AWS

aws certified
Cloud Practitioner

GUIDE

SUMMARY:

- **KEY POINTS**
- **AWS SERVICES AND THEIR USES**
- **RESOURCES TO PREPARE FOR THE EXAM**

1. AWS GLOBAL INFRASTRUCTURE:

- **Regions and Availability Zones**: Understand what AWS Regions and Availability Zones are and their importance in designing resilient, fault-tolerant architectures.
- **Edge Locations:** Know the role of Edge Locations in delivering content through services like Amazon CloudFront.

2. CORE AWS SERVICES :

- **Compute**: Amazon EC2 (Elastic Compute Cloud), AWS Lambda (Serverless compute), and Amazon ECS/EKS (Containers).
- **Storage**: Amazon S3 (Scalable object storage), Amazon EBS (Elastic Block Store), and Amazon Glacier (Archival storage).
- **Databases**: Amazon RDS (Relational Database Service), Amazon DynamoDB (NoSQL), and Amazon Redshift (Data Warehousing).
- **Networking**: VPC (Virtual Private Cloud), Route 53 (DNS), and AWS Direct Connect (Private Connectivity).

3. SECURITY, IDENTITY, AND COMPLIANCE :

- **AWS IAM (Identity and Access Management):** Managing users, roles, and permissions.
- **AWS Shield, AWS WAF**: Understanding DDoS protection and web application firewall services.
- **Shared Responsibility Model:** Know what AWS is responsible for versus what you, the customer, are responsible for.
- **Compliance Programs:** Awareness of AWS compliance certifications (e.g., HIPAA, GDPR). AWS best practices.

4. BILLING AND PRICING :

- **AWS Free Tier**: Familiarize yourself with what services and resources are available for free.
- **Pricing Models:** Understand different pricing models, such as Pay-As-You-Go, Reserved Instances, and Spot Instances.
- **Cost Management:** Tools like AWS Cost Explorer, AWS Budgets, and AWS Trusted Advisor.

5. CLOUD CONCEPTS :

- **On-Demand Delivery:** The ability to provision resources on-demand, without upfront commitment.
- **Scalability and Elasticity**: AWS services can automatically scale up or down based on demand.
- **High Availability and Fault Tolerance:** Design architectures that are resilient and can withstand failures.
- **Agility and Speed:** How cloud computing allows faster innovation and time-to-market.

6. ARCHITECTING ON AWS :

- **Well-Architected Framework:** Five pillars: Operational Excellence, Security, Reliability, Performance Efficiency, and Cost Optimization.
- **Design Principles:** Design for failure, decouple components, implement elasticity, and automate wherever possible.

7. CLOUD DEPLOYMENT AND OPERATION:

- **Infrastructure as Code**: AWS CloudFormation and its role in automating infrastructure deployment.
- **Monitoring and Logging**: Tools like Amazon CloudWatch (monitoring and logging), AWS CloudTrail (logging API activity).

8. AWS SUPPORT PLANS :

- **Basic, Developer, Business, and Enterprise Support Plans:** Understand the features and services offered by each plan.
- **Trusted Advisor:** How it provides real-time guidance to help provision resources following

9. APPLICATION INTEGRATION :

- **Amazon SQS (Simple Queue Service) and Amazon SNS (Simple Notification Service**): Basics of decoupling microservices.
- **Amazon API Gateway:** For managing and deploying APIs

10. AWS CLOUD ADOPTION FRAMEWORK (CAF) :

- **Six Perspectives:** Business, People, Governance, Platform, Security, and Operations.

11. MIGRATION AND TRANSFER :

- **AWS Migration Services**: Basic understanding of AWS Migration Hub, AWS Database Migration Service (DMS).
- **Data Transfer:** Services like AWS Snowball, AWS Direct Connect for data transfer and migration.

12. BASIC TROUBLESHOOTING:

- Understand common troubleshooting scenarios related to networking, security, and service limits.
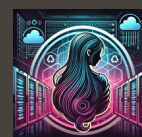
ANALYTICS :

- **Amazon Athena:** An interactive query service that allows you to analyze data stored in Amazon S3 using standard SQL, without requiring server setup.

- **AWS Data Exchange:** A service that makes it easy to subscribe to, use, and share third-party data from trusted data providers.

- **Amazon EMR:** A managed service for large-scale data processing using frameworks like Apache Hadoop, Spark, HBase, and Presto.

- **AWS Glue:** A data integration service that makes it easy to prepare data for analytics with automated extraction, transformation, and loading (ETL) capabilities.

- **Amazon Kinesis:** A real-time data processing service for collecting, processing, and analyzing streaming data at scale.

- **Amazon Managed Streaming for Apache Kafka (Amazon MSK):** A managed service for Apache Kafka that simplifies the creation and management of Kafka clusters.

