

**AWS**  
Services

Team Emertxe





# AWS

Amazon Web Services



- Secure cloud services platform offers to
  - Compute power
  - Database storage
  - Content deliveryand other functionality to help businesses scale and grow



- A Platform for Virtually Every Use Case
- Deep Features and getting deeper by the day
- Security Recognized as Stronger than On-premises
- Deep Visibility into Compliance and Governance



- Flexible, Scalable and Reliable
  - Good Pricing, and interesting free tiers!
  - Good presence, with at least 16 geographic locations
  - Customization
  - Security
- and many more ...



# AWS

## Services



### Compute

Elastic Cloud Compute

Lambda

### Database

DynamoDB

Relational DB Service

Amazon Redshift

### Storage

S3

S3 Glacier

Storage Gateway

### Networking

API Gateway

Virtual Private Cloud

Route 53

### Admin & Security

ID & Access Management

Certificate Manager

Key Management

### Analytic

Kinesis

QuickSight

Athena

### Application Services

Alexa for Business

Workmail

SNS

Simple Workflow

### Deploy & Manage

Cloud Formation

Cloud Watch

Code Trail

### IoT

IoT Core

IoT Greengrass

Amazon FreeRTOS



- Elastic Compute Cloud (EC2)
- Virtual Servers in the Cloud
- Eliminates investment in hardware up front, so you can develop and deploy applications faster
- Launch as many or as few virtual servers as you need, configure security and networking, manage storage and pay only for what you have used
- Re-sizable Compute Capacity



- Virtual computing environments, known as instances
- Preconfigured templates for your instances, known as **Amazon Machine Images (AMIs)**, that package the bits you need for your server (including the operating system and additional software)
- Various configurations of CPU, memory, storage, and networking capacity for your instances, known as **instance types**
- Secure login information for your instances using **key pairs** (AWS stores the public key, and you store the private key in a secure place)





- Storage volumes for temporary data that's deleted when you stop or terminate your instance, known as **instance store volumes**
- Persistent storage volumes for your data using Amazon Elastic Block Store (Amazon EBS), known as **Amazon EBS volumes**
- Multiple physical locations for your resources, such as instances and Amazon EBS volumes, known as **regions** and **Availability Zones**
- A firewall that enables you to specify the protocols, ports, and source IP ranges that can reach your instances using **security groups**



- Static IPv4 addresses for dynamic cloud computing, known as **Elastic IP addresses**
- Metadata, known as **tags**, that you can create and assign to your Amazon EC2 resources
- Virtual networks you can create that are logically isolated from the rest of the AWS cloud, and that you can optionally connect to your own network, known as **virtual private clouds (VPCs)**



- Run code without provisioning or managing servers
- Run code in response to triggers such as S3 upload, DynamoDB updates, Kinesis streams, and API Gateway requests
- You may even call it directly from any web or mobile app
- Supports good variety of programming languages like Node.js, Python, Java, Go ...

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## Services - Lambda - Features

- Extend other AWS services with custom logic
- Build custom back-end services
- Bring your own code
- Completely automated administration
- Built-in fault tolerance
- Automatic scaling
- Run code in response to Amazon CloudFront requests



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## Services - Lambda - Features

- Orchestrate multiple functions
- Integrated security model
- Pay per use
- Flexible resource model



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## Services - DynamoDB

- A key-value and document database
- Fast, Predictable NoSQL Data Store
- A non relational database for applications that need performance at an scale
- Capable of handling any amount of data
- Simple and Cost Effective



- Performance at scale
  - Key-value and document data models
  - Microsecond latency with DynamoDB Accelerator
  - Automated global replication with global tables
  - Real-time data processing with DynamoDB Streams
- Serverless
  - Read/write capacity modes
  - On-demand mode
  - Auto scaling
  - Change tracking with triggers



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## Services - DynamoDB - Features

- Enterprise ready
  - ACID transactions
  - Encryption at rest
  - Point-in-time recovery
  - On-demand backup and restore





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## Services - S3

- Simple Storage Service (S3)
- Scalable Storage in the Cloud
- Storage for the Internet
- Store and retrieve any amount of data, at any time, from anywhere on the web
- Reliable and secure
- Supports encryption



