

# Lecture 10

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## Load Balancing

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## Automatic Scaling

# Load Balancing

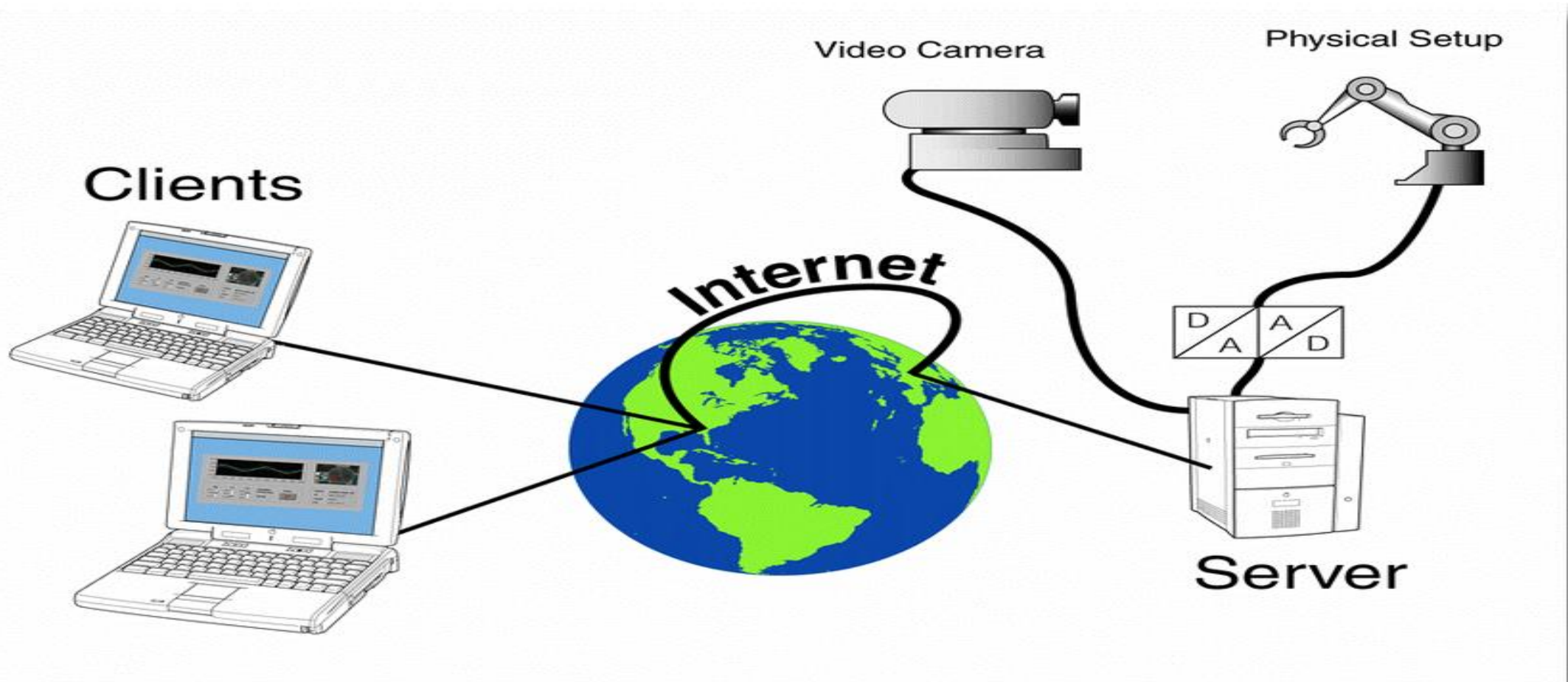
# Load Balancer

Load balancer distribute the web traffic to the available servers.

