How to become

AWSOME

cloud engineer

Complete beginners guide

- Cloud computing 101
- AWS services
- AWS career guidance
- AWS study resources

Quick intro about me

Logeswaran GV

Technical specialist &

Cloud Enthusiast

I'm Logesh, Here I will be taking you to understand the basic concepts of Cloud computing with AWS.

I'm certified **AWS Solution Architect associate** & **AWS Community Builder**.

Hands on experience with AWS Compute, Storage, Networking, Database etc.,

Let's start our cloud learning journey !!!

Overall 14+ years of experience in Development, project delivery and customer support in Banking industry. Worked with Major UAE banks on Risk, Treasury and Compliance applications.

I'm curious about learning new things and it made me to focus on AWS since 2019. I basically comes from the database background and expertise on Technical implementation of financial service products.

Happy Upskilling !!!!

STAY CONNECTED in logeswarangv

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CHAPTER 1

Let’s start

INTRODUCTION

What comes to your mind for IT industry

First, thank you so much for your valuable time to spend here.

Please skip to Chapter 02 if you already working on IT industry for few years.

In early 2000's IT industry is becoming popular; many people started their career in IT field were getting good salary/on-site opportunities. During our childhood days or college days had a dream to get IT jobs and earning more money. I'm sure when we study in our college nobody is there to guide us for next plan of action.

Still, I remember if we want to learn any computer courses need to go some cities or famous centers and pay amount. Also, there were promising courses like with 100% job guaranty (My bad luck Java course didn't help me to get good job)

Now, everything changed drastically you can get degree from online courses. Online learning becomes very popular these days and it made lot of students to the next stages. In recent times, I have seen lot of students become teacher and they teach online through some mediums(YouTube, Facebook,LinedIn etc.,.).

There are many pros and cons when you work for IT. I could see lot of people they very passionate to do things and if your base/foundational knowledge is very strong then it will be easier for to manage any kind of circumstances.

I list here few of the key considerations when you select your career path.

If you are very good at writing programs, then continue as Developer/programmer
If you are not the much good at programming, then go for System admin/Infrastructure support /testing engineer. (Here minimal programming knowledge is enough)

Since technology is getting popular day by day lot of new things making us to upskill ourself and few of your interests here:

- **Cloud Computing**
- **DevOps**
- **Artificial Intelligence(AI)**
- **Machine Learning(ML)**
- **Data science**
- **Cyber security and lot more.,,.**

Recently I started reading some general books and it helped me lot on focusing on your most likely habit. I strongly recommend to stick to the below

- **Interest**:

First success factor for you to do anything.

- **Confidence**:

It makes you to get succeed in all your aspects

- **Consistent**:

Consistent on any of your habits make you expertise

CHAPTER 2

Before cloud computing

Before cloud computing,

We have been in IT industry for many years and during our school/college days (in early 2000's) used many hardware's like Floppy drive, CD/DVD, USB drive(128MB/256/512MB) for storage and personal Computers.

When we talk about organization it will be different departments like IT Infrastructure, development, procurement, testing, business operations team etc.,

Let's talk with single customer facing internet application(**Online banking**), for this application there are Application, database, storage, security and many other factors for smoother run. So, these things it will be hosted inside banks On-prem server(private cloud). During initial stage of this project, IT procurement team will be closely working with some vendor for hardware's/VMWare (for both application & database). This process usually takes minimum 2-4 weeks. Once procurement is done then application/development team will be hosting their application on this server and then testing phase starts.

In this scenario, teams involved are IT Procurement, IT Infrastructure & IT Projects team for server provisioning and usually it istime consuming process. When we talk about traditional server concept, system administrators often used to talk about servers as whole unit that includes **hardware, Operating system(OS), storage and applications**. In case of more usage/any issues on these traditional server system administrators manually added/removed some extra servers. This raised issues on server maintenance and thus originating the concept of Virtual server.

A **virtual server** can be serviced by one or more hosts, and one host may house more than one virtual server. Virtual servers can still be referred to by their function like email server, database server, etc. If the environment is built correctly, virtual servers will not be affected by the loss of a host. Hosts may be removed and introduced almost at will to accommodate maintenance. Virtual servers can be scaled out easily. If the administrators find that the resources supporting a virtual server are being taxed too much, they can adjust the number of resources allocated to that virtual server.

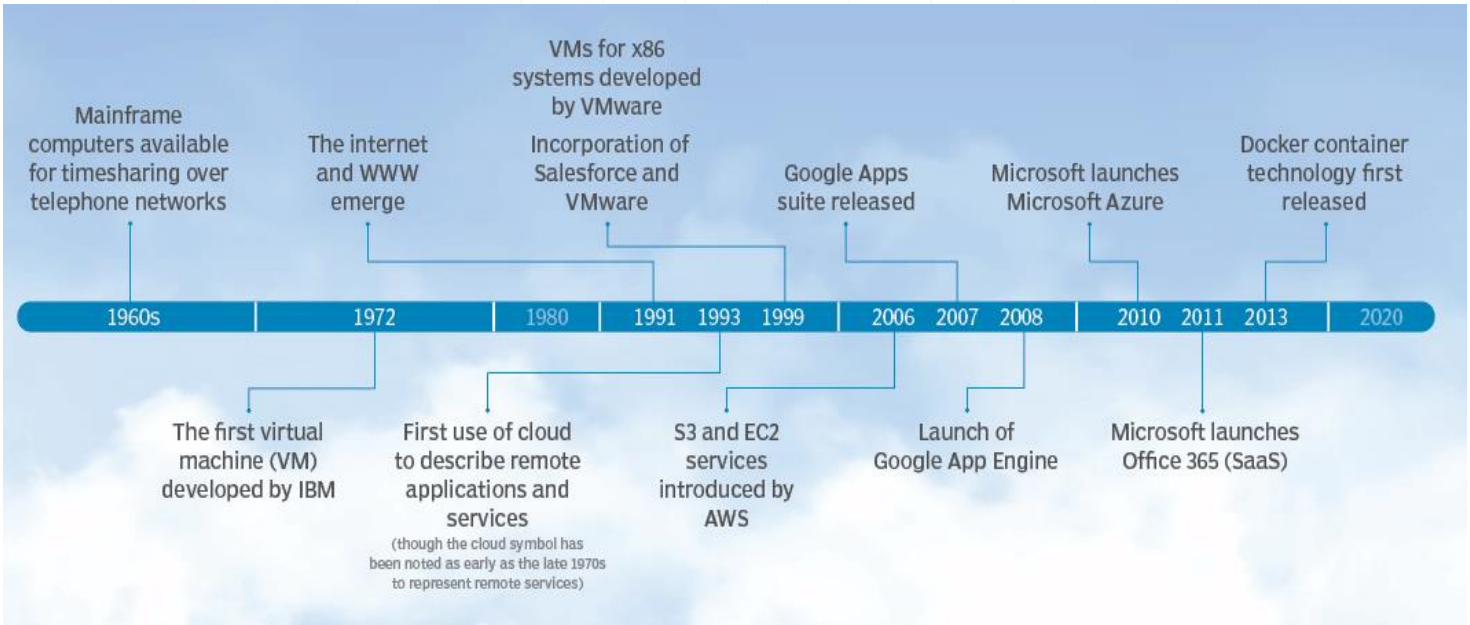
VM technology provided the foundation for cloud compute instances and soon led to the virtualization of other infrastructure resources that constituted the early cloud services.

In summary, **On-premise computing** was the only offering for companies for a long time and software is installed and configured locally.

