).

AWS Infrastructure
AWS Data Centers

- The data center infrastructure consists of **physical or hardware-based tools and components.**

- AWS data centers are **secure** by design.

Northern Virginia Data Center

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AWS Infrastructure
AWS Data Centers Layers

Infrastructure Layer

Data Layer

Perimeter Layer

Environmental Layer

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AWS Infrastructure
Edge Locations

- An edge location is where end-users access services located at AWS and used for **caching content.**

- **700+** Edge Locations
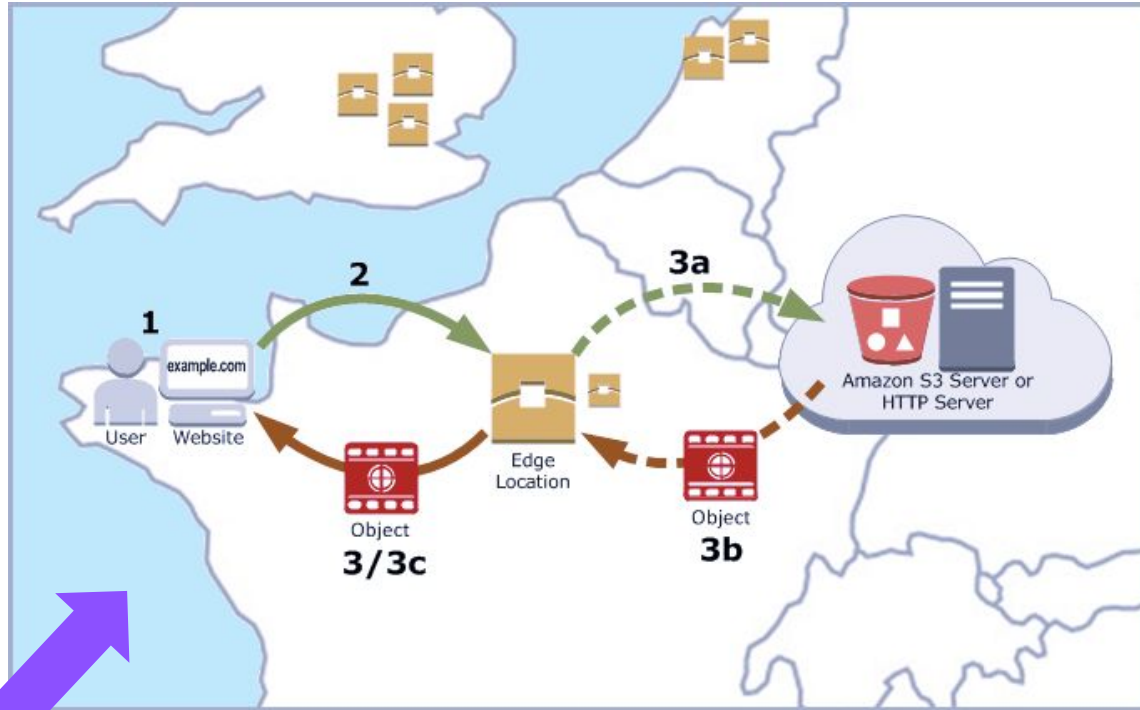
First Query : 1-2-3a-3b-3c-1

Second Query : 1-2-3-1

AWS Local Zones

Enable AWS Local Zones

Extend your Amazon VPC to the AWS Local Zone

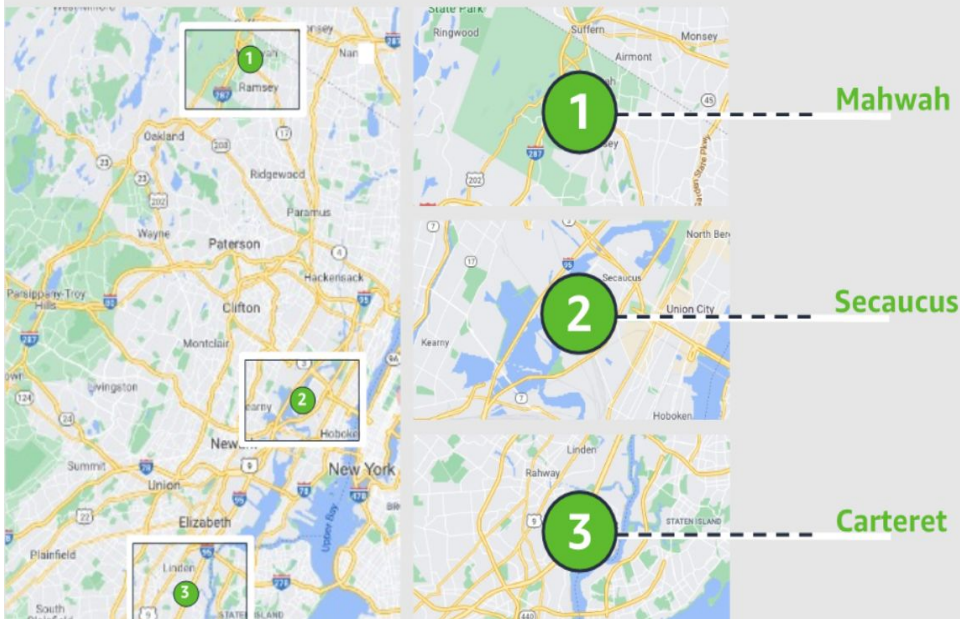Build and run your low latency applications in the AWS Local Zone

