AMAZON WEB SERVICES (AWS)

CLOUD COMPUTING WITH aws

From Zero to One

LEC – 3

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WHAT WE LEARNT IN LEC 2 :

- Total cost of ownership
- CAPEX v/s OPEX
- Cloud architecture terminologies
- High Availability
- Scalability
- Fault Tolerance
- High Durability
- What is Cloud Service Provider (CSP)
- Landscape of CSPs
- Common Cloud Services

WHAT WE WILL LEARN TODAY :

- What is AWS ?
- Benefits of using AWS
- History and Origins of AWS
- AWS Components
- AWS Services
- AWS Global Infrastructure
- AWS Regions
- AWS Availability Zones
- AWS Edge Locations
- Conclusion

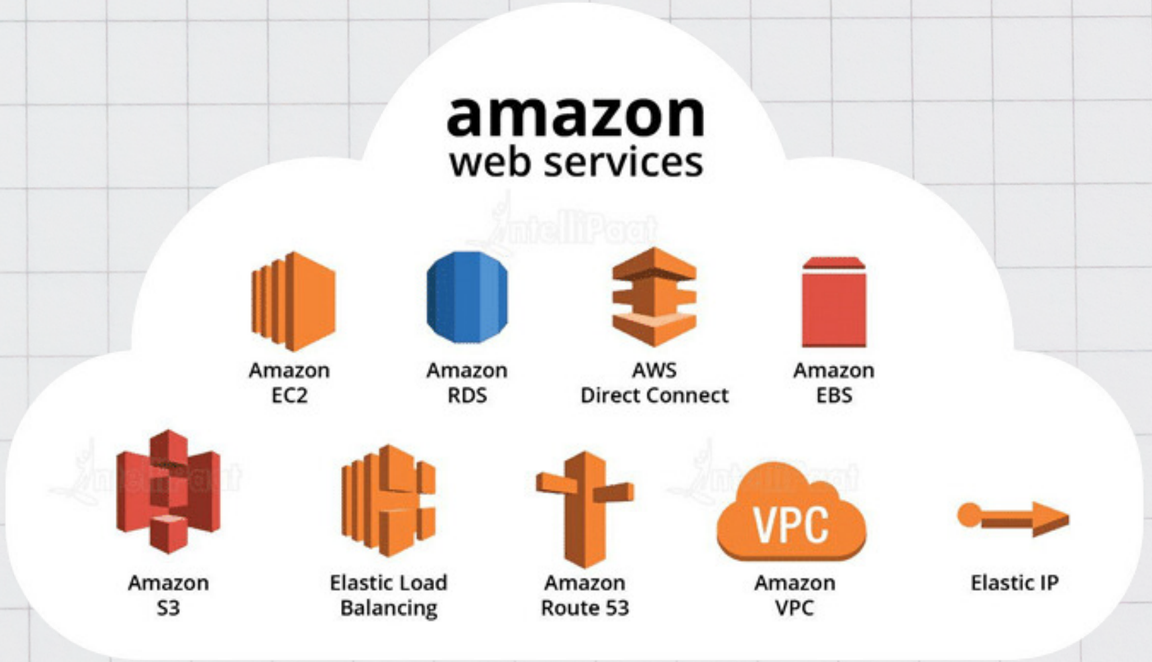
WHAT IS AWS?

- Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud.
- Amazon Web Services (AWS) is a suite of cloud computing services that runs on the same infrastructure that Amazon uses for its e-commerce website.
- AWS offers a broad set of global compute, storage, database, analytics, application, and deployment services that help organizations move faster, lower IT costs, and scale applications.

AMAZON WEB SERVICES (AWS)

WHAT IS AWS?

- AWS is a set of cloud computing services.
- AWS has flexibility, availability, and scalability
- AWS is Elastic: scale up or scale down as needed.
- We can get resources instantly.
- AWS is fully on demand.



