▶ 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.**

Introduction to AWS
What is AWS?
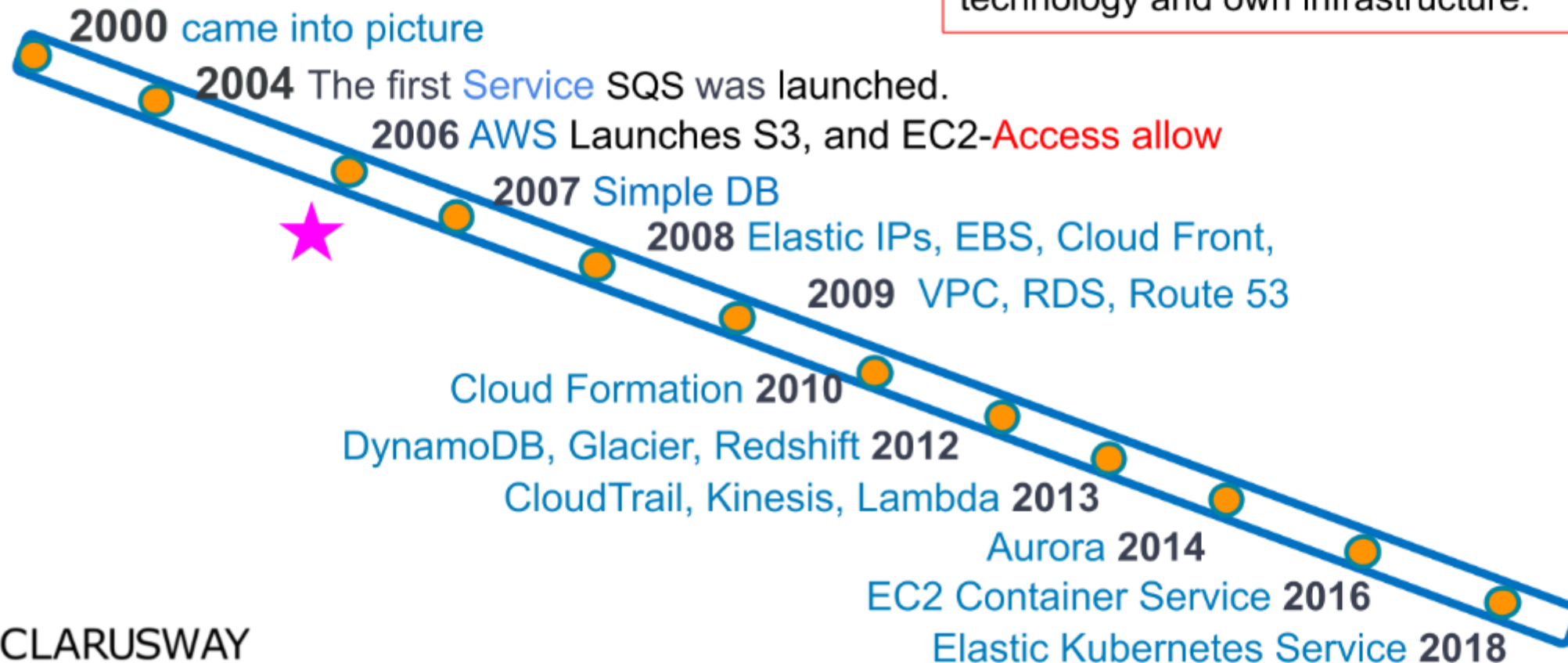
IAM   S3   EC2   Cloudformation   Elastic Beanstalk

- AWS offers **over 200** fully featured services

- Millions of customers are using AWS to **lower costs, become more agile, and innovate faster.**