- **Amazon OpenSearch Service:** A managed service for search and analytics of logs and unstructured data using Elasticsearch and Kibana.

- **Amazon QuickSight:** A business intelligence (BI) service that enables the creation of interactive visualizations and dashboards for data analysis.

- **Amazon Redshift:** A fully managed columnar data warehouse that allows for large-scale data analysis using SQL.
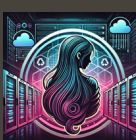
APPLICATION INTEGRATION:

- **Amazon EventBridge:** An event bus service that makes it easy to connect applications using events from AWS, SaaS applications, and your own applications.

- **Amazon Simple Notification Service (Amazon SNS):** A messaging service that allows sending notifications from the cloud using topics and subscriptions.

- **Amazon Simple Queue Service (Amazon SQS)**: A fully managed message queuing service that enables communication between distributed software components.

- **AWS Step Functions:** An orchestration service that simplifies the coordination of AWS service components using visual workflows.

BUSINESS APPLICATIONS:

- **Amazon Connect**: A cloud-based omnichannel contact center service that allows the creation of call centers to enhance the customer experience.

- **Amazon Simple Email Service (Amazon SES)**: A reliable, cost-effective, and flexible email service for marketing, notification, and transactional communications.

CONTAINERS:

- **Amazon Elastic Container Registry (Amazon ECR)**: A fully managed Docker container registry service that simplifies the storage, management, and deployment of container images.

- **Amazon Elastic Container Service (Amazon ECS)**: A highly scalable and fast container management service that supports Docker containers.

- **Amazon Elastic Kubernetes Service (Amazon EKS):** A fully managed Kubernetes service for deploying, managing, and scaling containerized applications using Kubernetes.

COMPUTE:

- **AWS Batch:** A fully managed batch computing service that allows you to run batch jobs at any scale.

- **Amazon EC2:** A cloud computing service that provides virtual instances to run applications.

- **AWS Elastic Beanstalk:** A service that simplifies the deployment and management of web applications and services with an automatically managed underlying infrastructure.

- **Amazon Lightsail**: A simplified cloud service for deploying and managing virtual servers, databases, storage, and networking. ----> (Easy version of EC2).

- **AWS Local Zones:** Extensions of AWS Regions that place compute, storage, database, and other AWS services close to large populations for low latency.

- **AWS Outposts:** A service that brings AWS infrastructure and services on-premises for workloads requiring low latency or local data residency.

- **AWS Wavelength:** A service that integrates AWS compute and storage services with telecom providers' 5G networks for ultra-low latency applications.

CLOUD FINANCIAL MANAGEMENT:

- **AWS Billing Conductor:** A service that allows customization of AWS cost management and billing to reflect your internal cost structures.

- **AWS Budgets:** A financial planning service that allows you to set budgets and track your AWS resource costs and usage.

- **AWS Cost and Usage Report:** A tool that provides detailed reports on your AWS service usage and costs.

- **AWS Cost Explorer:** A tool for visualizing and analyzing AWS costs, allowing you to generate custom reports on usage and spending.

- **AWS Marketplace:** An online platform that allows you to buy and sell software and services that run on AWS.

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CUSTOMER ENGAGEMENT :

- **AWS Activate for Startups:** A program that offers resources, AWS credits, and support to startups to help them grow their business on AWS.

- **AWS IQ:** A platform that connects AWS customers with certified experts to help solve specific problems.

- **AWS Managed Services (AMS):** A service that provides operational management of AWS environments, helping reduce risk and improve efficiency.

- **AWS Support:** A service that provides technical assistance, guidance, and best practices for using AWS services effectively.

DATABASE:

- **Amazon Aurora:** A relational database service compatible with MySQL and PostgreSQL, designed to deliver high performance and availability.

- **Amazon DynamoDB:** A fully managed NoSQL database that offers fast and predictable read and write performance at any scale.

- **Amazon MemoryDB for Redis:** An in-memory database service compatible with Redis, designed for applications demanding high performance.

- **Amazon Neptune:** A fast, reliable graph database service for applications that use graph models.

- **Amazon RDS:** A relational database service that makes it easy to set up, operate, and scale relational databases in the cloud.

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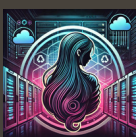
DEVELOPER TOOLS:

- **AWS AppConfig**: A service that allows developers to configure, validate, and deploy application configurations securely.

- **AWS CLI:** A command-line interface for managing AWS services.

- **AWS Cloud9:** A cloud-based integrated development environment (IDE) for writing, running, and debugging code with just a browser.

- **AWS CloudShell:** A browser-based shell environment for managing, interacting with, and exploring AWS resources.

- **AWS CodeArtifact:** A software artifact management service for storing, publishing, and sharing software packages used in development.