CHAPTER 3

Cloud computing

Cloud computing era start



Cloud computing is the on-demand delivery of IT resources over the Internet with pay-as-you-go pricing. Instead of buying, owning, and maintaining physical data centers and servers, you can access technology services, such as computing power, storage, and databases, on an as-needed basis from a cloud provider like Amazon Web Services (AWS).

Organizations of every type, size, and industry are using the cloud for a wide variety of use cases, such as data backup, disaster recovery, email, virtual desktops, software development and testing, big data analytics, and customer-facing web applications. For example, healthcare companies are using the cloud to develop more personalized treatments for patients. Financial services companies are using the cloud to power real-time fraud detection and prevention. And video game makers are using the cloud to deliver online games to millions of players around the world.

Benefits:

- Agility
- Elasticity
- Highly available & scalable
- Cost savings
- Go-global in minutes (Worldwide deployments in mins)
- Metered billings (Pay-as-you-go)

Free resources to learn AWS

- AWS SkillBuilder
- AWS Workshops

Cloud computing models

Each type of cloud computing provides different levels of control, flexibility, and management so that you can select the right set of services for your needs.

Let's explain with some analogy for easy understanding (***Pizza as a service – PzaaS***)

Infrastructure as a Service (IaaS)

IaaS contains the basic building blocks for cloud IT. It typically provides access to networking features, computers (virtual or on dedicated hardware), and data storage space. IaaS gives you the highest level of flexibility and management control over your IT resources. It is most similar to the existing IT resources with which many IT departments and developers are familiar.

Real time example: "*Take and Bake" pizza at home, just stuff needed warm and serve that pizza*

Platform as a Service (PaaS)

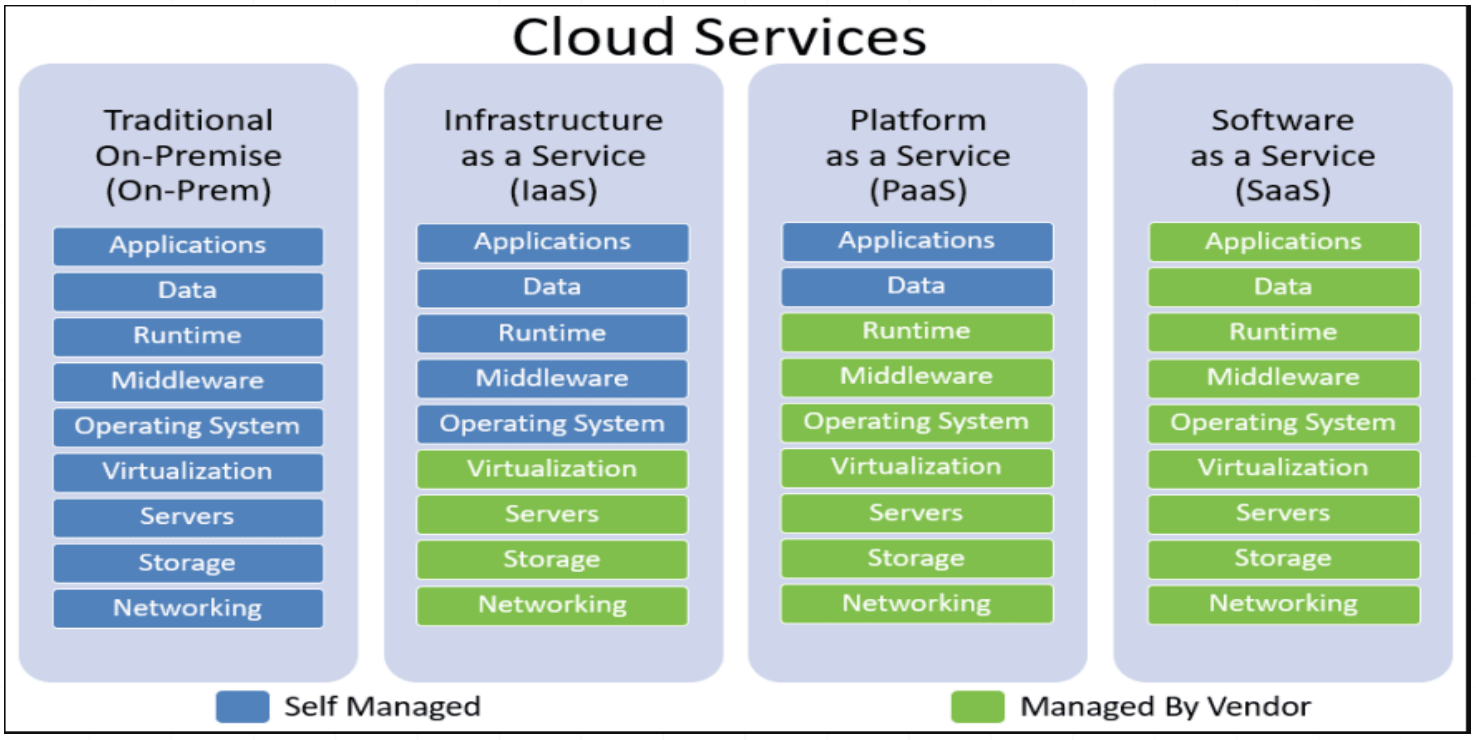
PaaS removes the need for you to manage underlying infrastructure (usually hardware and operating systems) and allows you to focus on the deployment and management of your applications. This helps you be more efficient as you don't need to worry about resource procurement, capacity planning, software maintenance, patching, or any of the other undifferentiated heavy lifting involved in running your application.

Real time example: *"Pizza Delivered" All you need to do is set the table, because the pie will be delivered to you ready-to-eat*

Software as a Service (SaaS)

SaaS provides you with a complete product that is run and managed by the service provider. In most cases, people referring to SaaS are referring to end-user applications (such as web-based email). With a SaaS offering, you don't have to think about how the service is maintained or how the underlying infrastructure is managed. You only need to think about how you will use that particular software.

Real time example: *"Dined out" Just go out and purchase pizza and eat at restaurant*



Cloud computing deployment models

Public Cloud	Hybrid Cloud	Private Cloud
Pros		
➢ Service are owned and operated By a third-party provider	➢ "Best of both" as it combines both public and private cloud	➢ Dedicated to single organization
➢ The maintenance is bared by the service provider	➢ Greater flexibility and more deployment options	➢ Higher security as the resources under within organization
➢ Pay-as-you-go model, so the setting and operating costs are less	➢ Cloud bursting is also possible	➢ Greater flexibility to control the cloud environment
Cons		
➢ Lesser security as the platform is shared	➢ Service are owned and operated By a third-party provider	➢ Purchase and maintenance has to be shared by the organization
➢ Lesser flexibility and control over the cloud environment	➢ Service are owned and operated By a third-party provider	➢ Expensive than public cloud

Why AWS

In your mind now, which cloud I should go for ..