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BENEFITS OF USING AWS

- **Cost-effective:** AWS offers a pay-as-you-go pricing model, so you only pay for the resources you use. This can save you a lot of money, especially if you have fluctuating traffic or seasonal demand.
- **Scalable:** AWS is highly scalable, so you can easily add or remove resources as needed. This makes it ideal for businesses that are growing or that experience spikes in traffic.
- **Reliable:** AWS has a proven track record of reliability. The platform is backed by Amazon's vast infrastructure, which ensures that your applications are always up and running.
- **Secure:** AWS offers a wide range of security features, including encryption, access control, and intrusion detection. This helps to protect your data from unauthorized access.
- **Flexible:** AWS offers a wide range of services, so you can choose the ones that best meet your needs. This makes it a versatile platform that can be used for a variety of applications.
- **Easy to use:** AWS is easy to use, even for beginners. The platform has a simple interface and a wide range of documentation.

AMAZON WEB SERVICES (AWS)

HISTORY AND ORIGINS OF AWS

- 2000: Amazon begins building its own internal cloud infrastructure to support its e-commerce business.
- 2003: Chris Pinkham and Benjamin Black present a paper on how Amazon's internal infrastructure could be sold as a service.
- 2006: Amazon launches Amazon Simple Storage Service (S3), the first AWS service.
- 2007: Amazon launches Amazon Elastic Compute Cloud (EC2), a virtual computing platform.
- 2008: Amazon launches Amazon Relational Database Service (RDS), a managed database service.
- 2010: Amazon launches Amazon Simple Queue Service (SOS), a message queuing service.
- 2013: Amazon launches Amazon Elastic Beanstalk, a service for deploying and scaling web applications.
- 2014: Amazon launches Amazon Lambda, a serverless computing service.
- 2015: Amazon launches Amazon Rekognition, a computer vision service.
- 2022: Amazon launches Amazon SageMaker, a machine learning service.

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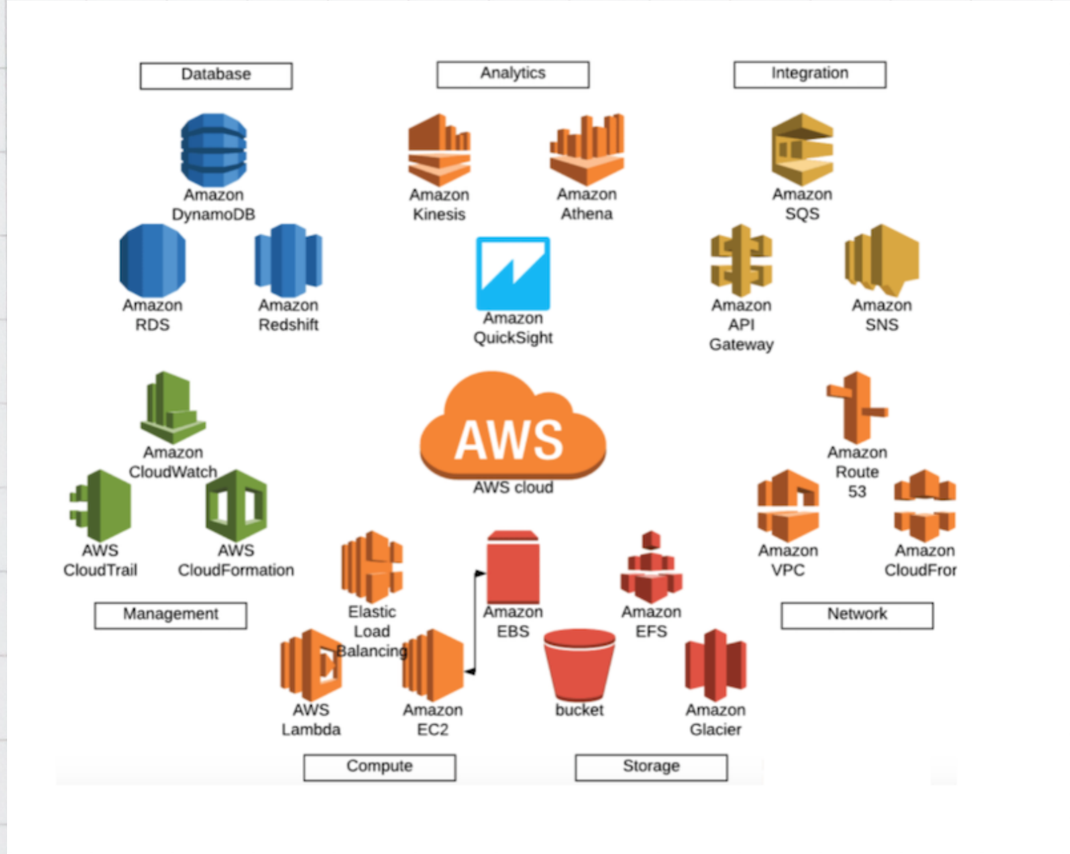
AMAZON WEB SERVICES (AWS)

AWS COMPONENTS

- **Compute:** AWS offers a wide range of compute services, including EC2, Lambda, and Elastic Beanstalk. These services allow you to scale your applications up or down as needed, and pay only for the resources you use.