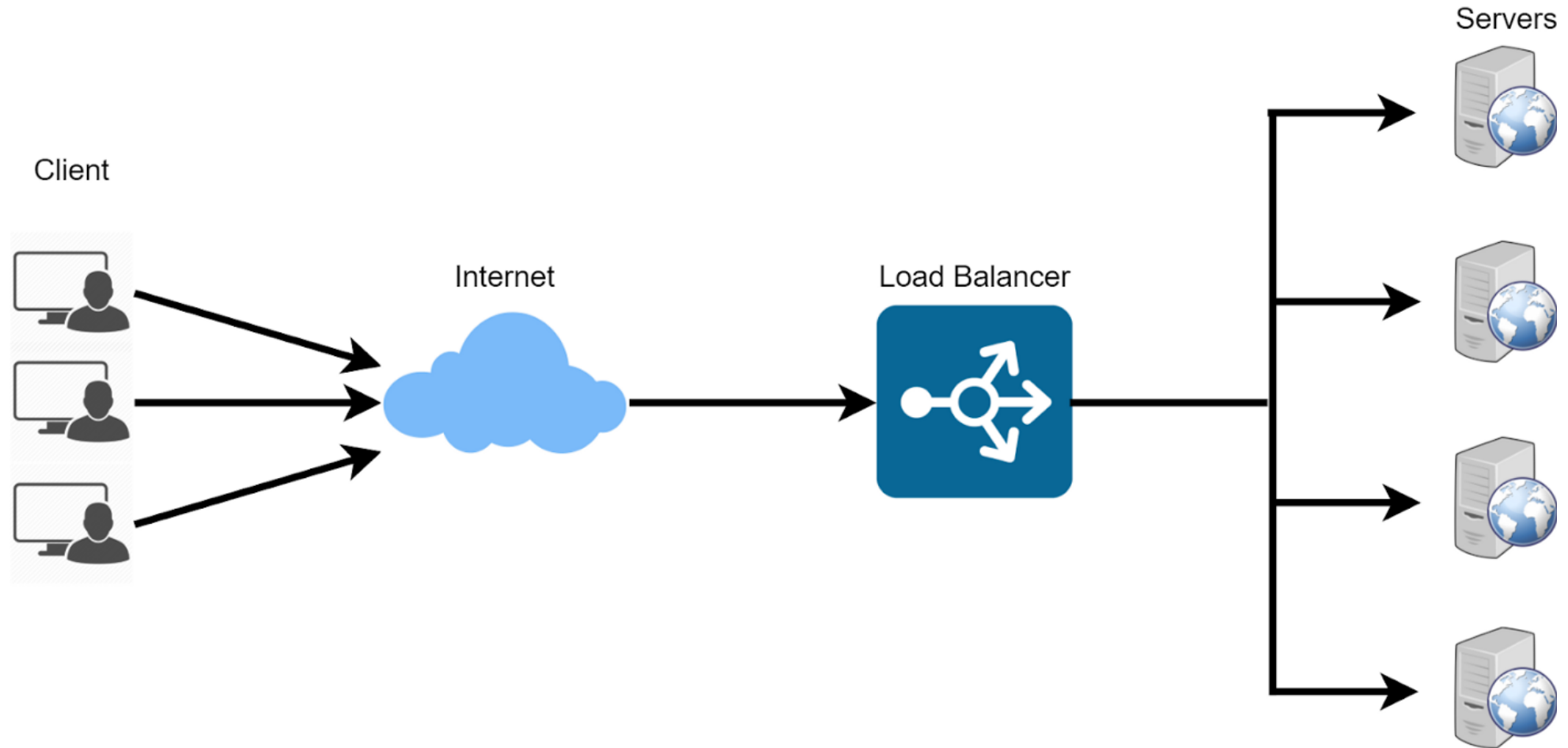
or

Load balancing refers to efficient distributing incoming traffic across a group of backend servers.

