Amazon Web Services

Technical Fundamentals

Introduction to AWS

Capgemini
CONSULTING.TECHNOLOGY.OUTSOURCING

Agenda : Introduction to AWS

➢ **What is Cloud Computing**

➢ **Cloud Computing and Amazon Web Services**

➢ **AWS Architecture and Terminology**

- Scalability
- Fault Tolerance
- Elasticity
- Elastic IP
- Security Groups
- Regions and Availability zones

Capgemini Public

What is "Cloud Computing"?

> **With cloud computing, organizations can consume shared computing and storage resources rather than building, operating, and improving infrastructure on their own.**

➤ **Cloud computing enables organizations to obtain a flexible, secure, and cost-effective IT infrastructure.**

➤ **These capabilities include compute power, storage, databases, messaging, and other building block services that run business applications.**

Cloud Computing & Amazon Web Services

➢ **Amazon had spent over a decade building and managing the large-scale, reliable, and efficient IT infrastructure that powered one of the world's largest online retail platforms.**

➢ **Amazon has decentralized IT infrastructure.**

➢ **Using AWS, you can demand compute power, storage, and other services in minutes .**

➢ **Have the flexibility to choose the development platform or programming model .**

➢ **This arrangement enabled our development teams to access compute and storage resources on demand, and it has increased overall productivity and agility.**

➢ **You pay only for what you use, with no up-front expenses or long-term commitments, making AWS a cost-effective way to deliver applications.**

Capgemini Public

AWS Terminology

➢ **<u>Scalability</u> : Ability of a system to expand and contract as per the workload demands**

➢ **<u>Fault Tolerance</u> : Ability of a system to operate without interruption in the even of failure of a service**

➢ **<u>Elasticity</u> : Ability of infrastructure to adapt up and down optimally as per current workload**

Capgemini Public

Elastic IP

Elastic IP Addresses

An *Elastic IP address* is a static IP address designed for dynamic cloud computing. An Elastic IP address is associated with your AWS account. With an Elastic IP address, you can mask the failure of an instance or software by rapidly remapping the address to another instance in your account.

An Elastic IP address is a public IP address, which is reachable from the Internet. If your instance does not have a public IP address, you can associate an Elastic IP address with your instance to enable communication with the Internet; for example, to connect to your instance from your local computer.

http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/elastic-ip-addresses-eip.html

Security Groups

Security Groups

A *security group* acts as a virtual firewall that controls the traffic for one or more instances. When you launch an instance, you associate one or more security groups with the instance. You add rules to each security group that allow traffic to or from its associated instances. You can modify the rules for a security group at any time; the new rules are automatically applied to all instances that are associated with the security group. When we decide whether to allow traffic to reach an instance, we evaluate all the rules from all the security groups that are associated with the instance.

http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-network-security.html
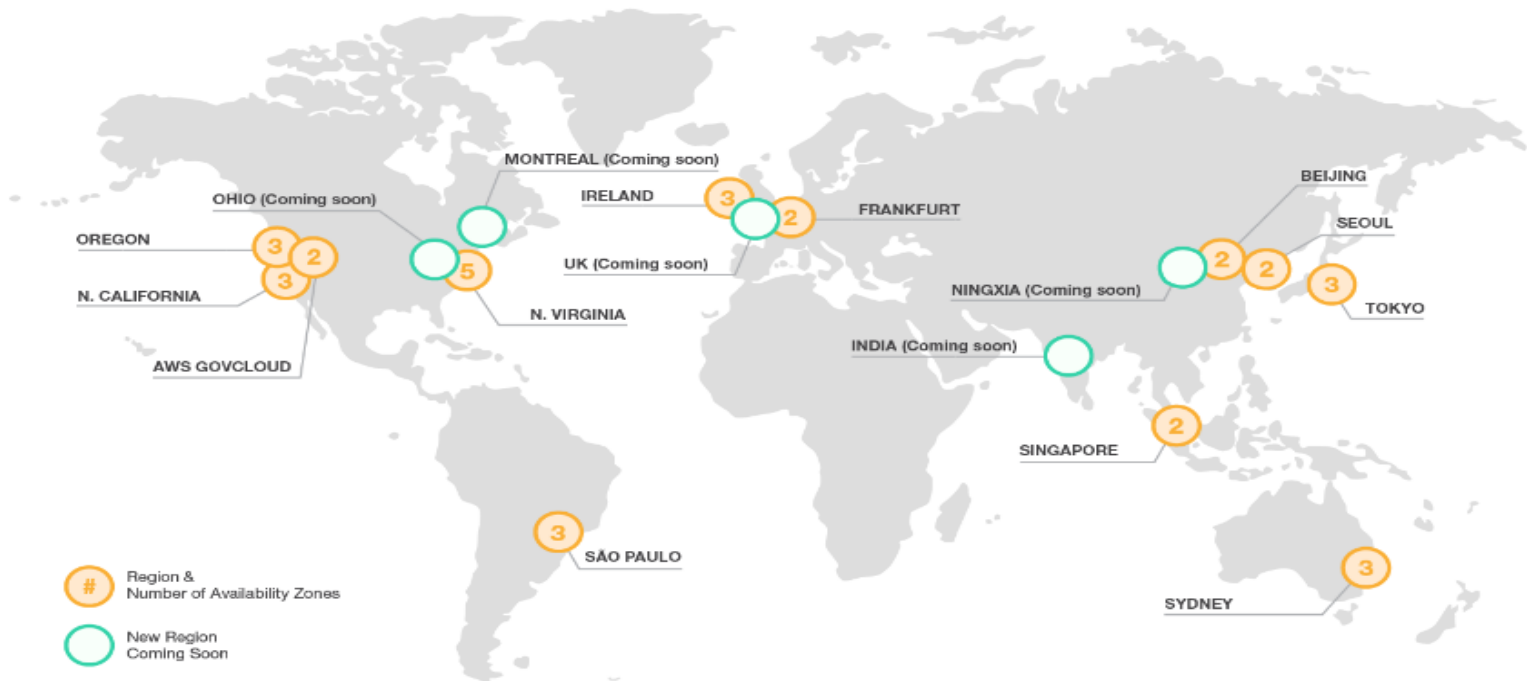
Capgemini Public

AWS Regions and Availability zones

AWS Regions and Availability Zones

The AWS Cloud infrastructure is built around Regions and Availability Zones ("AZs"). A Region is a physical location in the world where we have multiple Availability Zones. Availability Zones consist of one or more discrete data centers, each with redundant power, networking and connectivity, housed in separate facilities. These Availability Zones offer you the ability to operate production applications and databases which are more highly available, fault tolerant and scalable than would be possible from a single data center. The AWS Cloud operates 33 Availability Zones within 12 geographic Regions around the world.

Global Infrastructure

MONTREAL (Coming soon)
IRELAND 3
FRANKFURT 2
BEIJING
SEOUL
OHIO (Coming soon)
OREGON 3 2
N. CALIFORNIA 3
UK (Coming soon)
N. VIRGINIA 5
NINGXIA (Coming soon) 2 2
TOKYO 3
AWS GOVCLOUD
INDIA (Coming soon)
SINGAPORE 2
SÃO PAULO 3
SYDNEY 3

Region & Number of Availability Zones

New Region Coming Soon

http://aws.amazon.com/about-aws/global-infrastructure/

Capgemini Public

Summary : Introduction to AWS

➢ **What is Cloud Computing**

➢ **Cloud Computing and Amazon Web Services**

➢ **AWS Architecture and Terminology**

- Scalability

- Fault Tolerance

- Elasticity

- Elastic IP

- Security Groups

- Regions and Availability zones

Capgemini Public