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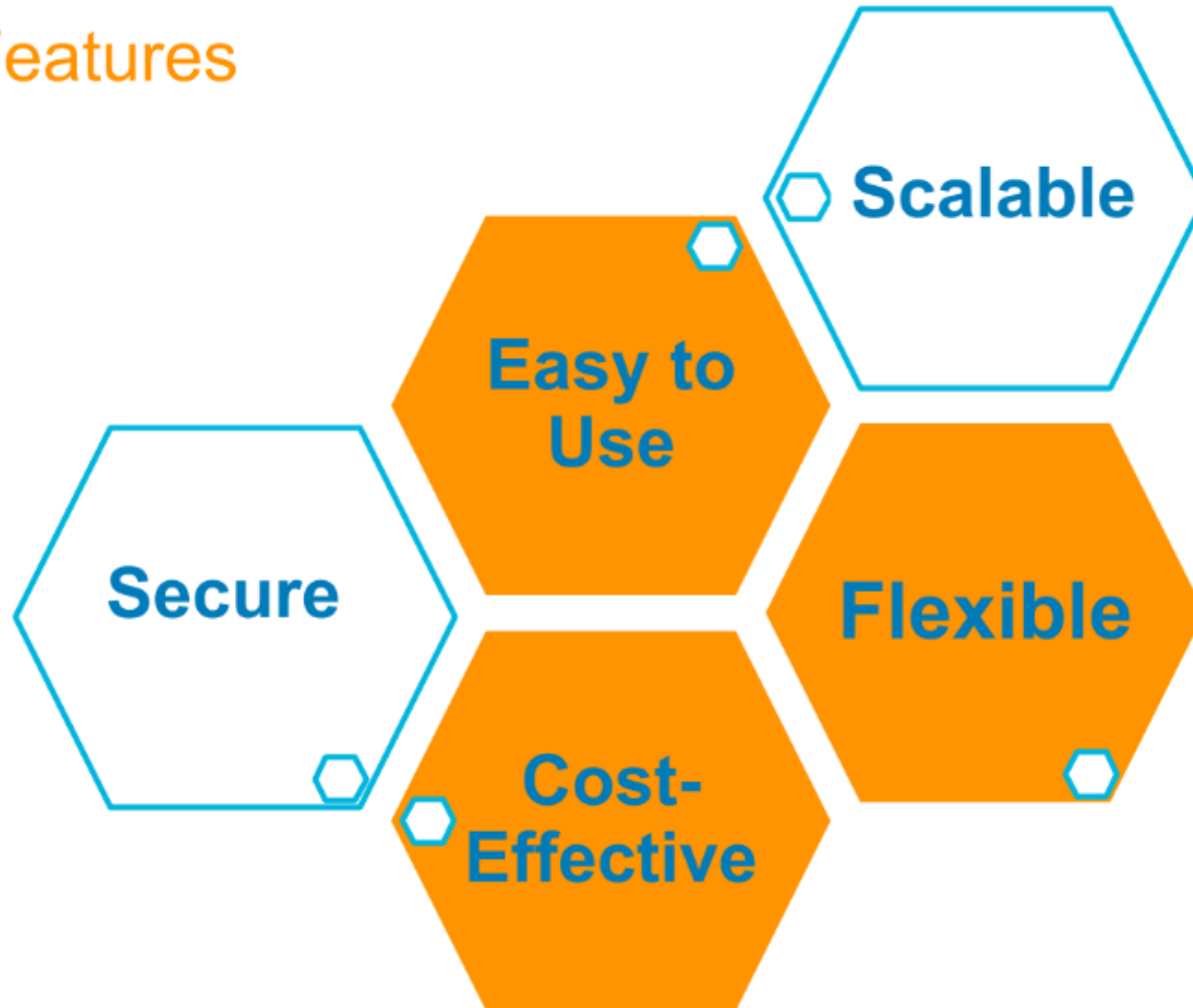
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Introduction to AWS
History of AWS

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**

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Introduction to AWS

AWS Features

Scalable

Easy to Use

Secure

Flexible

Cost-Effective

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Introduction to AWS
AWS Market Share

AWS 32.4%

Azure 17.6%,

Google Cloud 6%,

Alibaba Cloud 5.4%

Others 38.5%.

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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 2,000 government agencies and 5000 educational institutions.**
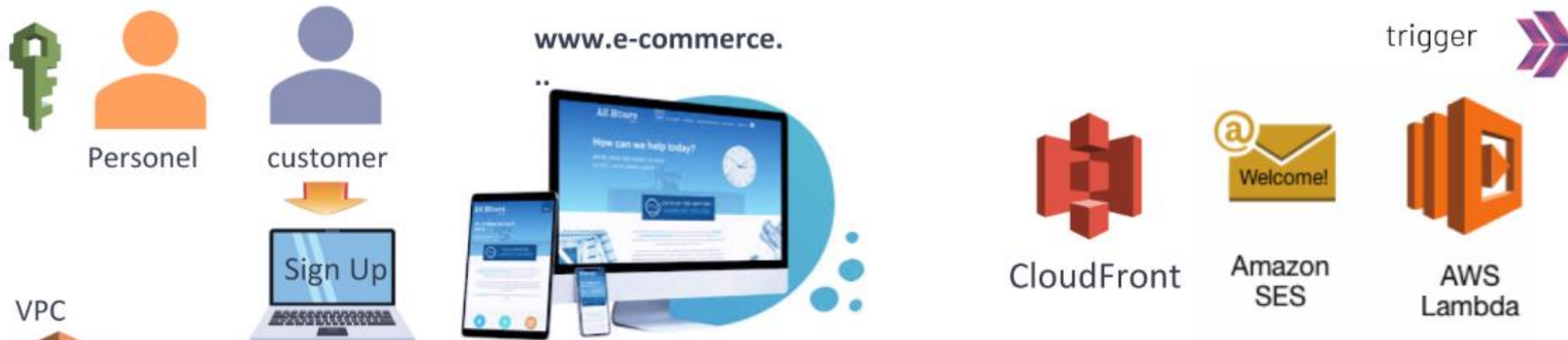
Introduction to AWS
AWS Cons

