Types of AWS Services

With over 200 different AWS Services, it might seem intimidating to start learning AWS. After all, where to start?

To make this task seem less insurmountable, the services have been divided into the following broad categories:

Compute Services

Compute services provide the processing power required to run various applications and manage servers. These services are crucial for tasks that need high computational power, scalability, and flexibility. They enable businesses to run their applications without needing to maintain physical hardware, allowing for more efficient resource management and cost-effectiveness. Compute services also support a variety of architectures and environments, ensuring compatibility with different types of workloads. Example services in this category include:

- Amazon EC2 (Elastic Compute Cloud)
- AWS Lambda
- Amazon ECS (Elastic Container Service)

Storage Services

Storage services offer scalable and durable storage solutions to meet the needs of data-intensive applications and workloads. These services provide secure and reliable storage for data of all types and sizes, including structured and unstructured data. They ensure data availability and integrity, supporting various use cases such as backup and recovery, data archiving, and content distribution. Storage services also facilitate efficient data management and retrieval, enabling

users to access their data from anywhere at any time. Example services in this category include:

- Amazon S3 (Simple Storage Service)
- Amazon EBS (Elastic Block Store)
- Amazon EFS (Elastic File System)
- AWS Glacier

Database Services

Database services provide managed database solutions for storing and managing data. These services include support for relational, NoSQL, and in-memory databases, catering to a wide range of applications and use cases. Database services offer high availability, scalability, and security, ensuring optimal performance for database operations. They also simplify database management tasks, such as backups, patching, and monitoring, allowing users to focus on their application logic rather than database administration. Example services in this category include:

- Amazon RDS (Relational Database Service)
- Amazon DynamoDB
- Amazon Aurora
- Amazon Redshift

Networking and Content Delivery Services

Networking and content delivery services enhance the performance, security, and availability of applications. These services enable efficient communication between different components of an application and optimize the delivery of content to users worldwide. They also provide tools for managing network traffic, securing data in transit, and ensuring high availability through global distribution and load balancing. Example services in this category include:

- Amazon VPC (Virtual Private Cloud)

- Amazon CloudFront
- AWS Direct Connect
- AWS Elastic Load Balancing (ELB)

Security, Identity, and Compliance Services

Security, identity, and compliance services help protect AWS resources and data. These services provide tools for managing access to resources, encrypting data, and ensuring compliance with regulatory requirements. They enable users to implement security best practices, monitor security events, and respond to security incidents, ensuring the integrity and confidentiality of their data. Example services in this category include:

- AWS IAM (Identity and Access Management)
- AWS KMS (Key Management Service)
- AWS Shield
- AWS WAF (Web Application Firewall)

Management and Governance Services

Management and governance services provide tools for monitoring, managing, and optimizing AWS environments. These services help users gain visibility into their resources, automate management tasks, and ensure compliance with organizational policies. They support efficient resource allocation, cost management, and performance optimization, enabling users to maintain control over their AWS environments. Example services in this category include:

- AWS CloudFormation
- AWS CloudTrail
- AWS Config
- AWS CloudWatch

Machine Learning Services

Machine learning services provide tools and frameworks for building, training, and deploying machine learning models. These services enable users to leverage advanced machine learning techniques for various applications, such as predictive analytics, natural language processing, and image recognition. Machine learning services simplify the process of developing and deploying models, allowing users to focus on creating innovative solutions without needing extensive machine learning expertise. Example services in this category include:

- Amazon SageMaker
- Amazon Comprehend
- Amazon Rekognition

Analytics Services

Analytics services provide tools for analyzing and processing large volumes of data. These services support various data analytics tasks, such as data warehousing, real-time analytics, and big data processing. They enable users to gain insights from their data, make data-driven decisions, and improve business outcomes. Analytics services also offer scalable and cost-effective solutions for managing and analyzing data, ensuring optimal performance and reliability. Example services in this category include:

- Amazon EMR (Elastic MapReduce)
- Amazon Kinesis
- AWS Glue
- Amazon QuickSight

Application Integration Services

Application integration services facilitate communication and data exchange between different applications and systems. These services enable users to build complex workflows, automate processes, and integrate various applications

seamlessly. They support various integration patterns, such as messaging, event-driven architecture, and service orchestration, ensuring reliable and efficient application integration. Example services in this category include:

- Amazon SQS (Simple Queue Service)
- Amazon SNS (Simple Notification Service)
- AWS EventBridge

We will explore each of the mentioned type of AWS service, either dedicating an entire chapter to them or pairing them with a complementary category of service. Each chapter is comprised of sections, with each section being devoted to a service or set of services that we have deemed to be important.

Some chapters also includes a background section, designed to provide readers with the necessary technical concepts, history and background knowledge required to understand the contents of the chapter and the services described within them.

The Background sections are a mandatory read for any and all readers from a non-technical field and/or for people not familiar with Computer Science fundamentals. More learned readers may however choose to either read or skip the section as they see fit.