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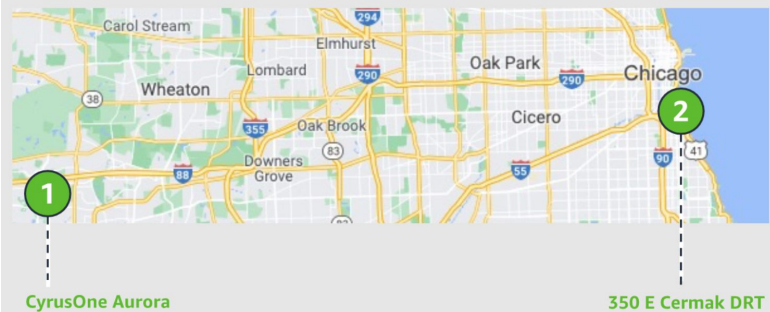
AWS Infrastructure
AWS Local Zones

New Jersey Exchange Datacenter Locations

1 Mahwah
2 Secaucus
3 Carteret

Chicago Exchange Datacenter Locations

1 CyrusOne Aurora
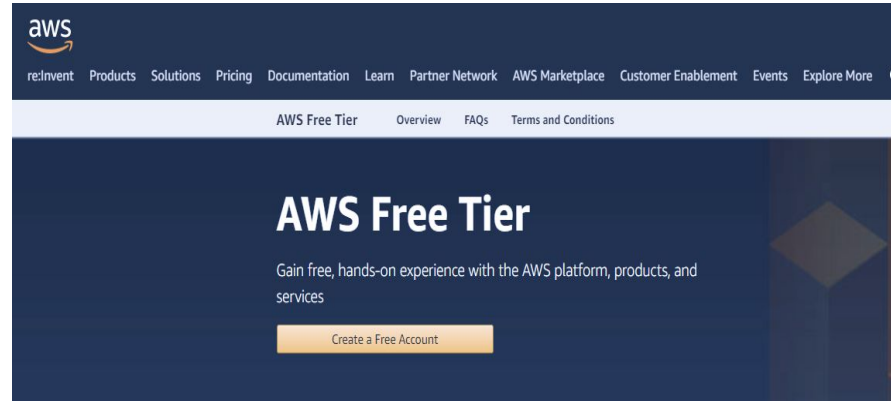2 350 E Cermak DRT

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4 AWS Free Tier

AWS Free Tier

What is AWS Free Tier?

- The AWS free tier is a account type that lets you gain free, hands-on experience with AWS products and services.

- The AWS free tier provides customers the ability to explore and try out AWS services free of charge up to specified limits for each service.

AWS Free Tier
Free Tier Offer Types

The Free Tier is comprised of three different types of offerings;

- Services with a **12-month free tier** allow customers to use the product for free up to specified limits for one year from the date the account was created.

- Services with an **always free** offer allow customers to use the product for free up to specified limits as long as they are an aws customer.

- Services with a **short term trial** are free to use for a specified period of time or up to a one-time limit depending on the service selected.

AWS Free Tier
Billing Policy

- You are recommended to set **a billing alarm** to stay within the limits.

- If your application use exceeds the free tier limits, you simply pay standard, **pay-as-you-go service rates.**

- AWS Free Tier is applied to your **monthly usage**. It will expire on the 1st day of each month and does not accumulate.

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4 Creating AWS Free Tier

Creating AWS Free Tier

- First, Enter the browser: **https://aws.amazon.com/free**
- Then click, "**Create Free Account**"

Creating AWS Free Tier

- On clicking on the "**Create Free Account**" button, the following screen appears that requires some fields to be filled by the user including **email address, password and account name.**

Create an AWS account

Email address

example@clarusway.com

Password

··········

Confirm password

··········

AWS account name ⓘ

awsdevopsteam

Continue

Sign in to an existing AWS account

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Creating AWS Free Tier

- Select "**Personal**" as an account Type and then fill your contact information.

Contact Information

All fields are required.

Account type ⓘ

○ Professional   ● **Personal**

Full name

awsdevopsteam

Phone number

1234567889

Country/Region

United States

Address

XXXXXXXXXX

XXXXXXXXXX

City

XXXXXXXXXX

State / Province or region

XXXXXXXXXX

Postal code

XXXXXXXXXX

☑ Check here to indicate that you have read and agree to the terms of the AWS Customer Agreement

Create Account and Continue

Creating AWS Free Tier

- Fill your payment information.

Payment Information

We use your payment information to verify your identity and only for usage in excess of the AWS Free Tier Limits. We will not charge you for usage below the AWS Free Tier Limits. For more information, see the frequently asked questions.

(i) When you submit your payment information, we will charge $1 USD/EUR to your credit card as a verification charge to ensure your card is valid. The amount may show as pending in your credit card statement for 3-5 days until the verification is completed, at which time the charge will be removed. You may be redirected to your bank website to authorize the verification charge.

Credit/Debit card number

XXXXXXXXXXX

Expiration date

XX   XXXX

Cardholder's name

Xxxxxx. XXXXX

Billing address

● Use my contact address

○ Use a new address

Verify and Add

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Creating AWS Free Tier

- Confirm your identity by entering **your phone** number and code displayed in the captcha.

- Choose "Contact me ".

- If you chose to verify your account by SMS, choose "Send SMS" instead, like in the picture.

- Then enter the PIN you receive by text message or voice call, and then choose "Continue".

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Confirm your identity

Before you can use your AWS account, you must verify your phone number. When you continue, the AWS automated system will contact you with a verification code.

Country or region code

United States (+1)

Cell Phone Number

(123) 4567899

Security check

6nncap

Send SMS

Creating AWS Free Tier

- After verification, select the support Plan. Choose the "**Basic Plan** " which is free.

THANKS!

Any questions?

You can find me at:

- ▸ @Aslan – Instructor
- ▸ aslan@clarusway.com

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