- 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

trigger

Personel   customer   www.e-commerce.
..

VPC   Sign Up   CloudFront   Amazon SES   AWS Lambda

- Web Server work in   - Register domain   - Inventory Images   -Data Log record
EC2 machine   name of the web site - Best seller images, -Customer info
(nginx-apache httpd)   -Publishing on Internet - Inventory List etc. -System Backups
- Auto Scaling   -Routing –region-language
- Load Balancing

EC2   AWS Route 53   S3   RDS

Problem,bug vs..

Developer

Inventory changed
Price Changed
Sale
Discount, etc.

AWS Route 53

Publish in Public Internet

EC2

Build&
Deploy
Pipeline
Send-EC2 server

Jenkins

Hook function

Change the code
Versioning Css, HTML

GitHub
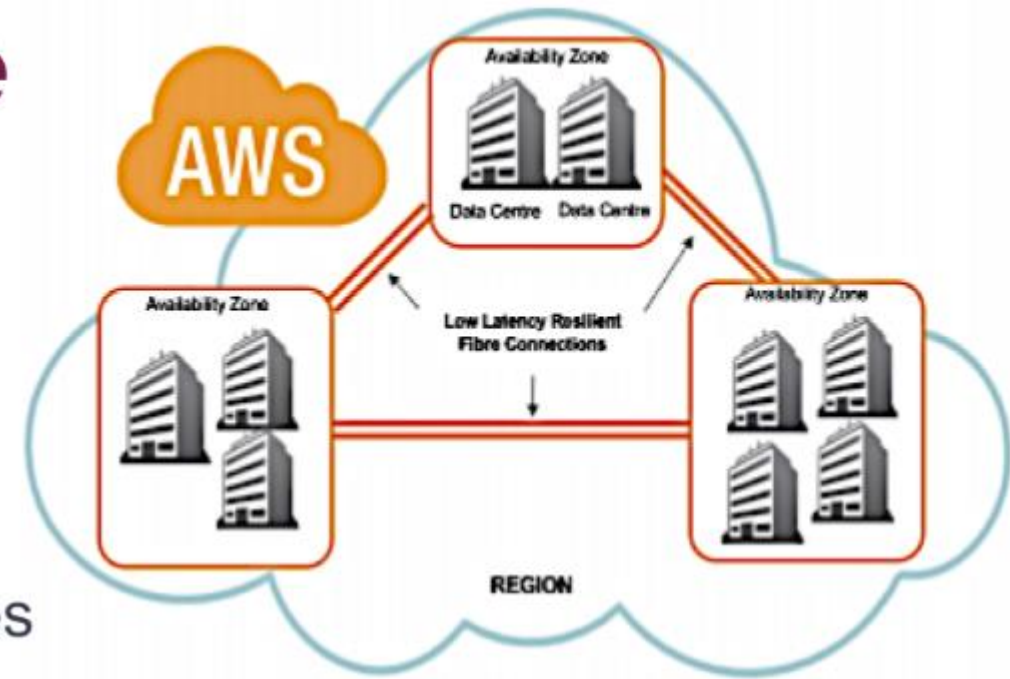
Git commit

AWS Infrastructure
Introduction

- AWS Regions and Availability Zones

- Multiple Availability Zones in AWS Region*

- Availability Zones consist of one or more discrete Data Centers

* Asia Pacific(Osaka) Local Region have only one Availability Zone.

AWS Infrastructure
AWS Regions

24 Geographic Regions

N. Virginia, Ireland and Singapore are the regions with the most service-support in their continents. In the other regions, not all services of AWS are in progress

Ireland

N.Virginia

Singapore

○ Current Regions

○ New Regions coming soon (**Spain, Jakarta, Osaka**)

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 77 Availability Zones

- 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).