- Largest community of customers and partners
- Highly available, scalable and greatest functionality
- Shortest innovation cycles
- Higher level of security
- Global foot print and proven operational expertise
- Cost savings and flexibility in subscription options

AWS Named as a Leader in the 2022 Gartner Cloud Infrastructure & Platform Services (CIPS) Magic Quadrant for the 12th Consecutive Year

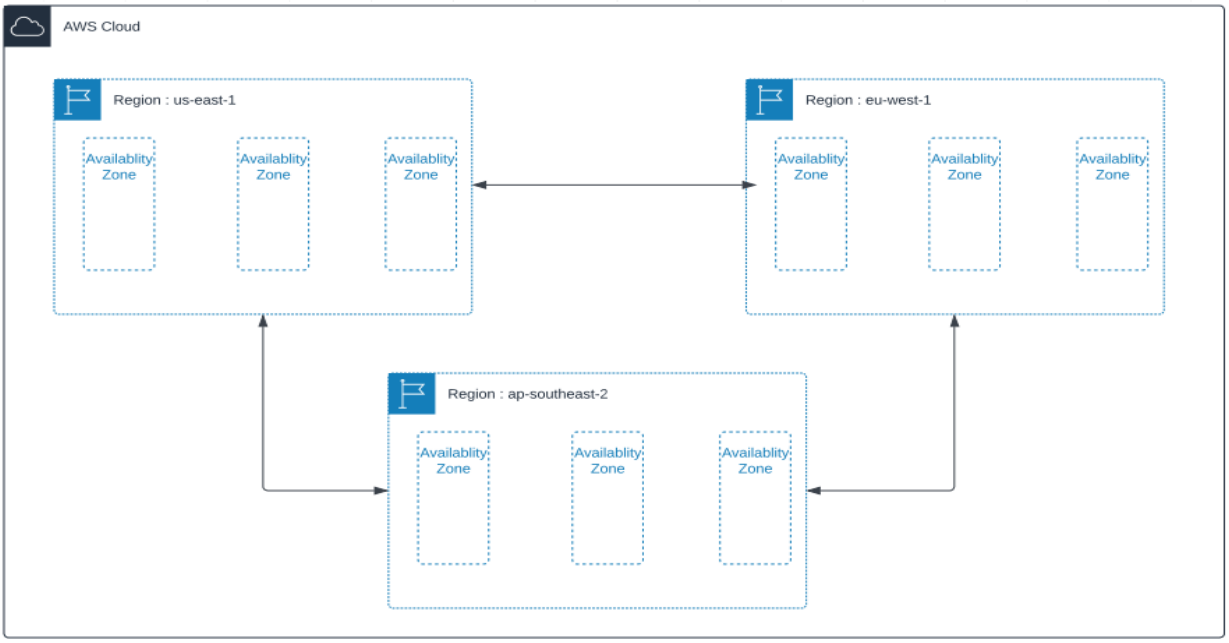
Figure 1: Magic Quadrant for Cloud Infrastructure and Platform Services

CHAPTER 4

AWS Overview

AWS Global Infrastructure

The AWS Global Cloud Infrastructure is the most secure, extensive, and reliable cloud platform, offering over **200+** fully featured services from data centers globally. Whether you need to deploy your application workloads across the globe in a single click, or you want to build and deploy specific applications closer to your end-users with single-digit millisecond latency, AWS provides you the cloud infrastructure where and when you need it.



The AWS Cloud spans **99 Availability Zones** within **31 geographic regions** around the world, with announced plans for 12 more Availability Zones and 4 more AWS Regions in Canada, Israel, New Zealand, and Thailand.

31 Launched Regions
each with multiple Availability Zones (AZs)

410+ Points of Presence
400+ Edge Locations and 13 Regional Edge Caches

99 Availability Zones

245 Countries and Territories Served

32 Local Zones
29 Wavelength Zones
for ultralow latency applications

115 Direct Connect Locations

AWS Global Infrastructure link : https://aws.amazon.com/about-aws/global-infrastructure/

AWS Global Infrastructure

Region: Geographical location around the world and each region has its own Availability zone(logical group of data centres).

Each AWS Region consists of multiple, isolated, and physically separate AZs within a geographic area. Unlike other cloud providers, who often define a region as a single data centre, the multiple AZ design of every AWS Region offers advantages for customers.

Each AZ has independent power, cooling, and physical security and is connected via redundant, ultra-low-latency networks. AWS customers focused on high availability can design their applications to run in multiple AZs to achieve even greater fault-tolerance. AWS infrastructure Regions meet the highest levels of security, compliance, and data protection.

Availability Zones: One or more discrete data centres with redundant power, networking, and connectivity in an AWS Region.

AZs give customers the ability to operate production applications and databases that are more highly available, fault tolerant, and scalable than would be possible from a single data centre. All AZs in an AWS Region are interconnected with high-bandwidth, low-latency networking, over fully redundant, dedicated metro fibre providing high-throughput, low-latency networking between AZs. All traffic between AZs is encrypted. The network performance is sufficient to accomplish synchronous replication between AZs.

AZs make partitioning applications for high availability easy. If an application is partitioned across AZs, companies are better isolated and protected from issues such as power outages, lightning strikes, tornadoes, earthquakes, and more. AZs are physically separated by a meaningful distance, many kilometres, from any other AZ, although all are within 100 km (60 miles) of each other.

Local Zones: AWS Local Zones are a type of infrastructure deployment that places compute, storage, database, and other select AWS services close to large population and industry centers. Run latency sensitive applications closer to end users.

Run applications that require single-digit millisecond latency or local data processing by bringing AWS infrastructure closer to your end users and business centers.

Wavelength Zones: An infrastructure offering optimized for mobile edge computing applications.

Wavelength Zones are AWS infrastructure deployments that embed AWS compute and storage services within communications service providers' (CSP) 5G networks, so application traffic from 5G devices reach application servers running in Wavelength Zones without leaving the telecommunications network. This avoids the latency that would result from application traffic traversing multiple hops across the internet to reach its destination, which allows customers to take full advantage of the latency and bandwidth benefits offered by modern 5G networks.

Some of the key services in AWS

Some important AWS links for your reference:

Documentation : https://docs.aws.amazon.com/

Products : https://aws.amazon.com/products/

Training & Certification : https://aws.amazon.com/training/

Events : https://aws.amazon.com/events/

AWS hands-on : https://workshops.aws/

"Everything Fails All the Time"
-Werner Vogels, Amazon CTO

CHAPTER 5

AWS Services

Featured AWS key services

click each service for AWS documentation

Service	Category	Description	Use cases
EC2	Compute	Secure and resizable compute capacity for virtually any workload	➢ Run cloud-native and enterprise applications ➢ Scale for HPC applications ➢ Develop for Apple platforms ➢ Train and deploy ML applications
EC2 Auto scaling	Compute	➢ Add or remove compute capacity to meet changing demand ➢ Helps you maintain application availability and lets you automatically add or remove EC2 instances using scaling policies that you define	➢ Schedule application scaling ➢ Reduce manual provisioning ➢ Anticipate changes with machine learning
EC2 Image Builder	Compute	Simplifies the building, testing, and deployment of Virtual Machine and container images for use on AWS or on-premises.	➢ Built-in validation support ➢ Improved IT productivity ➢ Simpler to secure ➢ Centralized policy enforcement
LightSail	Compute	Offers easy-to-use virtual private server (VPS) instances, containers, storage, databases, and more at a cost-effective monthly price.	➢ Launch simple web applications ➢ Create custom websites ➢ Build small business applications ➢ Spin up test environments
AWS Batch	Compute	Batch processing, ML model training, and analysis at any scale	➢ Run financial services analyses ➢ Screen for drugs and sequence genomes ➢ Render visual effects ➢ Train ML models

