



# TOP 50 AWS SERVICES

## FOR CLOUD PRACTITIONER & SAA CERTIFICATION

with Definitions and Real-time Examples

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## Top 50 AWS Services for Certification Prep (CCP & SAA)

### I. Compute Services

Service Name	Definition	Real-Time Example
<b>1. Amazon EC2</b>	Elastic Compute Cloud. Provides resizable compute capacity in the cloud as virtual servers (instances). It's the building block of most AWS architecture.	Hosting a company web server or running a batch processing application on a Linux or Windows machine.
<b>2. AWS Lambda</b>	Serverless Compute. Lets you run code without provisioning or managing servers. You only pay for the compute time you consume.	Running a function to resize an image immediately after it is uploaded to an S3 bucket (event-driven processing).
<b>3. Amazon ECS</b>	Elastic Container Service. A highly scalable, high-performance container orchestration service that supports Docker containers.	Deploying and managing a microservices-based application that is packaged into Docker containers.
<b>4. Amazon EKS</b>	Elastic Kubernetes Service. A managed service that makes it easy to run Kubernetes on AWS without needing to install, operate, and maintain your own Kubernetes control plane.	Running a standardized, industry-compliant Kubernetes cluster for large-scale enterprise deployments.
<b>5. AWS Elastic Beanstalk</b>	An easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker.	A developer needs to deploy a new Python web application quickly without managing the underlying EC2, load balancing, or scaling components.
<b>6. AWS Fargate</b>	Serverless Compute for Containers. A serverless compute engine for containers that works with both Amazon ECS and EKS.	Running containerized applications without having to provision, configure, or scale clusters of virtual machines.

## II. Storage Services

Service Name	Definition	Real-Time Example
<b>7. Amazon S3</b>	Simple Storage Service. Object storage built to store and retrieve any amount of data from anywhere on the web (highly durable and available).	Storing website images, videos, and backup files; also used as a "data lake" for big data analytics.
<b>8. Amazon EBS</b>	Elastic Block Store. Provides persistent block storage volumes for use with Amazon EC2 instances.	Attaching a dedicated hard drive (volume) to an EC2 instance to store the operating system and application data.
<b>9. Amazon EFS</b>	Elastic File System. A simple, scalable, elastic file storage system for use with AWS Cloud services and on-premises resources. (Network File System - NFS).	Multiple EC2 instances need concurrent, shared access to the same file system for a content management system.
<b>10. Amazon S3 Glacier</b>	A secure, durable, and extremely low-cost storage class for data archiving and long-term backup.	Archiving regulatory compliance records or old log files that must be kept for 7 years but are rarely accessed.
<b>11. AWS Storage Gateway</b>	A hybrid storage service that enables on-premises software applications to seamlessly use AWS cloud storage.	A company's data center needs to use a local cache while backing up large amounts of data to S3.
<b>12. AWS Backup</b>	A centralized, managed backup service that makes it easy to centrally configure backup policies and monitor backup activity across your AWS resources.	Automating and centralizing backup and retention policies for EC2, RDS, DynamoDB, EBS, and EFS.

### III. Networking & Content Delivery Services

Service Name	Definition	Real-Time Example
<b>13. Amazon VPC</b>	Virtual Private Cloud. A logically isolated section of the AWS Cloud where you can launch AWS resources in a virtual network that you define.	Creating a private, secure network environment in the cloud with specific IP address ranges and subnets.
<b>14. Amazon Route 53</b>	A scalable cloud Domain Name System web service. It translates human-readable domain names into IP addresses.	Registering a new domain name (e.g., mycompany.com) and routing user traffic to the correct EC2 instance or Load Balancer.
<b>15. Amazon CloudFront</b>	A fast Content Delivery Network service that securely delivers data, videos, applications, and APIs to customers globally with low latency.	Caching frequently accessed website assets (like images and CSS files) at edge locations closer to global users.
<b>16. Elastic Load Balancing (ELB)</b>	Automatically distributes incoming application traffic across multiple targets.	Distributing user requests across three EC2 instances to prevent any single server from becoming overwhelmed.
<b>17. AWS Direct Connect</b>	Establishes a dedicated, private network connection from your data center to AWS.	A large corporation needs a reliable, high-speed connection to move massive amounts of data from their on-premises network to a VPC.
<b>18. AWS Global Accelerator</b>	A networking service that improves the availability and performance of your applications with local or global users.	Providing static IP addresses that route traffic to the optimal regional endpoint over the AWS global network.
<b>19. AWS Transit Gateway</b>	A network transit hub that connects your Amazon VPCs and your on-premises networks to a single gateway.	Connecting dozens of VPCs in a complex network to simplify the routing and management of network traffic.