- **Storage:** AWS offers a variety of storage services, including S3, EBS, and EFS. These services allow you to store your data in a secure and scalable way.

- **Networking:** AWS offers a global network of data centers, which allows you to connect your applications to your users around the world.



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AMAZON WEB SERVICES (AWS)

AWS COMPONENTS

- **Databases:** AWS offers a variety of database services, including **RDS, DynamoDB, and Redshift.** These services allow you to store and manage your data in a scalable and reliable way.

- **Application services:** AWS offers a variety of application services, including **API Gateway, SQS, and SNS**. These services allow you to build and deploy your applications quickly and easily.

- **Management tools:** AWS offers a variety of management tools, including **CloudWatch, CloudFormation, and CodePipeline.** These tools allow you to monitor your applications, deploy changes, and automate your workflows.

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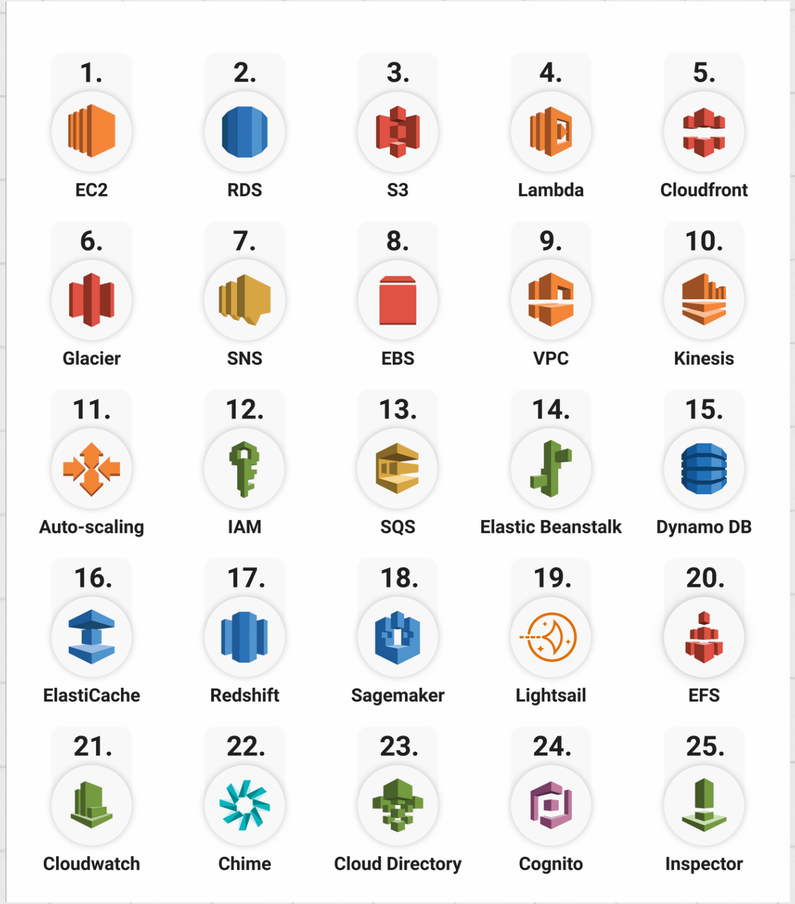
AMAZON WEB SERVICES (AWS)