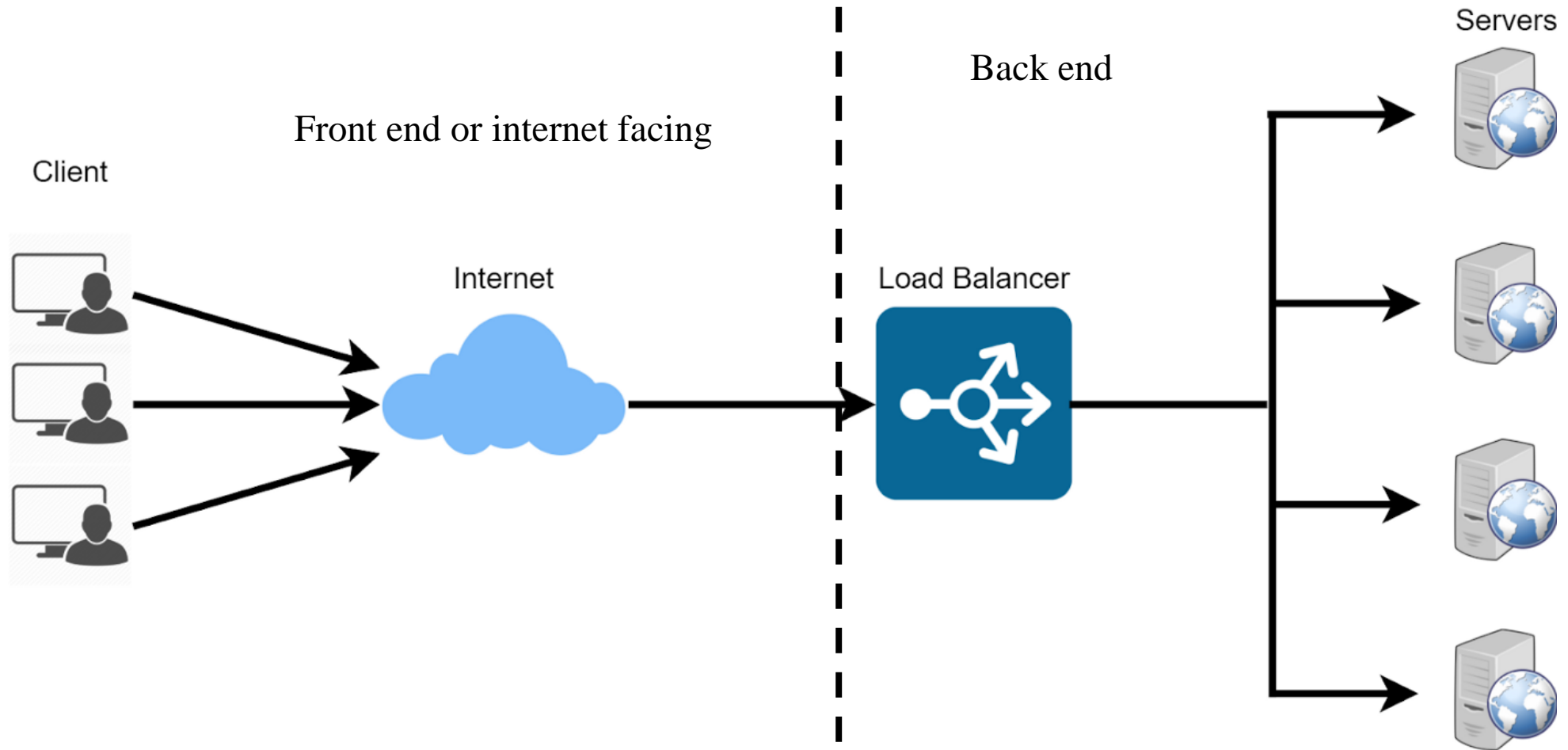
# Direct connection with server



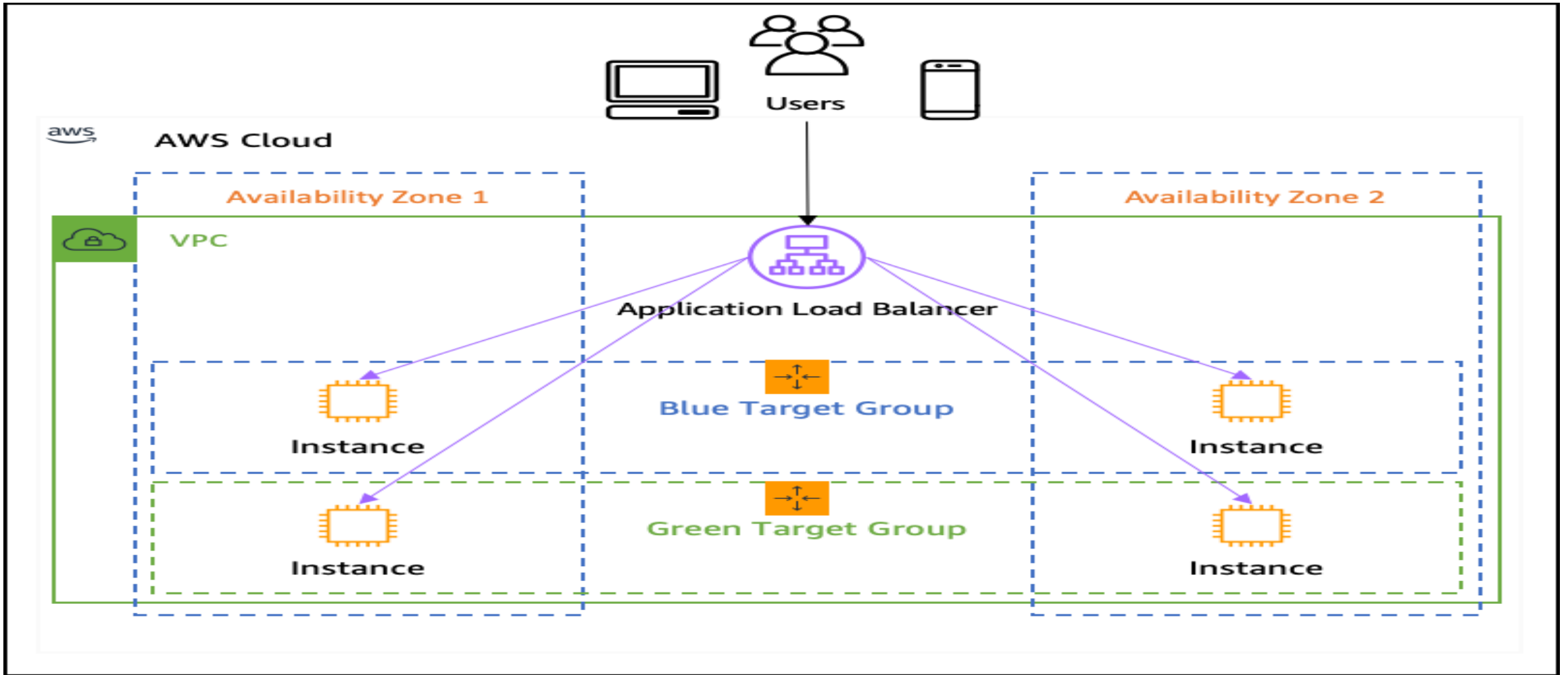
# Load Balancer



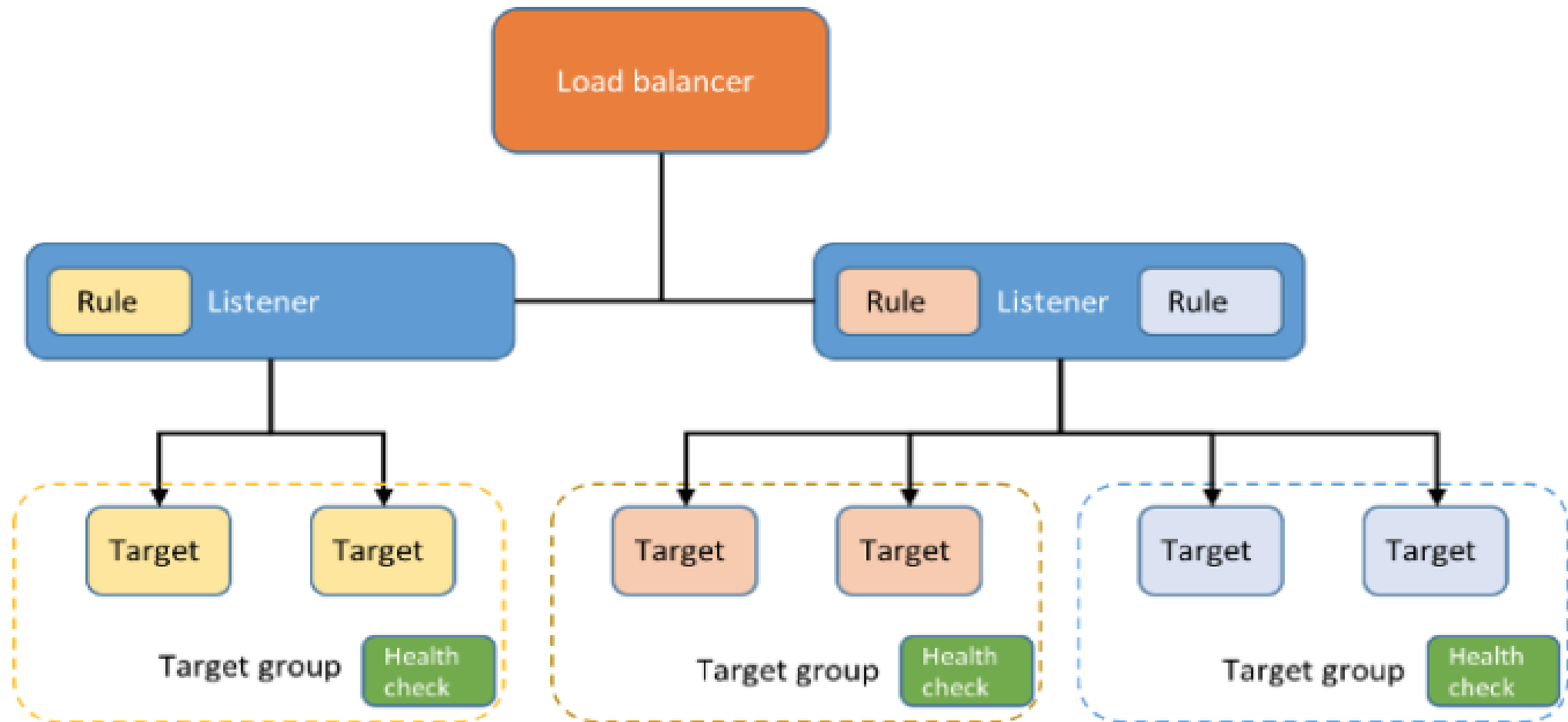
# Load Balancer



# Load Balancer

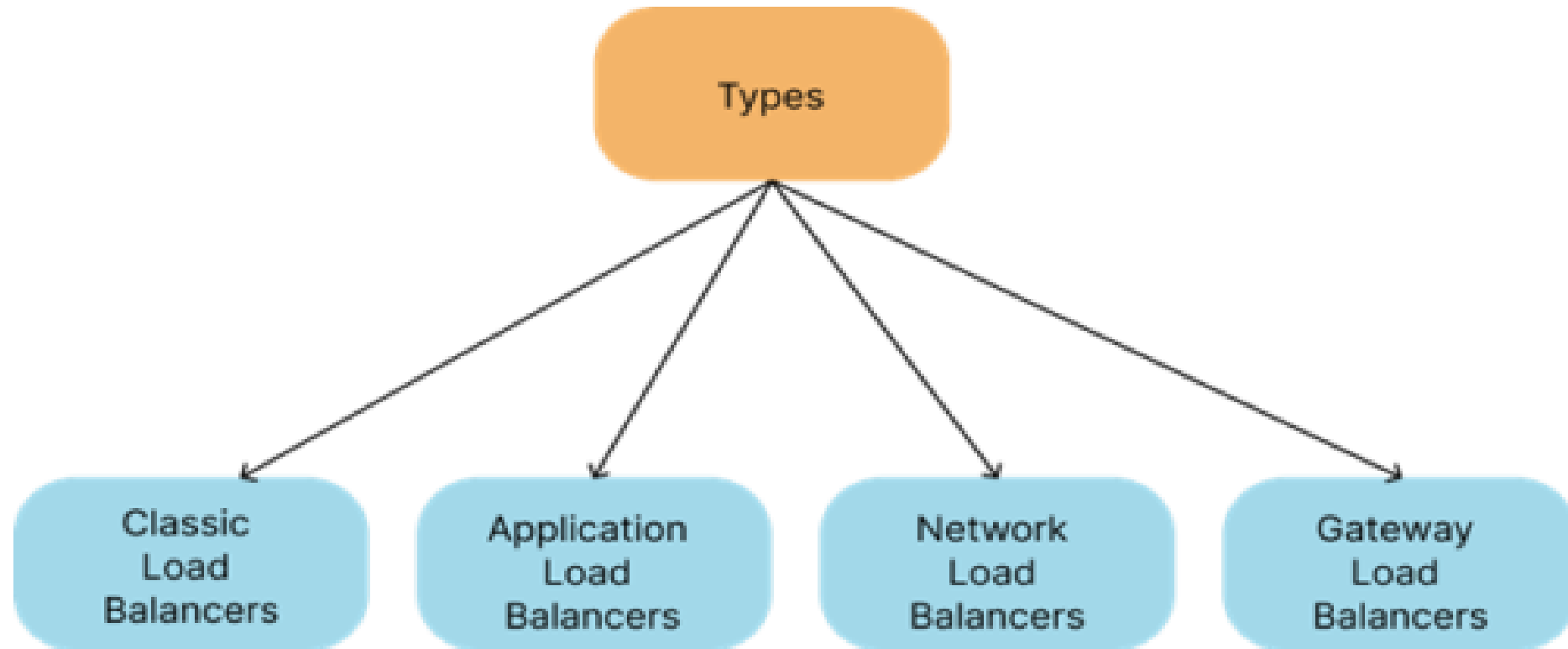


# Load Balancer





# Types of Load balancer



# Load balancer state

## Load balancer state

A Gateway Load Balancer can be in one of the following states:

1. **Provisioning:** The Gateway Load Balancer is being set up.
2. **Active:** The Gateway Load Balancer is fully set up and ready to route traffic.
3. **Failed:** The Gateway Load Balancer could not be set up.