- **AWS CodeBuild:** A fully managed build service for compiling source code, running tests, and producing software packages.

- **AWS CodeCommit:** A source control service that facilitates secure and scalable code management.

- **AWS CodeDeploy:** A fully managed deployment service that automates software deployments to a variety of AWS compute services.

- **AWS CodePipeline:** A continuous integration and delivery service to automate deployment pipelines.

- **AWS CodeStar**: A service that enables quick development, building, and deployment of applications on AWS with integrated DevOps tools.

- **AWS X-Ray**: A service for performance analysis and debugging of distributed applications.

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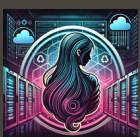
END-USER COMPUTING:

- **Amazon AppStream 2.0**: An application streaming service that allows you to stream desktop applications to any web browser.

- **Amazon WorkSpaces:** A desktop-as-a-service (DaaS) solution that allows you to provision Windows or Linux desktops in the cloud.

- **Amazon WorkSpaces** Web: A service that provides secure and managed access to web applications from compatible browsers.

WEB AND MOBILE FRONT-END:

- **AWS Amplify:** A set of tools and services for building and deploying scalable and secure web and mobile applications.

- **AWS AppSync:** A service that allows you to create flexible GraphQL APIs to synchronize real-time data between applications.

- **AWS Device Farm:** A service for testing mobile and web applications on a wide range of real devices in the cloud.

INTERNET OF THINGS (IOT):

- **AWS IoT Core:** A service that makes it easy to connect IoT devices to the cloud and interact with other AWS services.

- **AWS IoT Greengrass:** A service that allows you to run IoT software locally.

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MACHINE LEARNING :

- **Amazon Comprehend:** A natural language processing (NLP) service that uses machine learning to discover insights and relationships in text.

- **Amazon Kendra:** An intelligent enterprise search service that uses machine learning to improve the accuracy and relevance of search results.

- **Amazon Lex**: A service for building conversational interfaces using voice recognition and natural language processing.

- **Amazon Polly:** A text-to-speech service that turns text into lifelike speech, enabling the creation of talking applications.

- **Amazon Rekognition:** A service that enables image and video analysis to detect objects, people, text, scenes, and activities.

- **Amazon SageMaker**: A fully managed service that allows developers and data scientists to build, train, and deploy machine learning models at scale.

- **Amazon Textract:** An optical character recognition (OCR) service that automatically extracts text and data from scanned documents.

- **Amazon Transcribe:** An automatic speech recognition service that enables speech-to-text conversion.

- **Amazon Translate**: An automatic translation service that quickly and accurately translates text between different languages.
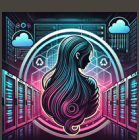
MANAGEMENT AND GOVERNANCE:

- **AWS Auto Scaling:** A service that automatically adjusts compute resources based on demand to maintain optimal performance at the lowest cost.

- **AWS CloudFormation:** A service that allows you to model and provision AWS infrastructure resources quickly using template files.

- **AWS CloudTrail:** A service that tracks API activity in your AWS account, providing event logs for governance, compliance, and auditing.

- **Amazon CloudWatch**: A monitoring service to collect and track metrics, collect and monitor log files, and set alarms.

- **AWS Compute Optimizer:** A service that recommends optimal compute resources for your workloads to improve performance and reduce costs.

- **AWS Config**: A service that enables you to assess, audit, and monitor the configurations of your AWS resources to ensure compliance with internal policies.

- **AWS Control Tower:** A service that simplifies setting up and governing your multi-account AWS environment using best practices.

- **AWS License Manager:** A service that makes it easier to manage software licenses from vendors such as Microsoft and SAP on AWS.

- **AWS OpsWorks**: A configuration management service that provides managed instances of Chef and Puppet for automating server configurations.

- **AWS Organizations:** A service that helps centrally manage and govern multiple AWS accounts within an organization.

MANAGEMENT AND GOVERNANCE II)

- **AWS Proton:** A service that makes it easier to manage the deployment and management of container and serverless applications.

- **AWS Service Catalog**: A service that enables organizations to create and manage catalogs of IT services that are approved for use on AWS.

- **AWS Systems Manager:** A service that provides a unified interface to manage AWS resources and automate operational tasks across your AWS infrastructure.

- **AWS Trusted Advisor:** A service that provides real-time guidance to help you provision your resources according to AWS best practices.

- **AWS Well-Architected Tool:** A service that helps you review and improve your cloud-based architecture using best practices.

MEDIA SERVICES:

- **Amazon Interactive Video Service (IVS)**: A managed live streaming service for creating interactive video experiences.

- **AWS Elemental MediaConvert:** A file-based video transcoding service with broadcast-level features for delivering content across multiple devices.