AWS SERVICES

- **Compute:** EC2, Lambda, Elastic Beanstalk, Lightsail, Fargate
- **Storage:** S3, EBS, EFS, Glacier, DynamoDB
- **Database:** RDS, DynamoDB, Redshift, Neptune, ElastiCache
- **Networking:** VPC, Route 53, CloudFront, Direct Connect
- **Analytics:** Athena, Redshift, QuickSight, EMR
- **Machine Learning:** SageMaker, Rekognition, Lex, Polly
- **Containers:** EKS, ECS, Docker
- **Serverless:** Lambda, Step Functions, CloudWatch Events
- **Management Tools:** Cloud Formation, CodePipeline, CodeDeploy



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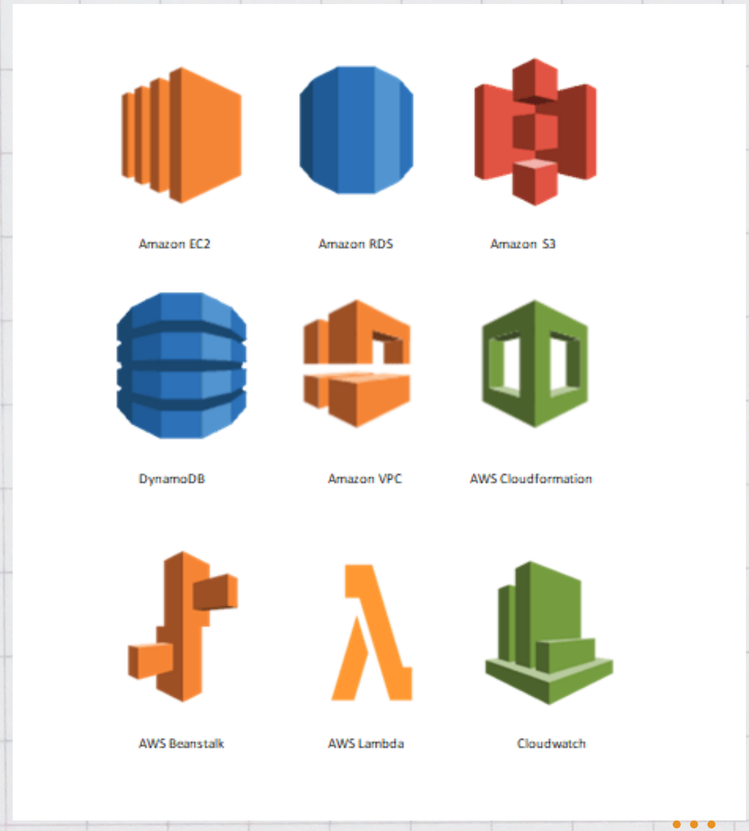
AMAZON WEB SERVICES (AWS)

AWS SERVICES YOU MUST TRY :



- **Amazon Elastic Compute Cloud (EC2):** EC2 provides resizable compute capacity in the cloud. You can use EC2 to launch instances of your favorite operating system and application stack.
- **Amazon Simple Storage Service (S3):** S3 is a scalable, durable, and highly available object storage service. You can use S3 to store any type of data, including documents, images, videos, and backups.
- **Amazon Relational Database Service (RDS):** RDS provides managed relational database services for MySQL, PostgreSQL, Oracle, and SQL Server. RDS makes it easy to set up, operate, and scale a relational database in the cloud.
- **Amazon Simple Notification Service (SNS):** SNS is a pub/sub messaging service that allows you to decouple microservices and distributed systems. You can use SNS to send notifications to subscribers, such as mobile devices, email addresses, or other AWS services.
- **Amazon CloudFront:** CloudFront is a content delivery network (CDN) that helps you deliver your web content to users all over the world with high performance, low latency, and high availability.