## **IV. Database Services**

Service Name	Definition	Real-Time Example
<b>20. Amazon RDS</b>	Relational Database Service. A managed service that makes it easy to set up, operate, and scale a relational database (MySQL, PostgreSQL, Oracle, etc.) in the cloud.	Running a traditional e-commerce product catalog database that requires structured query language (SQL).
<b>21. Amazon DynamoDB</b>	A fast and flexible NoSQL database service for single-digit millisecond performance at any scale.	A gaming application that requires millions of concurrent read/write requests for user profile and session data.
<b>22. Amazon Aurora</b>	A MySQL and PostgreSQL-compatible relational database built for the cloud, offering up to 5x the performance of standard MySQL.	Migrating a high-volume financial trading database to the cloud while maintaining compatibility with MySQL.
<b>23. Amazon Redshift</b>	A fast, fully managed, petabyte-scale data warehouse service that makes it simple and cost-effective to analyze all your data.	Running complex analytical queries on massive datasets (e.g., billions of customer sales records) for business intelligence.
<b>24. Amazon ElastiCache</b>	Provides an in-memory data store/cache to significantly improve application performance (compatible with Redis and Memcached).	Speeding up a popular website's performance by caching frequent database query results to reduce RDS load.

## V. Security, Identity, and Compliance Services

Service Name	Definition	Real-Time Example
<b>25. AWS IAM</b>	Identity and Access Management. Enables you to securely manage access to AWS services and resources.	Creating a new user for a developer and granting them permissions to only access specific S3 buckets and EC2 instances.
<b>26. AWS KMS</b>	Key Management Service. Makes it easy for you to create and manage cryptographic keys and control their use across a wide range of AWS services and in your applications.	Encrypting the EBS volumes attached to an EC2 instance with a key you control and audit.
<b>27. AWS WAF</b>	Web Application Firewall. Helps protect your web applications or APIs against common web exploits that may affect availability, compromise security, or consume excessive resources.	Blocking common SQL injection or cross-site scripting (XSS) attacks directed at your web application hosted on CloudFront.
<b>28. AWS Shield</b>	A managed Distributed Denial of Service (DDoS) protection service that safeguards applications running on AWS.	Protecting a high-profile public-facing website from large-scale network-layer DDoS attacks.
<b>29. Amazon Inspector</b>	An automated security assessment service that helps improve the security and compliance of applications deployed on AWS.	Running an automated security audit on EC2 instances to check for vulnerabilities and configuration drift.
<b>30. AWS Artifact</b>	A central resource for compliance-related information. Provides on-demand access to AWS security and compliance reports.	Downloading the SOC 2 report to provide proof of compliance to an external auditor.

## **VI. Management, Monitoring, and Governance Services**

Service Name	Definition	Real-Time Example
<b>31. Amazon CloudWatch</b>	A monitoring and observability service that provides data and actionable insights to monitor applications, respond to system-wide performance changes, and optimize resource utilization.	Setting an alarm to notify an administrator if the CPU utilization of an EC2 instance exceeds 80% for 5 minutes.
<b>32. AWS CloudFormation</b>	An Infrastructure as Code (IaC) service that allows you to model, provision, and manage AWS and third-party resources using templates.	Defining an entire three-tier web application architecture (VPC, EC2, RDS, Load Balancer) in a reusable YAML template.
<b>33. AWS CloudTrail</b>	Enables governance, compliance, and risk auditing of your AWS account by logging all API calls (actions) made by a user, role, or AWS service.	Auditing who terminated an EC2 instance at a specific time and which IAM user performed the action.
<b>34. AWS Systems Manager</b>	Gives you visibility and control of your infrastructure on AWS. It simplifies resource and application management, shortens the time to detect and resolve operational problems.	Automatically patching the operating systems of a fleet of EC2 instances across different regions.
<b>35. AWS Organizations</b>	Helps you centrally manage and govern your environment as you grow and scale your AWS resources.	Setting up a multi-account structure for a large company, with separate accounts for Development, Testing, and Production.
<b>36. AWS Config</b>	Provides a detailed view of the configuration of AWS resources in your AWS account. It also records continuous configuration changes.	Tracking all changes made to a Security Group's firewall rules over the last six months for compliance reasons.