Service	Category	Description	Use cases
ElasticBean Stalk	Compute	Deploy and scale web applications	➢ Quickly launch web applications ➢ Create mobile API backends for your applications ➢ Replatform critical business applications
AWS Fargate	Compute	AWS Fargate is a serverless, pay-as-you-go compute engine that lets you focus on building applications without managing servers	➢ Web apps, APIs, and microservices ➢ Run and scale container workloads ➢ Support AI and ML training applications ➢ Optimize Costs
Lambda	Compute	Serverless, event-driven compute service that lets you run code for virtually any type of application or backend service without provisioning or managing servers	➢ Process data at scale ➢ Run interactive web and mobile backends ➢ Enable powerful ML insights ➢ Create event-driven applications
Outposts	Compute	Run AWS infrastructure and services on premises for a truly consistent hybrid experience	➢ Run AWS Services on premises ➢ Fully managed infrastructure ➢ Truly consistent hybrid experience
Wavelength	Compute	Deliver ultra-low-latency applications for 5G devices	➢ Build media and entertainment applications ➢ Accelerate ML inference at the edge ➢ Develop connected vehicle applications

Service	Category	Description	Use cases
Simple Storage Service(S3)	Storage	Object storage service offering industry-leading scalability, data availability, security, and performance	➢ Build a data lake ➢ Back up and restore critical data ➢ Archive data at the lowest cost ➢ Run cloud-native applications
S3 Glacier	Storage	Purpose-built for data archiving, providing you with the highest performance, most retrieval flexibility, and the lowest cost archive storage in the cloud	➢ Retrievals as quick as milliseconds ➢ Unmatched durability and scalability ➢ Most comprehensive security and compliance capabilities
Elastic Block Store (EBS)	Storage	Easy-to-use, scalable, high-performance block-storage service designed for Amazon EC2	➢ Build your SAN in the cloud for I/O intensive applications ➢ Run relational or NoSQL databases ➢ Right-size your big data analytics engines
Elastic file system-EFS	Storage	Automatically grows and shrinks as you add and remove files with no need for management or provisioning	➢ Simplify DevOps ➢ Modernize application development ➢ Enhance content management systems ➢ Accelerate data science
Storage gateway	Storage	Set of hybrid cloud storage services that provide on-premises access to virtually unlimited cloud storage	➢ Fill your data lake ➢ Modernize interactive file sharing ➢ Back up data to the cloud

Service	Category	Description	Use cases
Virtual private cloud(VPC)	Network	Logically isolated virtual network and it gives you full control over your virtual networking environment, including resource placement, connectivity, and security	➢ Launch a simple website or blog ➢ Host multi-tier web applications ➢ Create hybrid connections
Route 53	Network	➢ A reliable and cost-effective way to route end users to Internet applications ➢ Highly available and scalable Domain Name System (DNS) web service	➢ Manage network traffic globally ➢ Build highly available applications ➢ Set up private DNS
PrivateLink	Network	Establish connectivity between VPCs and AWS services without exposing data to the internet	➢ Securely access AWS services ➢ Maintain regulatory compliance ➢ Migrate to a hybrid cloud ➢ Deliver SaaS services on APN (AWS partners)
Transit gateway	Network	Connect Amazon VPCs, AWS accounts, and on-premises networks to a single gateway	➢ Deliver applications around the world ➢ Rapidly move to global scale ➢ Smoothly respond to spikes in demand ➢ Host multicast applications on AWS
API gateway	Network	Fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale RESTful & WebSocket	➢ Efficient API development ➢ Cost savings at scale ➢ Easy monitoring ➢ Flexible security controls

Service	Category	Description	Use cases
Relational database service-RDS	Database	Collection of managed services that makes it simple to set up, operate, and scale databases in the cloud	➢ Build web and mobile applications ➢ Move to managed databases ➢ Break free from legacy databases
Redshift	Database	Uses SQL to analyze structured and semi-structured data across data warehouses, operational databases, and data lakes, using AWS-designed hardware and machine learning to deliver the best price performance at any scale	➢ Improve financial and demand forecasts ➢ Collaborate and share data ➢ Optimize your business intelligence ➢ Increase developer productivity
DynamoDB	Database	Fully managed, serverless, key-value NoSQL database designed to run high-performance applications at any scale	➢ Develop software applications ➢ Create media metadata stores ➢ Deliver seamless retail experiences ➢ Scale gaming platforms
Aurora	Database	Designed for unparalleled high performance and availability at global scale with full MySQL and PostgreSQL compatibility	➢ Modernize enterprise applications ➢ Build SaaS applications ➢ Deploy globally distributed applications ➢ Go serverless
Neptune	Database	Serverless graph database designed for superior scalability and availability	➢ Transform personalization with customer 360 ➢ Detect fraud patterns ➢ Unleash machine learning predictions ➢ Improve IT security

Service	Category	Description	Use cases
Identity access management(IAM)	Security, identity & management	Securely manage identities and access to AWS services and resources	➢ Apply fine-grained permissions and scale with attribute-based access control ➢ Manage per-account access or scale access across AWS accounts and applications ➢ Establish organization-wide and preventative guardrails on AWS ➢ Set, verify, and right-size permissions toward least privilege
Certificate manager	Security, identity & management	Provision and manage SSL/TLS certificates with AWS services and connected resources	➢ Protect and secure your website ➢ Protect your internal resources ➢ Improve uptime
Cognito	Security, identity & management	Implement secure, frictionless customer identity and access management that scales	➢ Engage customers with flexible authentication ➢ Secure machine-to-machine authentication ➢ Get role-based access to AWS resources
GuardDuty	Security, identity & management	Protect your AWS accounts with intelligent threat detection	➢ Improve security operations visibility ➢ Assist security analysts in investigations ➢ Identify files containing malware ➢ Route insightful information on security findings
Application migration service	Migration & transfer	Move and improve your on-premises and cloud-based applications	➢ On-premises applications ➢ Cloud-based applications ➢ Between AWS Regions ➢ Application modernization

Service	Category	Description	Use cases
Database migration service	Migration & Transfer	Managed migration and replication service that helps move your database and analytics workloads to AWS quickly, securely, and with minimal downtime and zero data loss	➢ Move to managed databases ➢ Remove licensing costs and accelerate business growth ➢ Replicate ongoing changes ➢ Improve integration with data lakes
Server migration service	Migration & Transfer	Migrate your on-premises workloads to AWS	➢ Easy to get started ➢ Cost-effective ➢ Agility ➢ Control ➢ Minimize downtime
Application discovery service	Migration & Transfer	Discover on-premises server inventory and behavior to plan cloud migrations	➢ Map network communication patterns ➢ Mobilize for migration
CodeGuru	Machine learning	Automate code reviews and optimize application performance with ML-powered recommendations	➢ Catch code problems before they hit production ➢ Fix security vulnerabilities ➢ Proactively improve code quality with continuous monitoring
Lex	Machine learning	Build chatbots with conversational AI	➢ Build virtual agents and voice assistants ➢ Automate informational responses ➢ Improve productivity with application bots ➢ Maximize the information trapped in transcripts

Service	Category	Description	Use cases
Amazon EMR	Data Analytics	Easily run and scale Apache Spark, Hive, Presto, and other big data workloads	➢ Perform big data analytics ➢ Build scalable data pipelines ➢ Process real-time data streams ➢ Accelerate data science and ML adoption
Amazon Athena	Data Analytics	Serverless, interactive analytics service built on open-source frameworks, supporting open-table and file formats	➢ Run federated queries ➢ Prepare data for ML models ➢ Build distributed big data reconciliation engines ➢ Analyze Google Analytics data
Amazon Kinesis	Data Analytics	Makes it easy to collect, process, and analyze real-time, streaming data so you can get timely insights and react quickly to new information	➢ Real-time ➢ Fully managed ➢ Scalable
Amazon Glue	Data Analytics	Serverless data integration service that makes it easier to discover, prepare, move, and integrate data from multiple sources for analytics, machine learning (ML), and application development	➢ Simplify ETL pipeline development ➢ Discover data efficiently ➢ Interactively explore, experiment on, and process data ➢ Support various processing frameworks and workloads
Amazon QuickSight	Data Analytics	Powers data-driven organizations with unified business intelligence (BI) at hyperscale	➢ Modern interactive dashboards ➢ Paginated reports ➢ Embedded analytics ➢ Natural language queries