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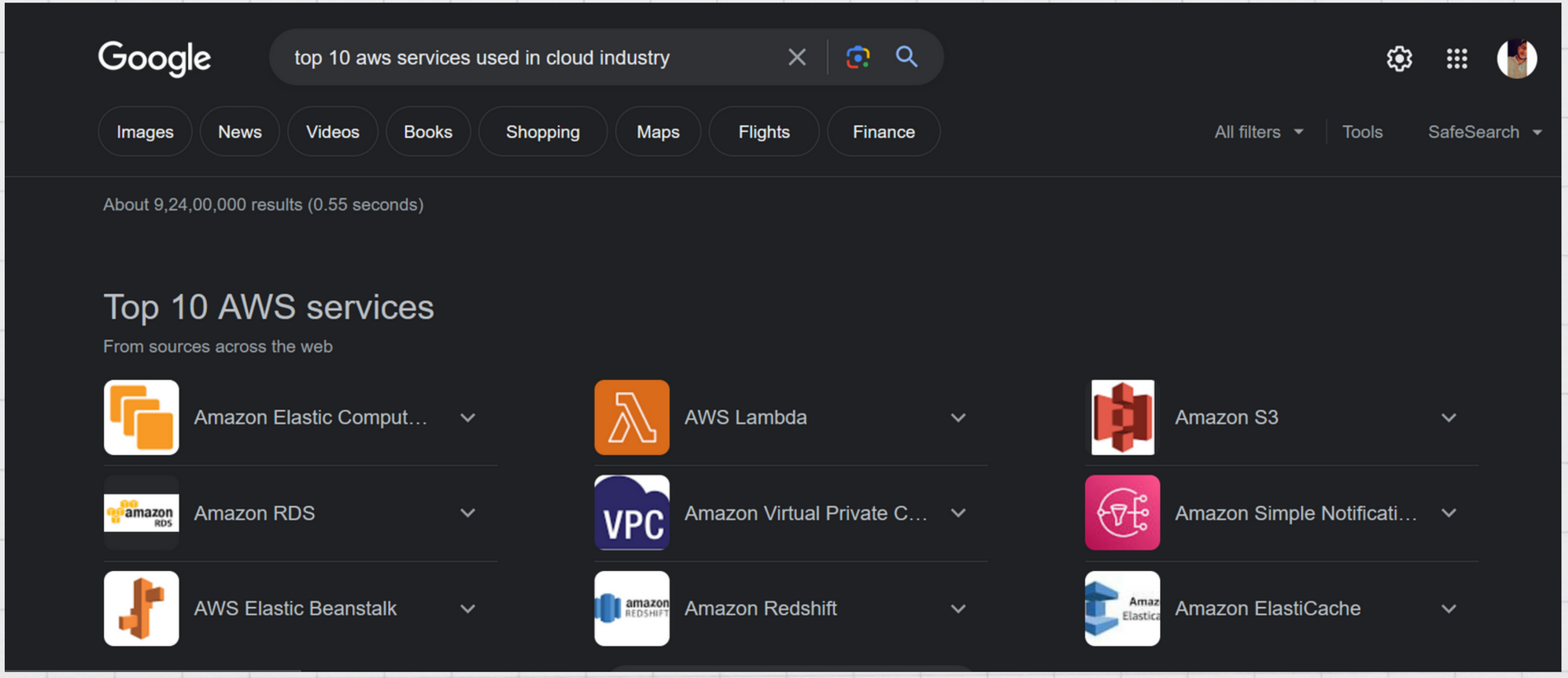
AWS SERVICES USED WIDELY IN CLOUD INDUSTRY



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AWS SERVICES YOU MUST DEFINITELY KNOW

AWS Core Services

List of the services you MUST definitely know

- AWS IAM
- AWS EC2
- AWS EBS
- AWS VPC
- AWS RDS
- AWS S3
- AWS ECS
- AWS Lambda
- AWS CloudFront
- AWS CloudWatch
- AWS SES
- AWS SNS
- AWS SQS
- AWS DevOps tools (CodePipeline + Code Commit + CodeBuild + CodeDeploy)