- **AWS Elemental MediaLive:** A service that enables the encoding and broadcasting of live video streams.

- **AWS Elemental MediaPackage:** A service that packages and encrypts video content for live streaming to multiple devices.

- **AWS Elemental MediaStore:** A storage service optimized for media applications that require high performance for video assets.

- **AWS Elemental MediaTailor:** A service that enables personalized ad insertion for video streams, ensuring a seamless viewing experience.

MIGRATION AND TRANSFER :

- **AWS Application Discovery Service:** A service that helps you plan your cloud migration by discovering and collecting data on your on-premises resources.

- **AWS Database Migration Service (DMS):** A service that helps you migrate databases to AWS quickly and securely.

- **AWS DataSync:** A service that simplifies moving data between on-premises storage and AWS cloud storage.

- **AWS Migration Hub:** A service that helps you discover, plan, and track the migration of your applications to AWS.

- **AWS Server Migration Service (SMS):** A service that automates the migration of on-premises servers to AWS.

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NETWORKING AND CONTENT DELIVERY :

- **Amazon API Gateway:** A managed service that makes it easy to create, publish, maintain, and secure APIs at any scale.

- **Amazon CloudFront:** A content delivery network (CDN) that securely delivers data, videos, and applications to users worldwide with low latency.

- **Amazon Route 53:** A scalable Domain Name System (DNS) web service that provides reliable and cost-effective routing.

- **AWS Cloud WAN:** A wide area network service that helps you build, manage, and monitor a global network across multiple locations.

- **AWS Direct Connect:** A service that allows you to establish a dedicated network connection from your premises to AWS.

- **AWS Global Accelerator:** A service that improves the performance and availability of your applications with global users by routing traffic through AWS's global network infrastructure.

- **AWS PrivateLink:** A service that allows you to securely access AWS services over a private connection without exposing traffic to the public internet.

- **AWS Transit Gateway:** A service that allows you to connect your Amazon Virtual Private Cloud (VPC) environments and on-premises networks through a central hub.

SECURITY, IDENTITY, AND COMPLIANCE:

- **Amazon Cognito:** A service that enables authentication, authorization, and user management for web and mobile applications.

- **AWS Artifact:** A service that provides access to AWS's compliance documentation and agreements, helping you achieve compliance with industry standards.

- **AWS Certificate Manager (ACM):** A service that simplifies the creation, management, and deployment of SSL/TLS certificates for securing websites and applications.

- **AWS CloudHSM:** A hardware security module (HSM) service that helps you meet compliance requirements by managing encryption keys in FIPS 140-2 Level 3 validated hardware.

- **AWS Firewall Manager:** A service that simplifies the management of firewall rules across multiple AWS accounts and resources.

- **AWS Identity and Access Management (IAM):** A service that enables secure access management to AWS services and resources.

- **Amazon Inspector:** A vulnerability management service that automates security assessments to help you identify vulnerabilities and security issues in your AWS workloads
--------> Mainly used with EC2.

- **Amazon Macie:** A data security service that uses machine learning to discover and protect sensitive data stored in AWS.
---------> Mainly Used with S3.

- **AWS Secrets Manager:** A service that helps you securely manage, rotate, and retrieve secrets and credentials to protect access to your AWS resources.

- **AWS Shield:** A managed Distributed Denial of Service (DDoS) protection service for safeguarding web applications from DDoS attacks.

- **AWS Single Sign-On (SSO):** A service that enables single sign-on (SSO) access to multiple AWS accounts and business applications.

- **AWS WAF:** A web application firewall that helps protect web applications from common web exploits.

STORAGE :

- **Amazon Elastic Block Store (EBS):** A block storage service for use with Amazon EC2 instances that provides persistent storage.

- **Amazon Elastic File System (EFS)**: A scalable file storage service for use with Amazon EC2 instances.

- **Amazon FSx:** A family of fully managed file systems for Windows, Lustre, and NetApp ONTAP, providing high-performance file storage for various applications.

- **Amazon S3:** A scalable object storage service that offers high durability and availability for storing and retrieving any amount of data.

- **AWS Backup:** A centralized backup service that automates and manages backups across AWS services and on-premises resources.

- **AWS Storage Gateway:** A hybrid cloud storage service that provides on-premises access to virtually unlimited cloud storage.

Ressources used :

Main Courses :

- AWS SkillBuilder Cloud Practitioner :
- AWS Cloud Practitioner - Cloud Quest
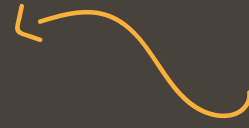
These courses can be found on Coursera too with labs included.

Mock Exams - Youtube (There are many)

For the Labs:
- The platform Nextwork is great and free, they provide free labs beginner friendly.

"Believe you can and you're halfway there."

—THEODORE ROOSEVELT

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We got this!

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