# Load balancer

- Internet facing load balancer has a publicly resolvable DNS name.
- Domain name for content on EC2 instances served by elastic load balancer (ELB), is resolved by the Internet DNS server to the ELB DNS name (and hence IP address).
- This is how traffic from the Internet is directed to the ELB front end.
- Classic load balancer service support: HTTP/HTTPS/TCP/SSL protocols. It also support 1-65535 ports. It supports Ipv4, IPv6, and even dual stack.

# Load balancer

- Application load balancer distributes the application traffic across multiple targets such as EC2 instances in multiple availability zones. This increase the availability of your application.
- Network load balancer has ability to handle volatile workload and scale to millions requests per seconds.
- Gateway Load Balancer helps you easily deploy, scale, and manage your 3<sup>rd</sup> party virtual appliances. It gives you one gateway for distributing traffic across multiple virtual appliances while scaling them up or down, based on demand. This decreases potential points of failure in your network and increases availability.

# Quiz

**Question:** In AWS, load balancer is region specific.

- a) True
- b) False

# Quiz

**Question:** Which load balancer provides basic load balancing across multiple Amazon EC2 instances?

- a) Network Load Balancers
- b) Storage Load Balancers
- c) Classic Load Balancers
- d) Application Load Balancers

# Quiz

**Question:** Elastic Load Balancing offers:

- a) Ability to load balance across AWS
- b) Ability to load balance on-premises resources
- c) Both
- d) None of these

# Quiz

**Question:** The Amazon \_\_\_\_\_ is a Web-based service that allows business subscribers to run application programs in the Amazon.com computing environment.