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AWS GLOBAL INFRASTRUCTURE

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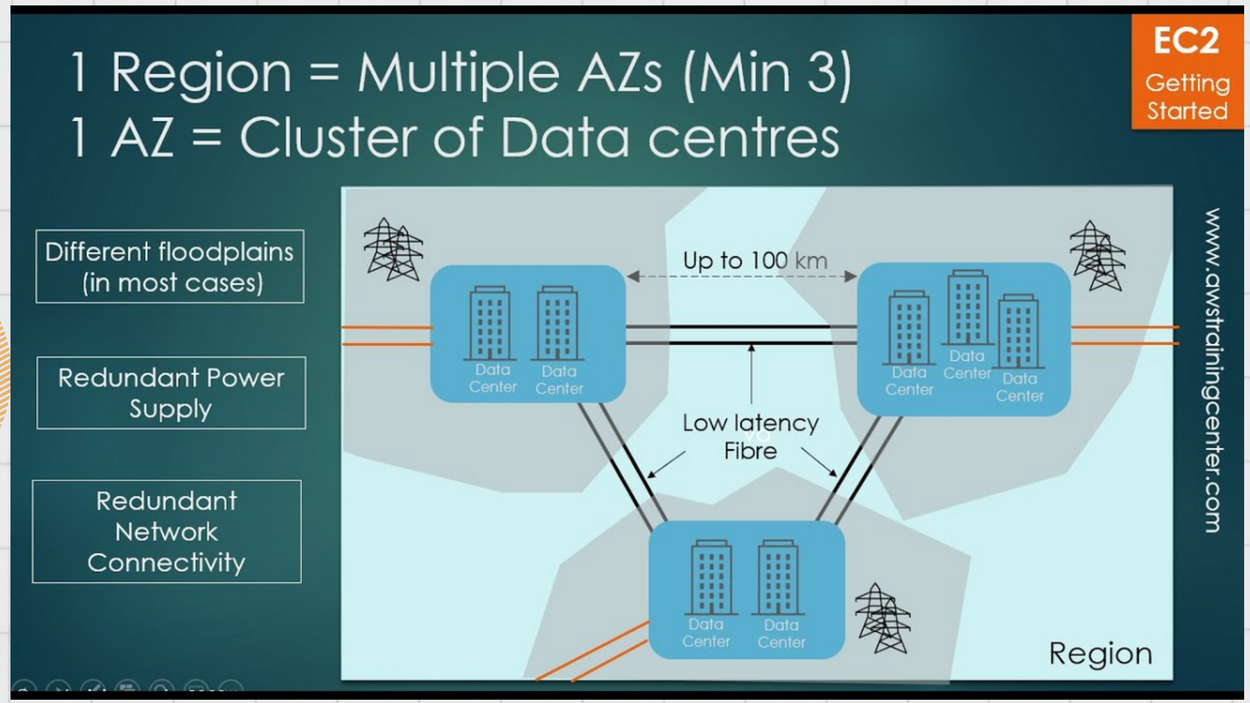
WHAT IS REGION ?



- AWS Regions are geographic locations where AWS infrastructure is located.
- A Region consists of multiple Availability Zones, which are isolated locations within a Region that are designed to be highly available and fault tolerant.
- The number of Availability Zones in a Region varies.
- The cost of AWS services does vary from Region to Region.
- The default Region is US East (N. Virginia).

- US East (N. Virginia)
- US East (Ohio)
- US West (N. California)
- US West (Oregon)
- Canada (Central)
- Europe (Frankfurt)
- Europe (Ireland)
- Europe (London)
- Asia Pacific (Tokyo)
- Asia Pacific (Singapore)
- Asia Pacific (Sydney)
- Asia Pacific (Seoul)
- Asia Pacific (Hong Kong)
- South America (Sao Paulo)
- GovCloud (US)

Tip

EDGE LOCATION > AVAILABILITY ZONES > REGIONS

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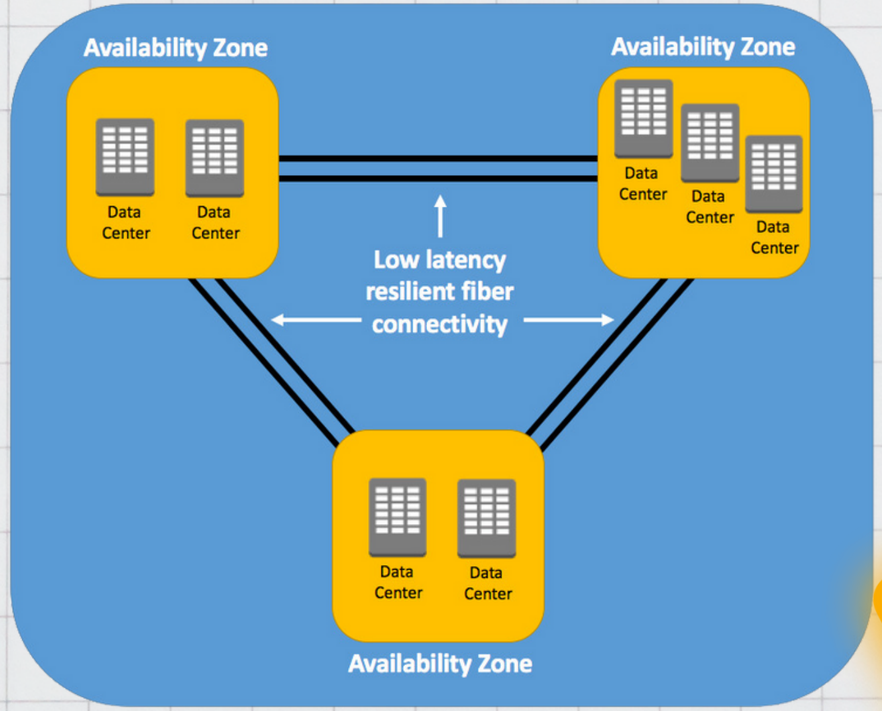
WHAT IS AVILABILITY ZONES?