CHAPTER 6

AWS starter-kit

What is AWS Account

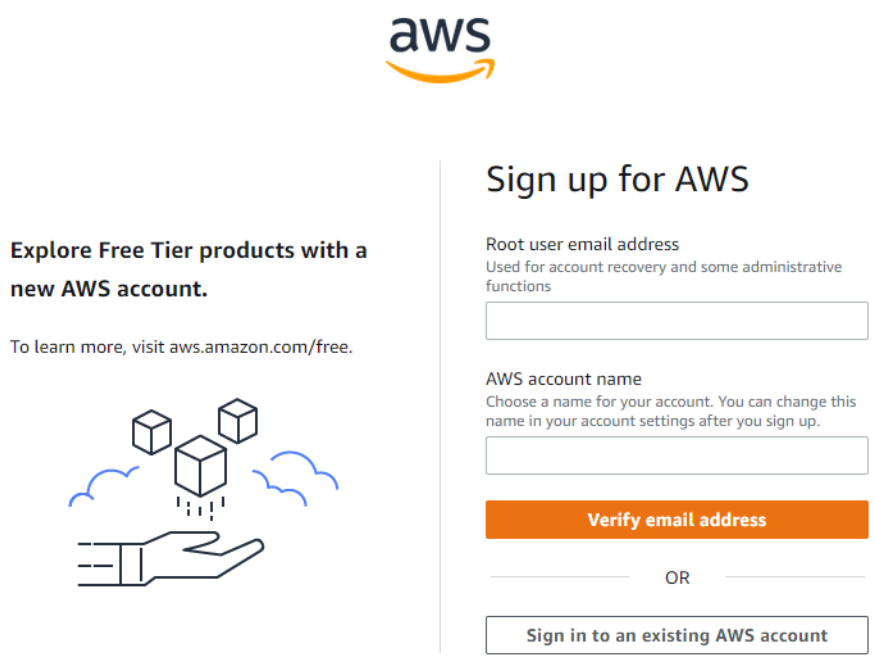
Hope you got some basic idea about AWS and its services.

It's very common that people they do lot of reading through books, watching so many videos and do you think that without practicing you can be expertise! I won't agree. In my view without getting hands dirty you won't be gaining hands-on knowledge.

Let's start exploring how we can create AWS account and do lot of hands on.

To create AWS account do you need the following: ***Unique email account, Credit card, MFA apps***(Authenticator, Google authenticator etc., - used to make your account secured)

Create brand new AWS account using this link : https://portal.aws.amazon.com/billing/signup



Once your AWS account created then you will be seeing AWS management console with all the services. There are some standard best practices you may follow for better usage of this AWS account(will be briefing in short).

Check this link for more about AWS Free tier usage : https://aws.amazon.com/free

AWS support plans

Developer	Recommended if you are experimenting or testing in AWS
Business	Minimum recommended tier if you have production workloads in AWS
Enterprise On-Ramp	Recommended if you have production and/or business critical workloads in AWS
Enterprise	Recommended if you have business and/or mission critical workloads in AWS

AWS Free tier is best starting point to explore hands on labs.

Gain free, hands-on experience with the AWS platform, products, and services. Explore more than 100 products and start building on AWS using the Free Tier.

Three different types of free offers are available

- **Free trials** - Short-term free trial offers start from the date you activate a particular service
- **12 Months free** - Enjoy these offers for 12-months following your initial sign-up date to AWS
- **Always free** - These free tier offers do not expire and are available to all AWS customers

Complete details here : https://aws.amazon.com/free

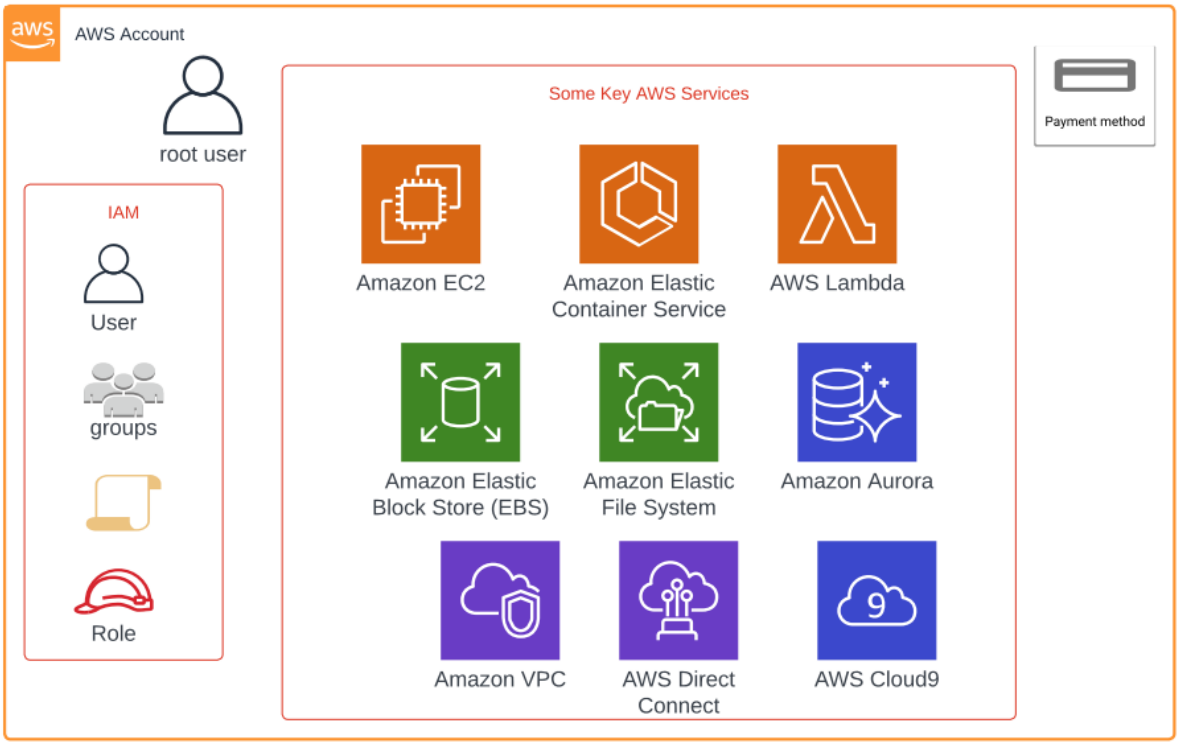
Here is a quick view about free tier offered services(check complete details in the link)

12-Months Free	➢ EC2 – 750 Hours per month ➢ S3 - 5 GB of Standard Storage ➢ 750 Hours of Amazon RDS Single-AZ ➢ 1 Million API Calls Received per month ➢ EFS - 5 GB of storage ➢ ECR - 500 MB-month of Storage
Always Free	➢ DynamoDB - 25 GB of Storage ➢ Lambda - 1,000,000 free requests per month ➢ SNS - 1,000,000 Publishes, 100,000 HTTP/S Deliveries, 1,000 Email Deliveries ➢ CloudWatch - 10 Custom Metrics and 10 Alarms, 1,000,000 API Requests, 5GB of Log Data Ingestion and 5GB of Log Data Archive, 3 Dashboards with up to 50 Metrics Each per Month ➢ SQS - 1,000,000 Requests

Quick view on AWS account

In our last slide, we already gone through how to create AWS free tier account, its features and support plan.