## **VII. Application Integration & Serverless Services**

Service Name	Definition	Real-Time Example
<b>37. Amazon SQS</b>	Simple Queue Service. A fully managed message queuing service that enables you to decouple and scale microservices, distributed systems, and serverless applications.	Decoupling a web application's order processing by placing customer orders into a queue for a backend worker service to process later.
<b>38. Amazon SNS</b>	Simple Notification Service. A fully managed messaging service for both application-to-application (A2A) and application-to-person (A2P) communication.	Sending a text message (SMS) or email notification to a customer when their order is shipped, or triggering multiple Lambda functions from one event.
<b>39. Amazon API Gateway</b>	A fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale.	Creating a single entry point (REST or WebSocket API) for a mobile application to interact with multiple Lambda functions and other backend services.
<b>40. AWS Step Functions</b>	A serverless orchestrator that makes it easy to sequence AWS Lambda functions and multiple AWS services into business-critical workflows.	Coordinating a complex, multi-step process like a loan application, involving data validation, credit check (Lambda functions), and a final database update (DynamoDB).

## VIII. Analytics & Migration Services

Service Name	Definition	Real-Time Example
<b>41. AWS DMS</b>	Database Migration Service. Helps you migrate databases to AWS quickly and securely with minimal downtime.	Performing a live migration of an on-premises Oracle database to Amazon Aurora in the AWS Cloud.
<b>42. AWS Snowball</b>	A petabyte-scale data transport solution that uses secure appliances to transfer large amounts of data into and out of the AWS Cloud.	A company with no fast internet connection needs to upload 500 terabytes of video footage to S3 for processing.
<b>43. Amazon Athena</b>	An interactive query service that makes it easy to analyze data directly in Amazon S3 using standard SQL.	Quickly running an ad-hoc SQL query against compressed CSV files stored in an S3 data lake without setting up a database server.
<b>44. Amazon Kinesis</b>	A platform for collecting, processing, and analyzing real-time streaming data.	Processing thousands of real-time sensor data points from IoT devices as they are generated.
<b>45. Amazon QuickSight</b>	A scalable, serverless, embeddable, machine learning-powered business intelligence (BI) service built for the cloud.	Creating a dashboard for sales managers to visualize key performance indicators (KPIs) from data in Redshift.

## IX. Other Essential Services (CCP/SAA)

Service Name	Definition	Real-Time Example
<b>46. Amazon VPC Peering</b>	A networking connection between two VPCs that enables you to route traffic between them privately using IPv4 or IPv6 addresses.	Connecting a Development VPC to a Shared Services VPC (e.g., one containing a centralized logging server) in the same region.
<b>47. AWS Auto Scaling</b>	A service that monitors your applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost.	Automatically launching new EC2 instances when website traffic surges during a holiday sale and terminating them when the traffic drops.
<b>48. AWS Shared Responsibility Model</b>	Defines what you are responsible for (security in the cloud: data, OS, network configuration) and what AWS is responsible for (security of the cloud: infrastructure, global network, hardware).	AWS is responsible for the physical security of the data center, while the customer is responsible for patching the guest OS on an EC2 instance.
<b>49. AWS Pricing Models</b>	Includes On-Demand, Reserved Instances (RIs), Savings Plans, and Spot Instances. A core concept for cost optimization.	A customer uses Spot Instances for a non-critical batch job to save up to 90% on compute costs.
<b>50. AWS Well-Architected Framework</b>	A set of five pillars (Operational Excellence, Security, Reliability, Performance Efficiency, and Cost Optimization) that provide best practices for designing and operating systems in the cloud.	Using the Reliability pillar to guide the design of a system with multi-AZ deployment and automated failover.