- a) EC3
- b) EC4
- c) EC5
- d) None of these



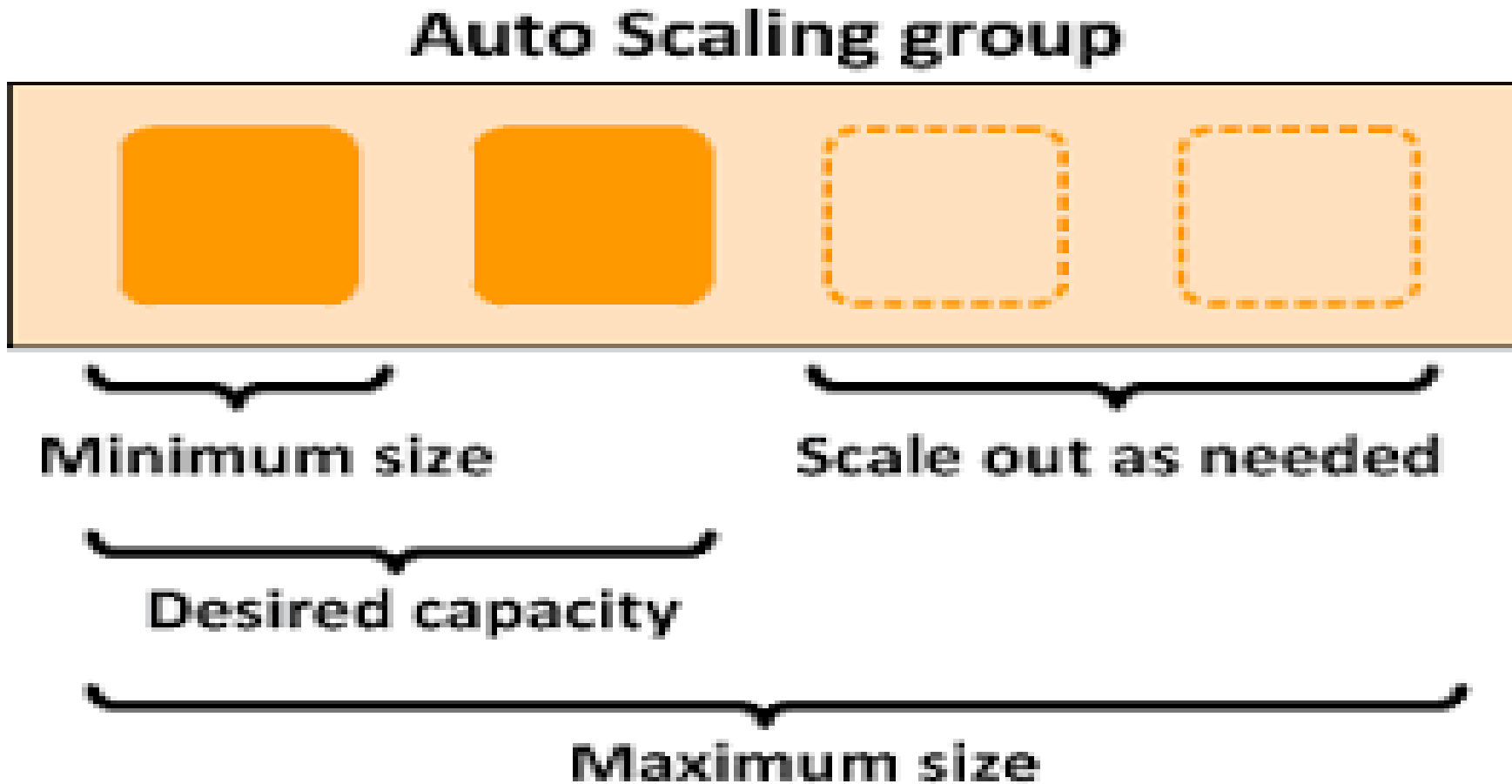
# Quiz

**Question:** Amazon EC2 provides virtual computing environments, known as:

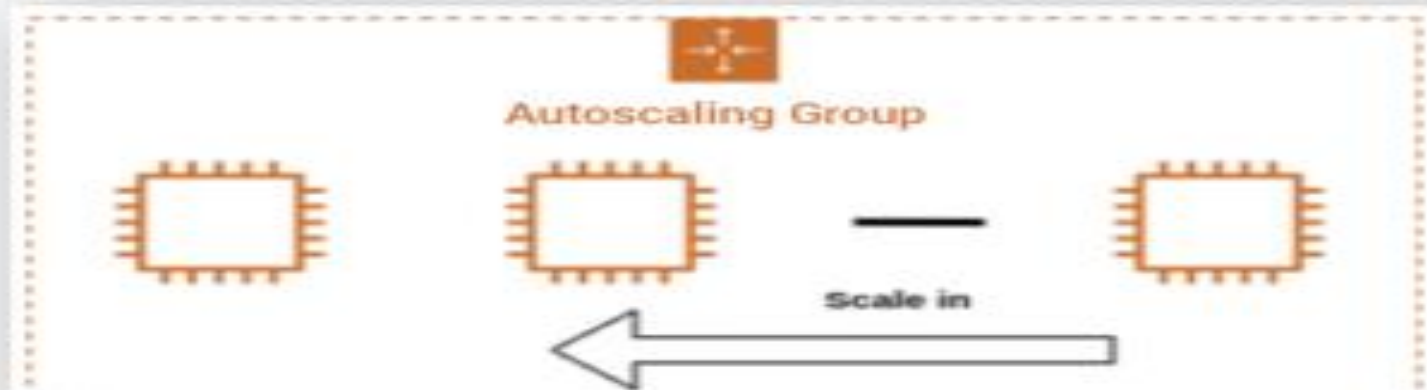
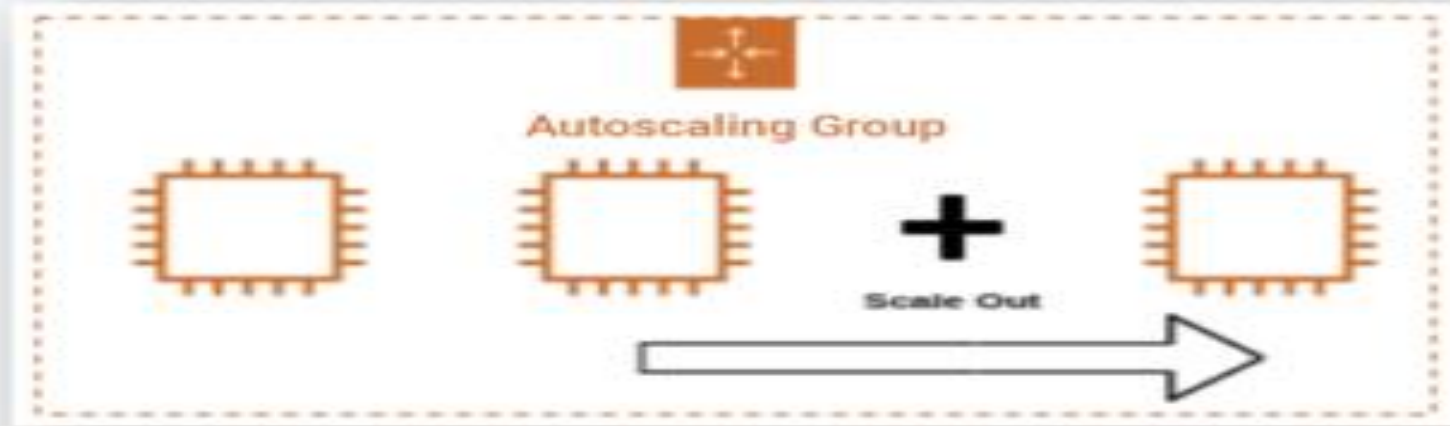
- a) Blocks
- b) Chunks
- c) Instances
- d) Buckets