Here is a quick snap of AWS account,



- An AWS account is a container for identities(users) and resources
- By linking your credit card AWS account is created and by default root user has full access for all AWS services
- Single credit card can be used for many AWS account creation process
- AWS account creation process can be the same for all environments (Development, testing, production & DR) using different email addresses
- It's not recommended to use root user for day-to-day operations of using AWS services
- Using root account user create new Admin users (with proper roles/policy attached) with Full administrator access (and Billing module access)
- With root user login, "Enable IAM User & Role access to billing"
- If you didn't assign any policy/roles to new user creation, by default user is no access to any of the AWS resources
- After Admin user is created, then we can create multiple users based on the role/policy (Developers, testers, DBA's etc.,,)
- Best security policy is to enable MFA (Multi Factor Authentication) for all the users including root user

Quick view on AWS account

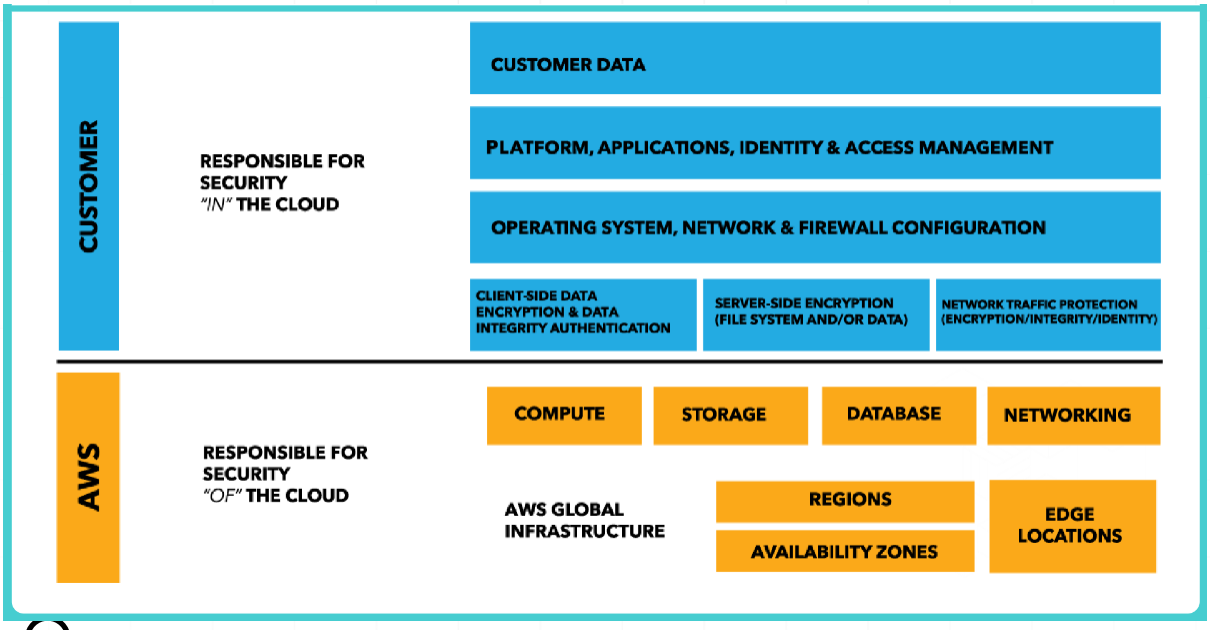
- Recommended best practice is create groups and attach policies/roles to it and users should be mapped to groups (this process makes easier on managing roles/policies for all users)
- Pay-as-you-go model is whatever the services you are using it will be charged per min/requests and charges is deducted from your payment method (Credit card)
- If the user doesn't belong to any group/role/policy by default no access to any of AWS resources
- As a best security practice, set password rotation policy for the users
- AWS Account IAM user can be assigned always with only one username & one password
- An IAM user can have TWO access keys (Active)

Access Key ID: SYAWLASKCORSWAACCESS
Secret Access Key: SYAWLASKCORaws/5SE5CR5ET5ACC3ESS5kEY

How do you get free AWS Credits ?

- By becoming **AWS Community builder** (I got 500$ with one year validity)
- By attending **User group meetings, webinars and events** (check your local chapter)
- AWS **Free tier**
- AWS **Activate** founders & Portfolio
- AWS **Proof of concept** program

AWS Shared responsibility model



AWS responsibility "Security of the Cloud" - AWS is responsible for protecting the infrastructure that runs all the services offered in the AWS Cloud. This infrastructure is composed of the hardware, software, networking, and facilities that run AWS Cloud services

Customer responsibility "Security in the Cloud" – Customer responsibility will be determined by the AWS Cloud services that a customer selects. This determines the amount of configuration work the customer must perform as part of their security responsibilities. For example, a service such as Amazon Elastic Compute Cloud (Amazon EC2) is categorized as Infrastructure as a Service (IaaS) and, as such, requires the customer to perform all of the necessary security configuration and management tasks.

Let's explore with simple example: **Amazon EC2** service:

AWS Responsibility on:

Compute/Storage/Database/Network

Hardware/AWS Global Infrastructure

Customer Responsibility on:

Operating system, Network traffic protection, server-side encryption,

Data, Application management.

Check this link for more details : https://aws.amazon.com/compliance/shared-responsibility-model/

CHAPTER 7

AWS cloud career guidance

Learning path to become AWS cloud engineer

We almost at the end of your AWS complete beginners guide. So far, we have explored lot of exciting things about AWS and it's services. Now it's your turn! After go through all the previous pages, now what's in your mind.

I would appreciate your interest to learn cloud (you may be fresher or experienced IT professional) because of there are lot of future predications about Cloud computing industry. May be in another few years, all companies On-prem data centres will be moved to cloud, all system administrator jobs will be managed by cloud service providers, we may start using high configured laptops(AWS Workspaces family) just by accessing some links(with some charges).

I have seen lot of people from different industry(Aeronautical, Chemical, Mechanical etc.,) transitioned their career into Cloud computing(AWS). Without their dedication and proper guidance, they might have not achieved this. First, they had confident on them to make good decision and followed some expert's guidance.

Here, let me brief about 6-months plan to become AWS cloud engineer. Only on thing keep in your mind, ***"Stay focused and you can achieve anything in this world with your efforts, hard work, focus, confident and consistent - Keep trying"*** Just remember this word, "Everything fails at first time"

You may be thinking that if you are learning AWS(by watching many videos) and hold few certifications really will help you get job in Cloud. Why not, I was also in the same mindset. My journey on upskilling started few years back on many of the technologies. (No proper guidance)

In general, if anybody is telling that this technology/application has good opportunities then immediately start and end up with nothing (due to many reasons). It happened to me as well. Now I will be sharing few suggestions to get a job in cloud and if you follow the same, good luck is with you.

Recent times, I have connected with many AWS experts and following them because to gain more and more knowledge about AWS. Let's start our AWS journey now.

Month1: Cloud practitioner

Plan: If you are very new to AWS/Cloud computing, then there is no option to skip this one. Yes, you need to first book you AWS Cloud practitioner exam(check for some exam discounts). Reason, I'm telling you to book exam is then only you will be focused with some timelines(I also recommend once preparation is done, 1 week before also you may book). Also I would like to highlight here, don't follow so many resource for your learning and it will end up in nothing.