- Storage management and monitoring
  - Storage Management
    - ♦ Batch Operation
    - ♦ Versioning
    - ♦ Multi-Factor Authentication (MFA) Delete
    - ♦ Cross-Region Replication (CRR)
    - ♦ Object Lock
  - Storage Monitoring
    - ♦ Cost Allocation Report
    - ♦ CloudWatch
    - ♦ CloudTrail
    - ♦ Event Notification



- Storage classes
  - S3 Standard
  - S3 Intelligent-Tiering
  - S3 Standard-Infrequent Access (S3 Standard-IA)
  - S3 One Zone-Infrequent Access (S3 One Zone-IA)
  - Amazon S3 Glacier (S3 Glacier)
  - Amazon S3 Glacier Deep Archive (S3 Glacier Deep Archive)



- Access management and security
  - Access Management
    - ♦ Identity and Access Management (IAM)
    - ♦ Access Control List
    - ♦ Bucket Policies
    - ♦ Query String Authentication
    - ♦ Audit Log
  - Access Management
    - ♦ Amazon Virtual Private Cloud
    - ♦ S3 Inventory
    - ♦ S3 Block Public Access
    - ♦ Amazon Macie



- Query in Place
  - S3 Select
  - Amazon Athena
  - Amazon Redshift Spectrum
- Transferring large amounts of data
  - S3 Transfer Acceleration
  - AWS Snowball, Snowball Edge, and Snowmobile
  - AWS Storage Gateway
  - AWS DataSync
  - AWS Transfer for SFTP
  - AWS Partner Network (APN)



- Fully managed service to create, publish, maintain, monitor, and secure APIs at any scale with ease
- Create REST and WebSocket APIs that act as a “front door” for applications to access data, business logic, or functionality from your backend services
- Handles all the tasks involved in accepting and processing up to hundreds of thousands of concurrent API calls, including
  - Traffic management
  - Authorization and access control
  - Monitoring
  - API version management

# AWS

## Services - API Gateway - Features

- Easy API Creation and Deployment
- Support for REST APIs and WebSocket APIs
- Resiliency
- API Lifecycle Management
- SDK Generation
- API Operations Monitoring
- AWS Authorization
- API Keys for Third-Party Developers



- AWS Identity and Access Management (IAM)
- Enables you to manage access to AWS services and resources securely
- Create and manage AWS users and groups, and use permissions to allow and deny their access to AWS resources





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## Services - IAM - Feature

- Enhanced security
- Granular control
- Temporary credentials
- Flexible security credential management
- Leverage external identity systems
- Seamlessly integrated into AWS services





- A common language to describe and provision all the infrastructure resources in required your cloud environment
- CloudFormation allows you to use a simple text file to model and provision, in an automated and secure manner, all the resources needed for your applications across all regions and accounts.
- A file that serves as the single source of truth for your cloud environment



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## Services - Cloud Formation - Features

- Authoring with JSON/YAML
- Safety Controls
- Preview Changes To Your Environment
- Dependency Management
- Cross Account And Cross-Region Management
- Extensibility





- Managed cloud service that lets connected devices easily and securely interact with cloud applications and other devices
- Support billions of devices and trillions of messages, and can process and route those messages to AWS endpoints and to other devices reliably and securely
- Applications can keep track of and communicate with all your devices, all the time, even when they aren't connected



- Easy to use AWS services like
  - AWS Lambda
  - Amazon Kinesis
  - Amazon S3
  - Amazon SageMaker
  - Amazon DynamoDB
  - Amazon CloudWatch
  - AWS CloudTrail
  - Amazon QuickSight

to build IoT applications that gather, process, analyze and act on data generated by connected devices, without having to manage any infrastructure



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## Services - IoT Core - Features

- AWS IoT Device SDK
- Device Gateway
- Message Broker
- Authentication and Authorization
- Registry
- Device Shadow
- Rules Engine



# References



- <https://docs.aws.amazon.com/aws-technical-content/latest/aws-overview/aws-overview.pdf>

Thank You