# Auto Scaling

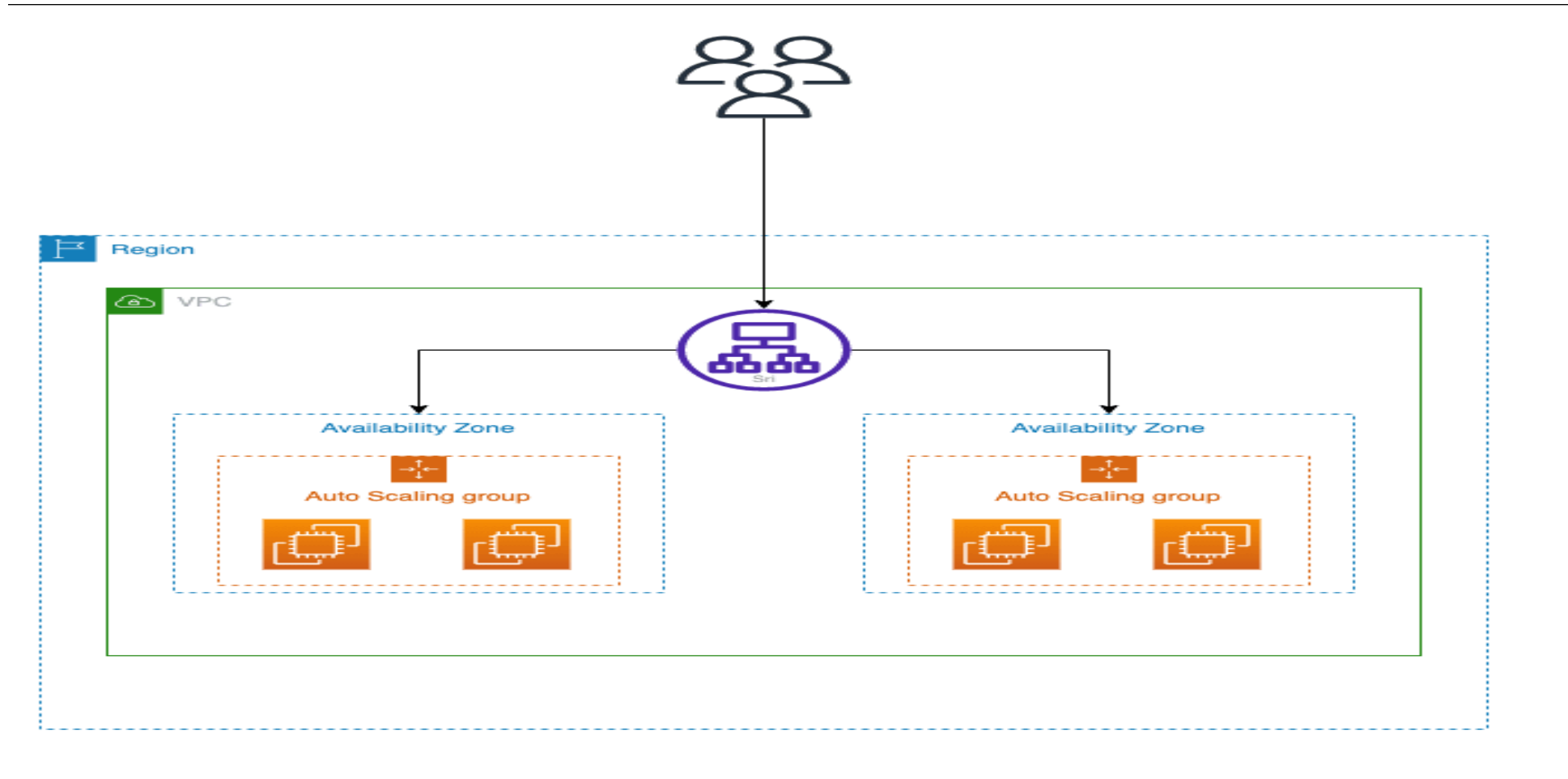
# Autoscaling



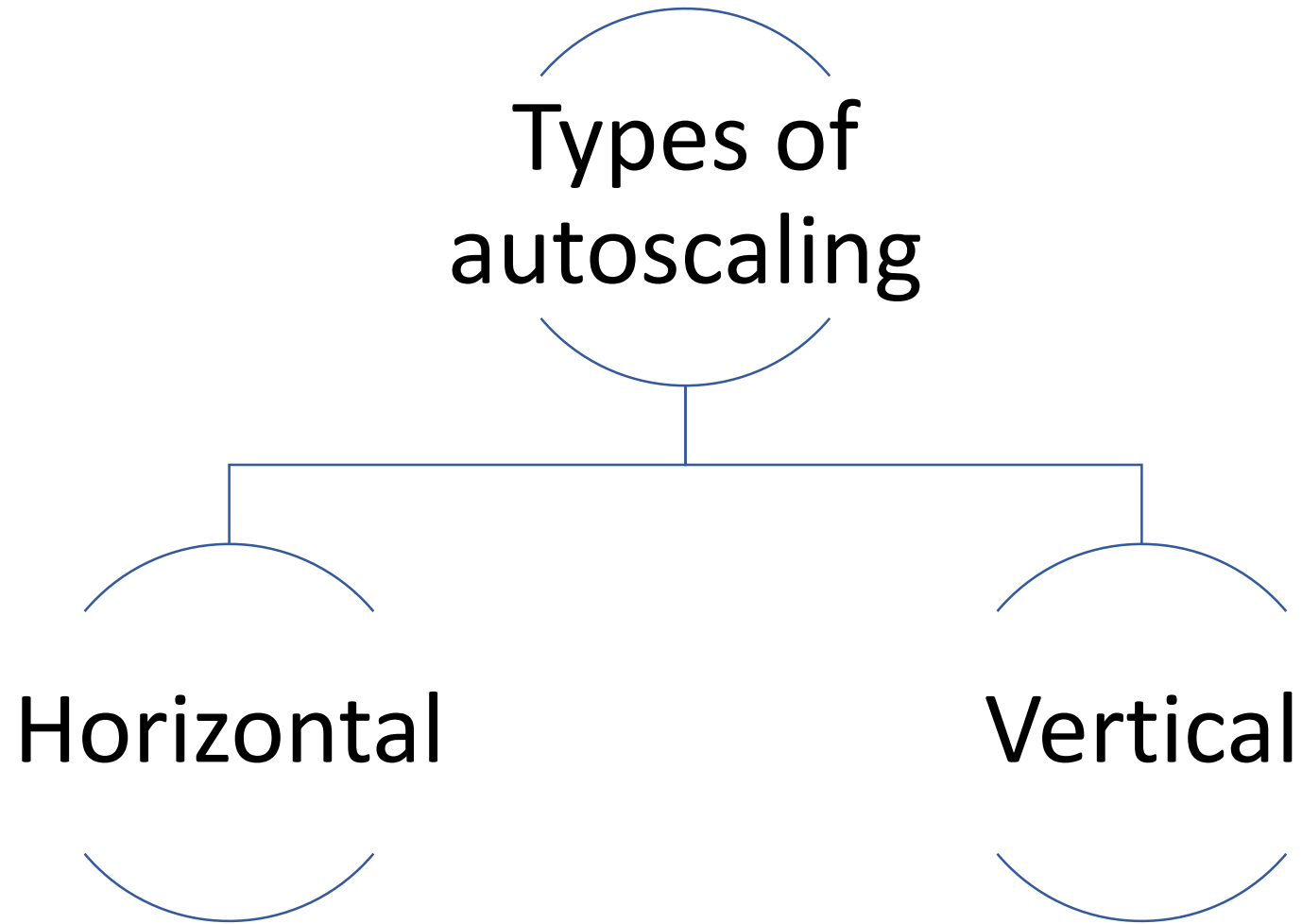
# Autoscaling



# Autoscaling



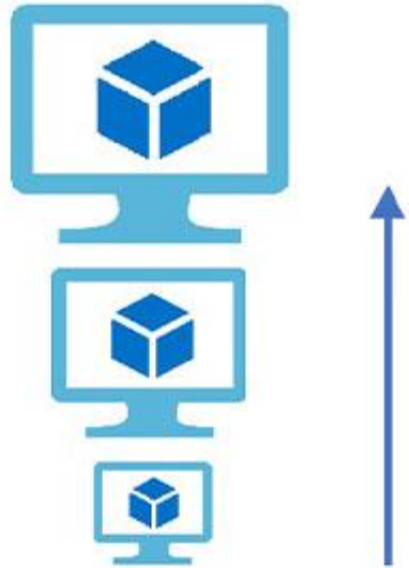
# Types of Autoscaling



# Types of