- AWS Availability Zones are isolated locations within a Region that are designed to be highly available and fault tolerant.
- Availability Zones are physically isolated from each other and have independent infrastructure.
- Availability Zones are connected by high-speed, low-latency networks.
- Each Region has at least 2 AZs, and some Regions have as many as 6 AZs.

Tip

Region

EDGE LOCATION > AVAILABILITY ZONES > REGIONS

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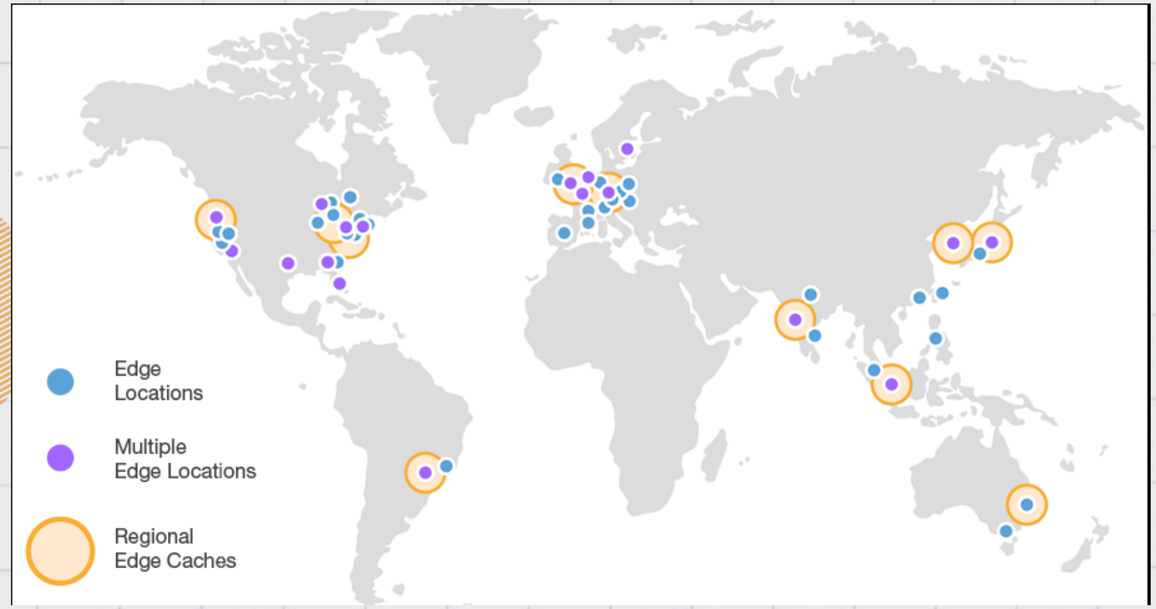
WHAT IS EDGE LOCATIONS?



- AWS Edge locations are points of presence (PoPs) that are located close to end users. They are used to deliver AWS services with low latency and high availability.
- Some of the services that use AWS Edge locations:

  - Amazon CloudFront: CloudFront is a content delivery network (CDN) that uses Edge locations to deliver static and dynamic content to end users.
  - Amazon Route 53: Route 53 is a DNS service that uses Edge locations to improve the performance and reliability of your DNS queries.
  - Amazon Elastic Load Balancing (ELB): ELB uses Edge locations to distribute traffic to your Amazon EC2 instances.

