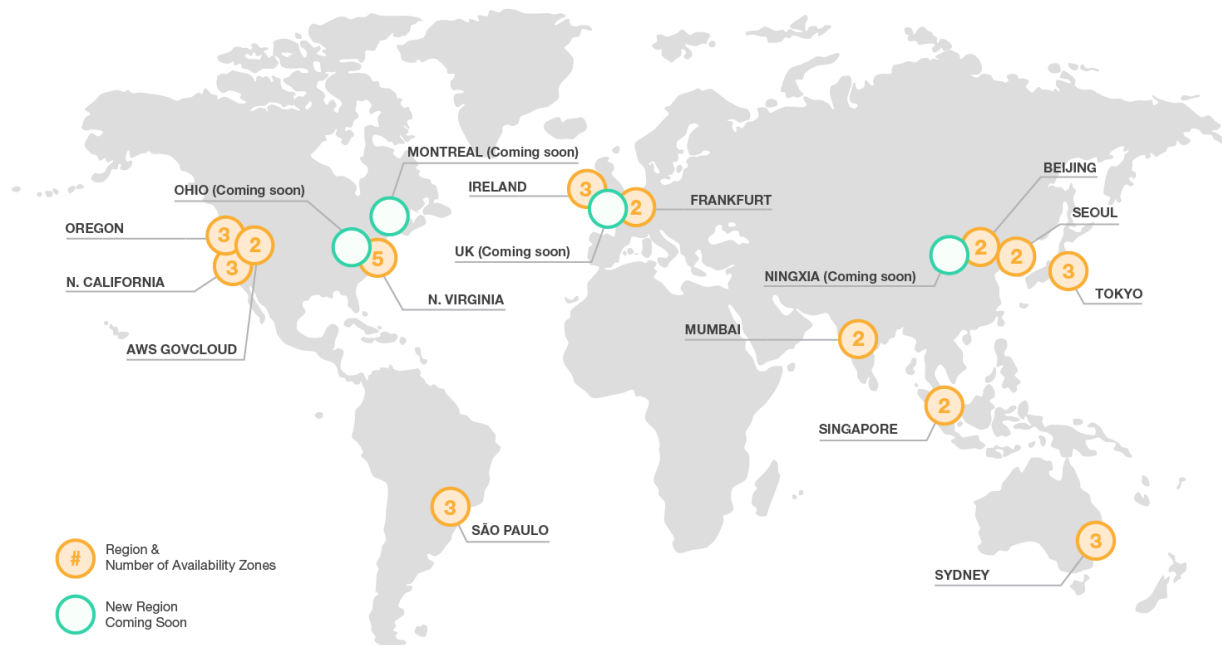
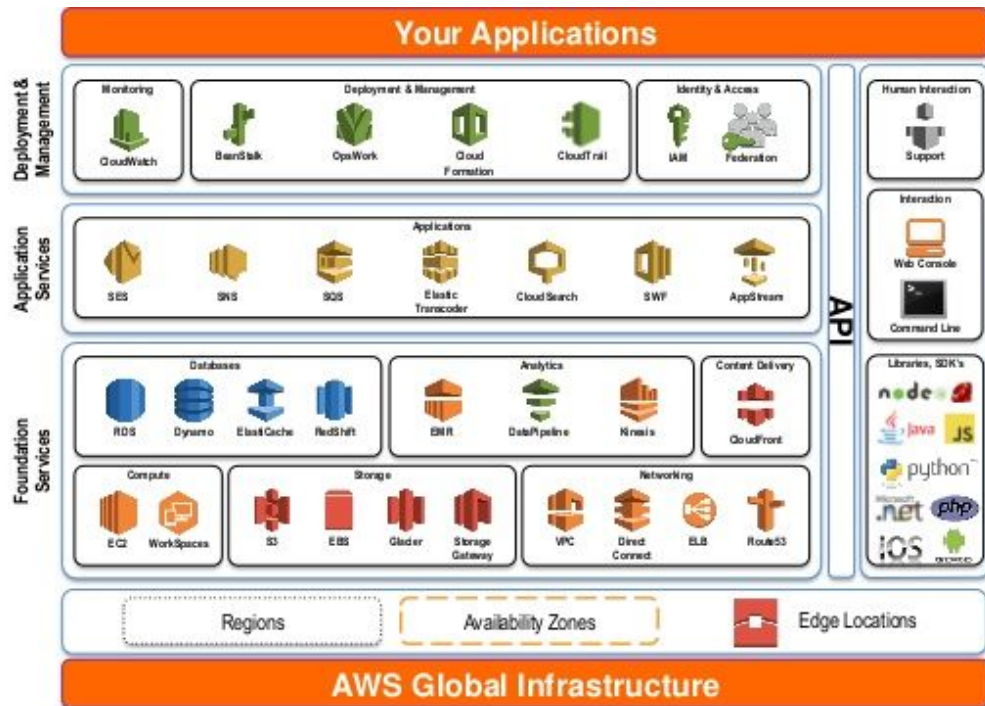


## AWS (Amazon Web Services)



- AWS is located in 14 geographical "regions"
  - North America (5 regions)
  - South America (1 region)
  - Europe / Middle East / Africa (2 regions)
  - Asia Pacific (6 regions)
- AWS Services
  - **Compute**
    - *Amazon Elastic Compute Cloud*, also known as "EC2" is an IaaS service providing virtual servers controllable by an API. Equivalent services include Google Compute Engine and Rack space or on-premises equivalents such as OpenStack or Eucalyptus.
    - *Amazon Elastic Beanstalk* provides a PaaS service for hosting applications, equivalent services include Google App Engine or Heroku or OpenShift for on-premises use.
    - *Amazon Lambda (LAMBDA)* runs code in response to AWS internal or external events such as http requests transparently providing the resource required. Lambda is tightly integrated with AWS but similar services such as Google Cloud Functions and open solutions such as Open Whisk are starting to exist.
  - **Networking**
    - *Amazon Route 53* provides a scalable Managed DNS service providing Domain Name Services.
    - *Amazon Virtual Private Cloud (VPC)* creates a logically isolated set of AWS resources which can be connected using a VPN connection. This competes against on-premises solutions such as OpenStack or HPE Helion Eucalyptus used in conjunction with PaaS software.
    - *AWS Direct Connect* provides dedicated network connections into AWS data centers.
