

## **INFORMATION ON AWS**

EC2 => **E**lastic **C**ompute **C**loud => server in the cloud => virtual machine in AWS

### **What is scaling?**

Scale out => Increasing the number of servers

Scale in => Decreasing the number of servers

Scale up => Increasing the capacity/power of the server ( + CPU, + RAM, Storage, etc)

Scale down => Decreasing the capacity/power of the server ( - CPU, - RAM, Storage, etc)

### **Reserve Instances (RI)**

1-yr term, 3-yr term, up to 75 % discounts

### **Three choices for RI:**

**AURI** -> All Upfront Reserved Instances => biggest discounts

**PURI** -> Partial Upfront Reserved Instances => smaller discounts

**NURI** -> No Upfront Reserved Instances => much smaller discounts

### **AWS Pricing Model:**

1. Pay for what you use
2. Pay less when you reserve
3. Pay less when you use more
4. Pay less as AWS grows => Since 2006, AWS has decreased the prices 75 times

### **Three fundamental drivers of cost with AWS:**

1. **Compute** (charged by hour/second, instance type – t3.micro, x4.large)
2. **Storage** (typically per GB)
3. **Data transfer** (Outbound is aggregated and charged, inbound has no charge, charged typically per GB)

### Four types of instances:

1. On-demand Instances (spiky, short-term, unpredictable workloads)
2. Reserved Instances (long-term, predictable workloads)
3. Spot Instances (up to 90% discount compared to On-demand instances. Spare capacity has and put it on auction, the highest bidder will keep the instance temporarily)

***\*If someone bids higher than you, you may lose the instance. If that happens, you guys have 2 minutes to react.***

4. Dedicated Instances (government, military organization, some companies)

5. Dedicated Host

Dedicated instance is the room, and dedicated host is the hotel

CloudTrail => tracking service => enable traceability

**Region** => Contains at least 1 Availability Zone(AZ) => 50 to 60 miles distance between them

Availability Zone => Contains at least 1 data center (one or more discrete data centers)

Data Center => Has between 50,000 and 80,000 servers

AWS Free Tier:

<https://aws.amazon.com/free>