Resources:

AWS Skill Builder → https://aws.amazon.com/training/digital/aws-cloud-practitioner-essentials/

AWS Cloud Quest → https://aws.amazon.com/training/digital/aws-cloud-quest/

4 Week learning plan by Prasad Rao → https://bit.ly/3zPGFdk

Complete cloud beginner guide → https://learntocloud.guide/

Month2: AWS Labs hands-on - Beginner

Plan: You are officially, AWS Certified Cloud practitioner at this stage. Now time to start doings lot of AWS hands on labs(make sure no surprised on your own account AWS billing)

Start with AWS workshop level 100, 200 levels at this stage.

Using your personal AWS account may get the feel that might be some charges without your notice. But no worries you can set AWS Budget alarm to get alerts on your usage. Check the below link how to create budget alarm in AWS console.

Budget alarm : https://go.aws/3YQAwam

KNOWING VS DOING

***KNOWING *** - You watch n number of videos but if you are not doing you may forget

***DOING *** - If you do more hands on, you never forget

Just get your hands dirty on some real time example and surely you will see the results.

Resources:

AWS Workshop → https://workshops.aws/

Adrian Cantrill GitHub → https://github.com/acantril/learn-cantrill-io-labs

How to get free AWS free credits for your hands on (Check Page 30)

My way of accessing AWS Labs without credit card.
I have yearly subscription on **A Cloud guru and Cloud academy** (wait for some time, you will get 50% off on yearly) so I will try all the labs within this.

*Cloud academy subscription received through by becoming AWS Community builder"

Month3: Decide your path

It's time to decide your path now whether to become a Developer, system admin or solution architect or any other specialization. So decide first and then start preparing for it (Check some learning path which suits for you)

Now, I'm going to tell you about the one of the best AWS paid course(for all learning path – Best Return on investment).

Adrian Cantrill course : https://learn.cantrill.io/

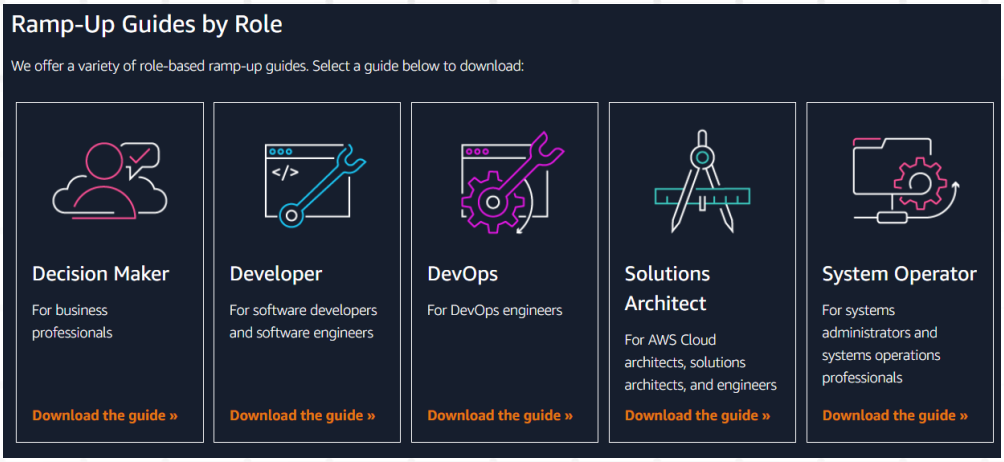
After you decide your career path, then purchase his course and you will be amazed with his detailed explanation. I have purchased Solution architect bundle from his courses and really enjoying it. The main reason to highly recommend this course is his content charged for lifetime(only one time we need to pay) and also, he keeps on update his content on the same course you purchased.

It’s completely up to you to decide once your hands-on labs with second month itself you may start preparing for any one of the associate (SysAdmin, developer and solution architect).

Best way to explore more about AWS by watching youtube videos (***#awsreinvent***)

Bit confused where to check learning path ? AWS is providing well guided learning along study resources here.

AWS Ramp-up guides : https://aws.amazon.com/training/ramp-up-guides/



Now, upon completing 3 months you at least completed either one of the associate level certification. I always recommend the people to appear for Solution architect associate (SAA C03) and then go for AWS SysOps (SOA-C02)

Month4: AWS Labs hands-on – Intermediate

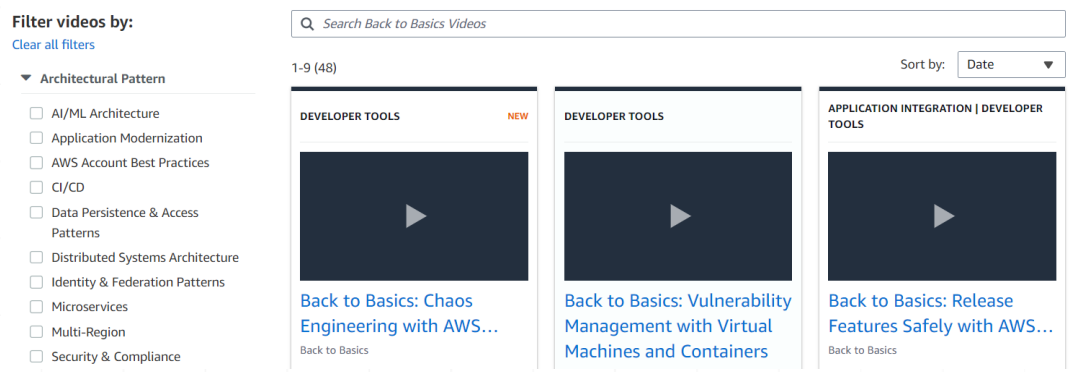
After completing associate level certification, now you start doing **level 300, 400** labs from AWS Workshops.

Once you start exploring these labs, then we will come to know how it integrated with many services and more services coverage.

AWS Workshop → https://workshops.aws/

There are some other AWS resources you refer to get more knowledge.