Tip

EDGE LOCATION > AVAILABILITY ZONES > REGIONS

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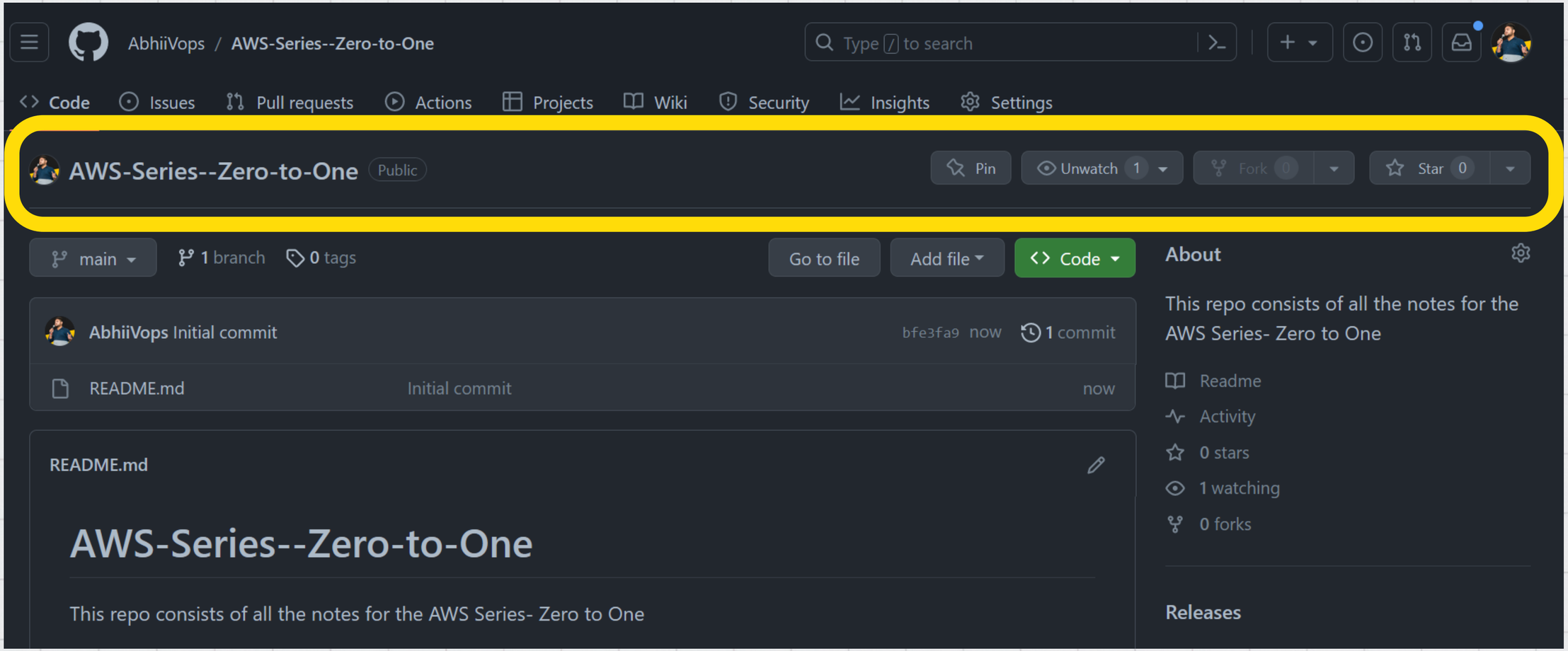
hashnode

https://abhiivops.hashnode.dev/

https://github.com/AbhiiVops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Unwatch 1
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Star 0
main
1 branch
0 tags
Go to file
Add file
Code
About
This repo consists of all the notes for the AWS Series- Zero to One
AbhiiVops Initial commit
bfe3fa9 now
1 commit
README.md
Initial commit
now
Readme
Activity
0 stars
1 watching
0 forks
README.md
AWS-Series--Zero-to-One
This repo consists of all the notes for the AWS Series- Zero to One
Releases

THANKS FOR WATCHING

VopsAbhii

Abhishek Bhattacharjee

abhi.bhattacharya4321

LINK IN THE DESCRIPTION FOR NOTES