✳ Client Server Architecture :-

- There are three types of client server architecture.

① 1 - Tier Architecture.
② 2 - Tier Architecture.
③ 3 - Tier Architecture.

✳① 1 - Tier :- In the 1 - Tier architecture client and server both are in the same device.

- No one can access the 1 - Tier architecture.

② 2 - Tier :-

③ 3 - Tier :-

✳ DNS :- Domain name server :
- It keeps tracks of all hostname & ip address DNS convert ip to Hostname and hostname to IP.

✳ RNS :- Root name server :.
✳ SoA :- Start of authority.

Port Numbers :-

1) HTTP :- 80 / Not secure connection to applicat
2) HTTPS :- 443 / Secure connection to applicatio
③ SSH :- 22 / Connect to Linux machines.
④ RDP :- 3389 / Connect to windows machin

* Client :- which request a resource.

* Server :- which respond to the resource.

Q :- Hyperlization :- Hyperlization is a layer which is used in the virtualization.

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* Clould Computing :-

- Insted of doing computing on on-primises/local machine, Now you are doing computing in the remote location (Clould) that is called clould computing.

- Clould is present in a Remote location.

* **Deployment of clould**
  └ method ⟍ in ↗

(Types of clould)

- There are three types of clould.
① Private clould :- Provides services which are accessed by the organization
② Public clould :- — // — accessed by everyone
③ Hybrid clould :- combination of public & private clould.

* **Services Models :-**

- Infrastructure as a services (IAAS)

- Platform As a services (PAAS)

- Software as a services (SAAS)

* AWS :-

AWS is clould provider, who provides Infrastucture as a services.

- AWS is a public clould provider.
- AWS is a Group of Services, we can access AWS services through Amazon Management Console.
- AWS has a globle infrastructure.

EC2 :- Elastic Compute Clould. It is the first service of AWS.

- EC2 is a AWS service where we can create virtual machine.

* Elastacity :-

- Increasing and decreasing the number of servers/instances based on the load is called Elasticity.

- Elasticity can be archieved in AWS using Auto-scaling.

Auto-scaling = scale out and scale in
$\qquad\qquad\qquad$ increasing $\qquad\qquad$ decreasing.

- Elasticity also called as Horizontal scaling.

* scalbility :- Increasing the capacity of the server is called scalability.
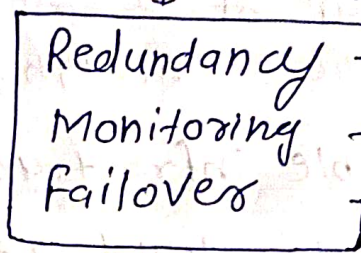
- Scalability :- scale out (up) - scale in down

- Scalability is also called as vertical scaling

- Scalability is long term.

Instance type = Memory + CPU

✷ High Availability ⚡

- The period of time the service is available to the customer is called _High Availability._

High Availability
↓

Redundancy	→ Duplicate/ having the same application of diff server.
Monitoring	→ LB will check: if application is reachable or not using health Check
Failover	→ If one server goes down, other server will take the request sent by LB.

Regions and Availability zones. ✷ ✷ ✷ ✷ ✷

Region :- It is a geo-graphical area, Ex:- Aws-Region=mumbai

- Region is place where Aws has it's infrastructure
- A Region has multiple Datacenters
- A Region has multiple AZ'S. (Availability zone)

Availability zone = simpley a data center (Az)

Server = Instances
- Server/instances are placed in Az's.

✷ Mumbai = ap - south 1 Az's = ap - south - 1a ap - south - 1b ap - south - 1c	ap = Asia Specific - for US, india is in south that's why ap-south.

✷ Regions and availability zones managed by the AWS.

- Az's are sync with each other (network), not Data.

- EC2 instance is specific to Region and Az.

Load Balancer :- LB can distributes the traffic to multiple EC2 instances across AZ.
- LB is specific to Region not Az.