AWS (Infrastructure as a service)

What is cloud computing:

- We can simply say using of remote servers to store, manage and process data rather than in a local server of physical server

Before of AWS or Cloud computing:

- In previous days If we want a webserver for a company
- We have to buy physical severs
- should have separate leased lines
- should maintain 24/7 up and run with high traffic.

Benefits of aws:

- We can keep all our servers in AWS.
- We can create our own cloud infra structure
- No need to buy expensive physical servers
- Aws will maintain our servers 24/7 up and run
- No need to bother for down time and network failures

Why Aws:

- AWS having global compute market share around 63 %
- Second Server Capacity
- Third different services they are providing
- Fourth Flexible pricing

AWS Regions and Availability Zones:

- Amazon EC2 is hosted in multiple locations world-wide. These locations are composed of regions and Availability Zones.
- Each *region* is a separate geographic area. Each region has multiple, isolated locations known as *Availability Zones*

Your Regions and Availability Zones:

- **To find your regions and Availability Zones using the console**
- Open the Amazon EC2 console at

https://console.aws.amazon.com/ec2/.

- From the navigation bar, view the options in the region selector.

Instances (Vitrual Box) Types:

Distributed Hardware Instance:

- Hardware box can be shared for different users to install different instances
- If we restart Instance our Instance can be changed from one box to another

Dedicated Instance:

- Instance will be sit in only dedicated box same place after restarting also
- Dedicated hosts (box)
    - Total host (box) is Dedicated to partuclar instance.

Difference between Publica ip and Elastic ip:

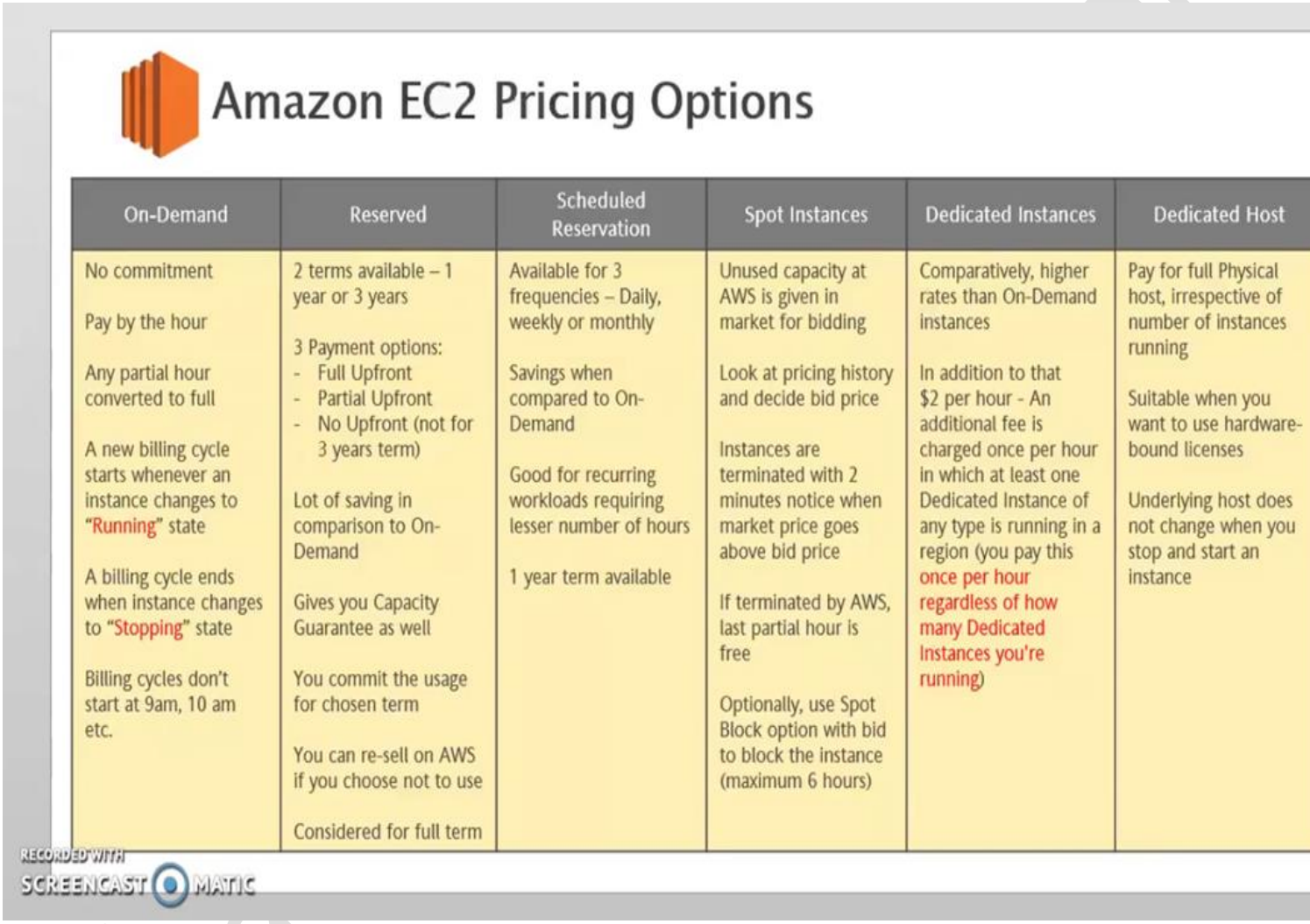
Public Ip:

- It's a Public ip and it will change when you stop and restart instance. We looses the ip. It will not change if you reboot or shutdown

Elastic Ip:

- It's a Public ip and it will Not change even you stop and restart. This ip will be permanent. It will be free until if you stop and didn't used after registering.

AWS Pricing:



Amazon EC2 Pricing Options

On-Demand	Reserved	Scheduled Reservation	Spot Instances	Dedicated Instances	Dedicated Host
No commitment Pay by the hour Any partial hour converted to full A new billing cycle starts whenever an instance changes to "Running" state A billing cycle ends when instance changes to "Stopping" state Billing cycles don't start at 9am, 10 am etc.	2 terms available – 1 year or 3 years 3 Payment options: - Full Upfront - Partial Upfront - No Upfront (not for 3 years term) Lot of saving in comparison to On-Demand Gives you Capacity Guarantee as well You commit the usage for chosen term You can re-sell on AWS if you choose not to use Considered for full term	Available for 3 frequencies – Daily, weekly or monthly Savings when compared to On-Demand Good for recurring workloads requiring lesser number of hours 1 year term available	Unused capacity at AWS is given in market for bidding Look at pricing history and decide bid price Instances are terminated with 2 minutes notice when market price goes above bid price If terminated by AWS, last partial hour is free Optionally, use Spot Block option with bid to block the instance (maximum 6 hours)	Comparatively, higher rates than On-Demand instances In addition to that $2 per hour - An additional fee is charged once per hour in which at least one Dedicated Instance of any type is running in a region (you pay this once per hour regardless of how many Dedicated Instances you're running)	Pay for full Physical host, irrespective of number of instances running Suitable when you want to use hardware-bound licenses Underlying host does not change when you stop and start an instance