    - *Amazon Elastic Load Balancing (ELB)* automatically distributes incoming traffic across multiple Amazon EC2 instances.
    - *AWS Elastic Network Adapter (ENA)* provides up to 20Gbit/s of network bandwidth to an Amazon EC2 instance
  - **Content delivery**
    - Amazon CloudFront, a content delivery network (CDN) for distributing objects to so-called "edge locations" near the requester
  - **Storage and content delivery**
    - *Amazon Simple Storage Service (S3)* provides Web Service based storage.
    - *Amazon Glacier* provides long-term storage options (compared to S3). High redundancy and availability, but low-frequent access times. Intended for archiving data.
    - *AWS Storage Gateway*, an iSCSI block storage virtual appliance with cloud-based backup.
    - *Amazon Elastic Block Store (EBS)* provides persistent block-level storage volumes for EC2.

- *AWS Import/Export*, accelerates moving large amounts of data into and out of AWS using portable storage devices for transport.
  - *Amazon Elastic File System (EFS)* a file storage service for Amazon Elastic Compute Cloud (Amazon EC2) instances.
- **Database**
    - *Amazon DynamoDB* provides a scalable, low-latency NoSQL online Database Service backed by SSDs.
    - *Amazon ElastiCache* provides in-memory caching for web applications.[49] This is Amazon's implementation of Memcached and Redis.[50]
    - *Amazon Relational Database Service (RDS)* provides scalable database servers with MySQL, Oracle, SQL Server, and PostgreSQL support.[51]
    - *Amazon Redshift* provides petabyte-scale data warehousing with column-based storage and multi-node compute.