AWS Back to basics : https://aws.amazon.com/architecture/back-to-basics/

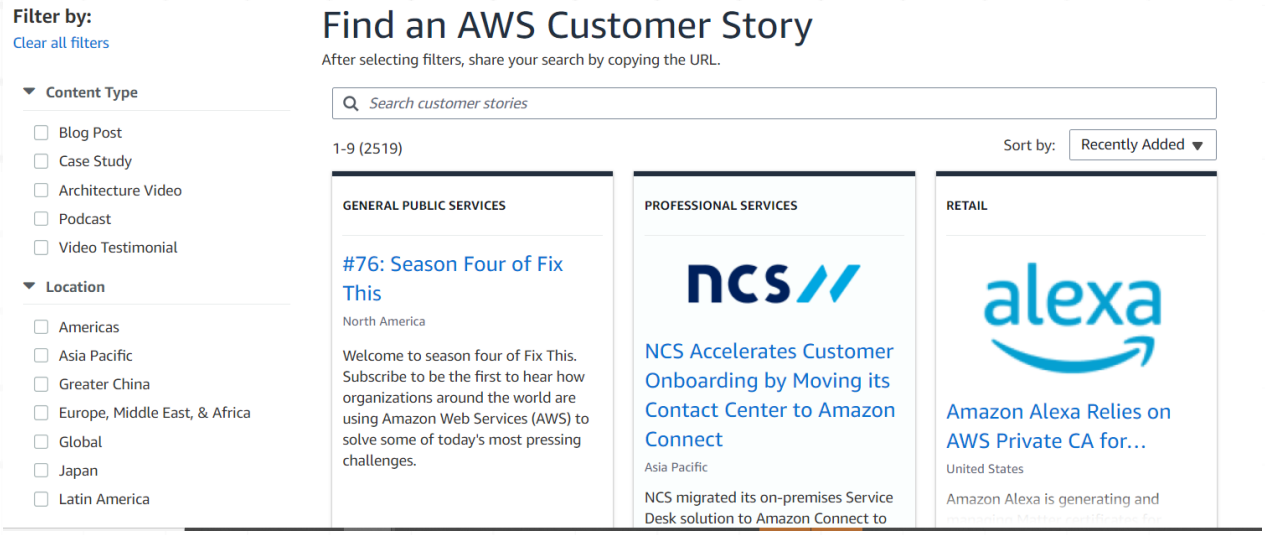


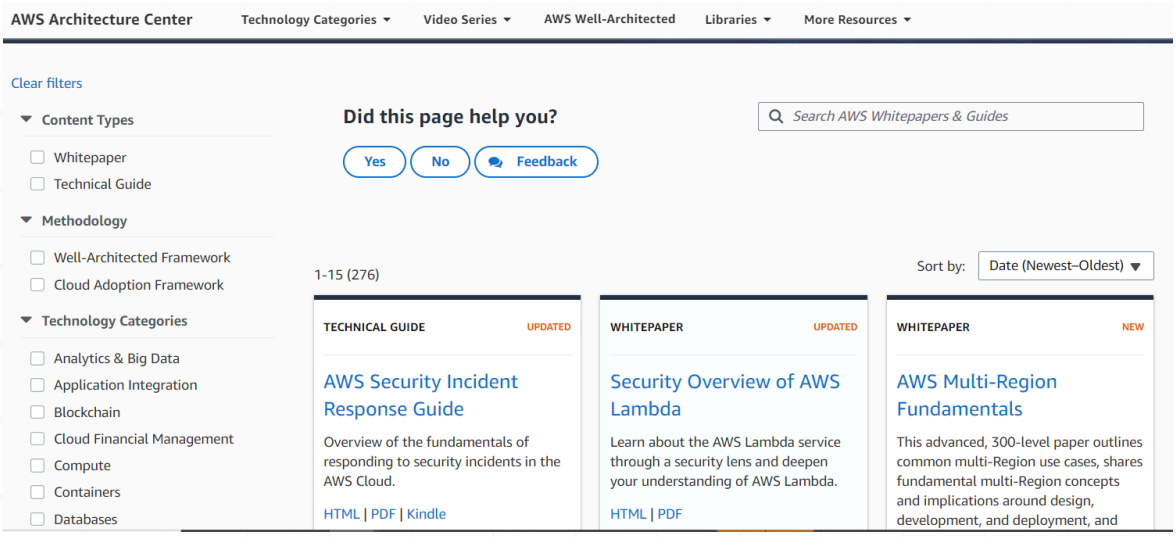
By referring case studies and white papers you will get more real time scenario-based AWS knowledge.

Case studies : https://aws.amazon.com/solutions/case-studies

AWS White papers : https://aws.amazon.com/whitepapers

AWS FAQ's : https://aws.amazon.com/faqs/





Watch this space for all AWS Technical/online events and webinars.

AWS Events : https://aws.amazon.com/events/

Month5: Master level entry

After your so much of credit card usage in AWS, now you will realize that it's worth spending on your learning. It's very simple more you practice and more you face issues then it means that learning in a correct way.

Now, you start preparing any of your **advanced/specialty** level certification **(Networking / Security / SAP / DevOps / Big data).** My only personal suggestion is any advanced or pro certification required more time and preparation so only appear for exam if you get score above 90% in any of the most valuable practice .

Here is an list of amazing **paid resources** for your AWS learning.

A cloud guru : https://acloudguru.com/

Cloud academy : https://cloudacademy.com/

Adrian Cantrill : https://learn.cantrill.io/

Digital cloud training (Neal davis) : https://digitalcloud.training/

Tutorials DOJO : https://tutorialsdojo.com/

AWS Skill builder : https://explore.skillbuilder.aws/learn (With subscription)

If you not ready to spend money for your upskilling, you may refer this amazing free **YouTube channels**.

Pythoholic : https://www.youtube.com/@Pythoholic

Digital cloud training : https://www.youtube.com/@DigitalCloudTraining

Be a better dev: https://www.youtube.com/@BeABetterDev

Cloud with Raj : https://www.youtube.com/@cloudwithraj

BeSA Program : https://www.youtube.com/@be-SA

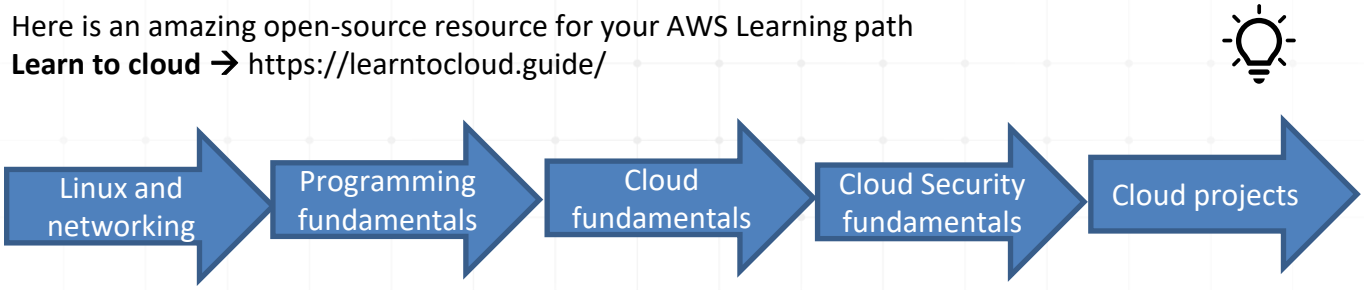
Tech with Lucy : https://www.youtube.com/@TechwithLucy

freeCodeCamp : https://www.youtube.com/@freecodecamp

Learn and grow everyday : https://www.youtube.com/@LearnAndGrowEveryday

AWS Official : https://www.youtube.com/@amazonwebservices/featured

Here is an amazing open-source resource for your AWS Learning path
Learn to cloud → https://learntocloud.guide/



Month6: Connect with experts, prepare for interviews

Finally, you have gained lots of AWS knowledge, certifications, hands-on labs. Now focus on your interview preparation(you may do this in parallel in any time) and narrate your own study notes.

- Understand **14 AWS Leadership Principles** (https://www.amazon.jobs/content/en/our-workplace/leadership-principles)
- Connect with more AWS experts, employees, community builders in LinkedIn
- Share your AWS learning to the world using some medium (Dev.to, medium, LinkedIn, YouTube etc.,)
- Keep your **github profile up-to-date** with all your work (Projects, coding, documentation etc.,)
- Aim to become **AWS community builder, Hero** so that you will get lot of benefits
- Attend AWS user group meeting in your local area(check for AWS user group already there in your place)
- **Participate** in AWS online events to get more benefits (Certification vouchers, mentoring etc,.,)
- Don't blind apply lot of jobs in AWS career portal, only apply if the job description is suits to your profile
- Good understanding of **STAR model** (**Situation, Task, Action & Results**)
- Ask clarification questions if you don't understand technical questions or behavioral questions.
- Tell why you are going with a particular solution and ask for examples

https://www.linkedin.com/in/logeswarangv/

How to get more reaches on LinkedIn ?

- Skills in their profiles on average receive **13 times** more profile views
- **Join groups** to maximize your networking potential and utilize for sharing your content
- Make sure to keep your profile updated **100%**
- **Recommendations and Endorsements**
- Best time to post – **Tuesday & Thursdays between 7am and 9am** your local time

Happy upskilling

Thank you so much for your time spending with me.

All the best for your cloud career journey and always stay connected with me if you need further career guidance.