Autoscaling

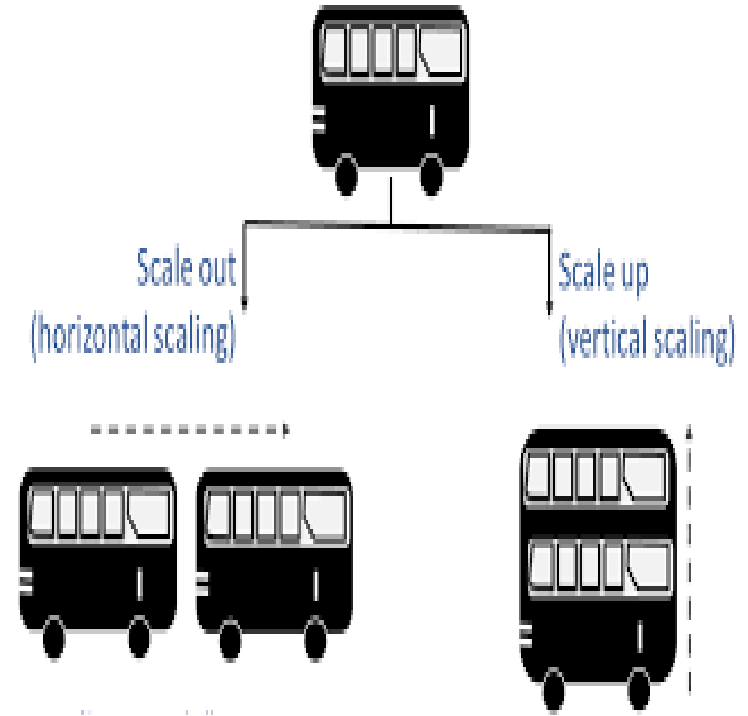
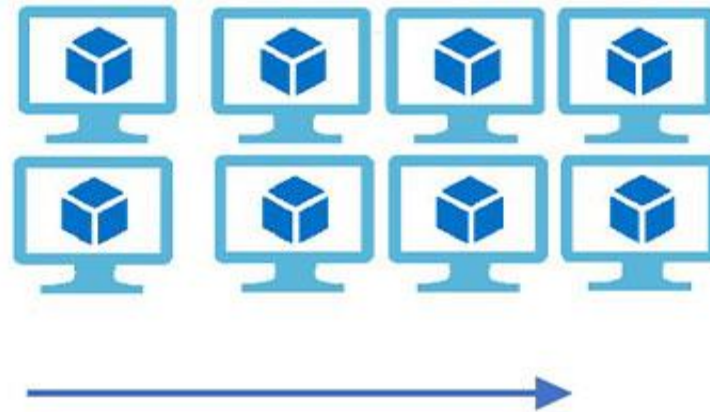
## Vertical Scaling

( Increase size of instance (RAM , CPU etc.) )



## Horizontal Scaling

( Add more instances )





# Thanks