    - *Amazon SimpleDB* allows developers to run queries on structured data. It operates in concert with EC2 and S3.
    - *AWS Data Pipeline* provides reliable service for data transfer between different AWS compute and storage services (e.g., Amazon S3, Amazon RDS, Amazon DynamoDB, Amazon EMR). In other words, this service is simply a data-driven workload management system, which provides a management API for managing and monitoring of data-driven workloads in cloud applications.[52]
    - *Amazon Aurora* provides a MySQL-compatible relational database engine that has been created specifically for the AWS infrastructure that claims faster speeds and lower costs that are realized in larger databases.
  - **Deployment**
    - *AWS CloudFormation* provides a declarative template-based Infrastructure as Code model for configuring AWS.
      - **Template Components :** AWSTemplateFormatVersion :: Description :: Parameters :: Mappings :: Conditions :: Resources :: Outputs
    - *AWS Elastic Beanstalk* provides deployment and management of applications in the cloud.
    - *AWS OpsWorks* provides configuration of EC2 services using Chef.
    - *AWS CodeDeploy* provides automated code deployment to EC2 instances.
  - **Management**
    - *Amazon Identity and Access Management (IAM)* is an implicit service, the authentication infrastructure used to authenticate access to the various services.
    - *AWS Directory Service* a managed service that allows connection to AWS resources with an existing on-premises Microsoft Active Directory or to set up a new, stand-alone directory in the AWS Cloud.
    - *Amazon CloudWatch*, provides monitoring for AWS cloud resources and applications, starting with EC2.
    - *AWS Management Console (AWS Console)*, A web-based point and click interface to manage and monitor the Amazon infrastructure suite including (but not limited to) EC2, EBS, S3, SQS, Amazon Elastic MapReduce, and Amazon CloudFront. A mobile application for Android which has support for some of the management features from the console.

- *Amazon CloudHSM* - The AWS CloudHSM service helps to meet corporate, contractual and regulatory compliance requirements for data security by using dedicated Hardware Security Module (HSM) appliances within the AWS cloud.
  - *AWS Key Management Service (KMS)* a managed service to create and control encryption keys.
  - *Amazon EC2 Container Service (ECS)* a highly scalable, fast, container management service, using on Docker containers.
- **Application Services**
  - *Amazon API Gateway* is a service for publishing, maintaining and securing web service APIs.
  - *Amazon CloudSearch* provides basic full-text search and indexing of textual content.
  - *Amazon DevPay*, currently in limited beta version, is a billing and account management system for applications that developers have built atop Amazon Web Services.
  - *Amazon Elastic Transcoder (ETS)* provides video transcoding of S3 hosted videos, marketed primarily as a way to convert source files into mobile-ready versions.
  - *Amazon Simple Email Service (SES)* provides bulk and transactional email sending.
  - *Amazon Simple Queue Service (SQS)* provides a hosted message queue for web applications.
  - *Amazon Simple Notification Service (SNS)* provides a hosted multi-protocol "push" messaging for applications.
  - *Amazon Simple Workflow (SWF)* is a workflow service for building scalable, resilient applications.
  - *Amazon Cognito* is a user identity and data synchronization service that securely manages and synchronizes app data for users across their mobile devices.
  - *Amazon AppStream* is a low-latency service that streams and resources intensive applications and games from the cloud.
- **Analytics**
  - *Amazon Elastic MapReduce (EMR)* Provides a PaaS service delivering Hadoop for running MapReduce queries framework running on the web-scale infrastructure of EC2 and Amazon S3.
  - *Amazon Machine Learning* a service that assists developers of all skill levels to use machine learning technology.
  - *Amazon Kinesis* is a cloud-based service for real-time data processing over large, distributed data streams. It streams data in real time with the ability to process thousands of data streams on a per-second basis. The service, designed for real-time apps, allows developers to pull any amount of data, from any number of sources, scaling up or down as needed. It has some similarities in functionality to Apache Kafka).
  - *Amazon Elasticsearch Service* provides fully managed Elasticsearch and Kibana services.