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AWS Infrastructure
AWS Data Centers

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

- Data centers are where our information is **stored.**

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

Northern Virginia Data Center

AWS Infrastructure
AWS Data Centers Layers

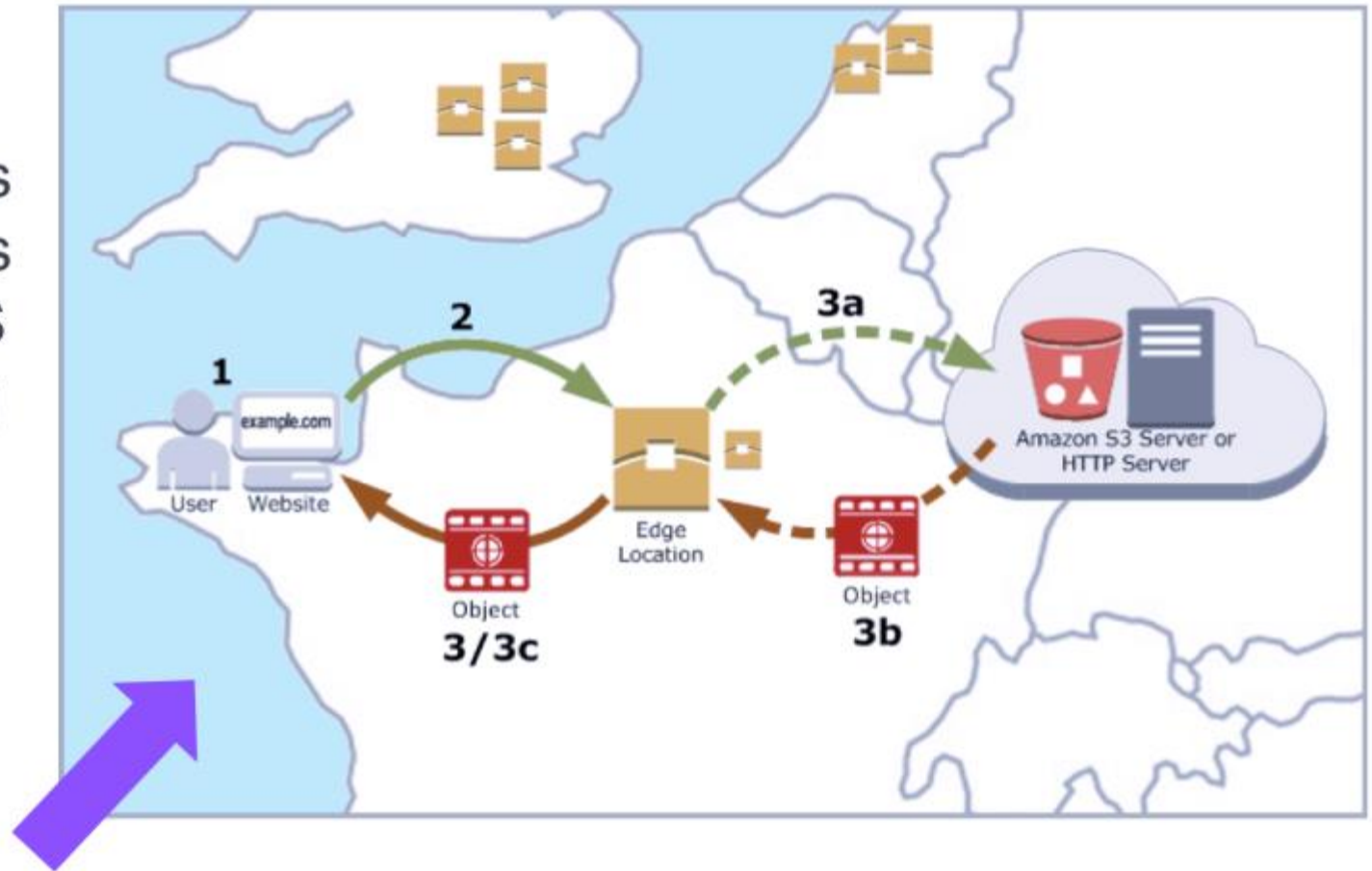Infrastructure Layer

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.**

- **205** Edge Locations

First Query : 1-2-3a-3b-3c-1

Second Query : 1-2-3-1

AWS Infrastructure
AWS Local Zones

- AWS Local Zones are a new type of AWS infrastructure deployment that places AWS compute, storage, database, and other select services closer to large population, industry, and IT centers **where no AWS Region exists today.**

- Each AWS Local Zone location is an **extension of an AWS Region**

- AWS Local Zones is now available in **Los Angeles (LA).**

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