ELB

ow

What is an Elastic Load Balancer (ELB)?

- An Elastic Load Balancer (ELB) is a managed load balancing service offered by AWS.
- It automatically distributes incoming application traffic across multiple targets, such as Amazon EC2 instances, in multiple Availability Zones, enhancing the fault tolerance of your applications.

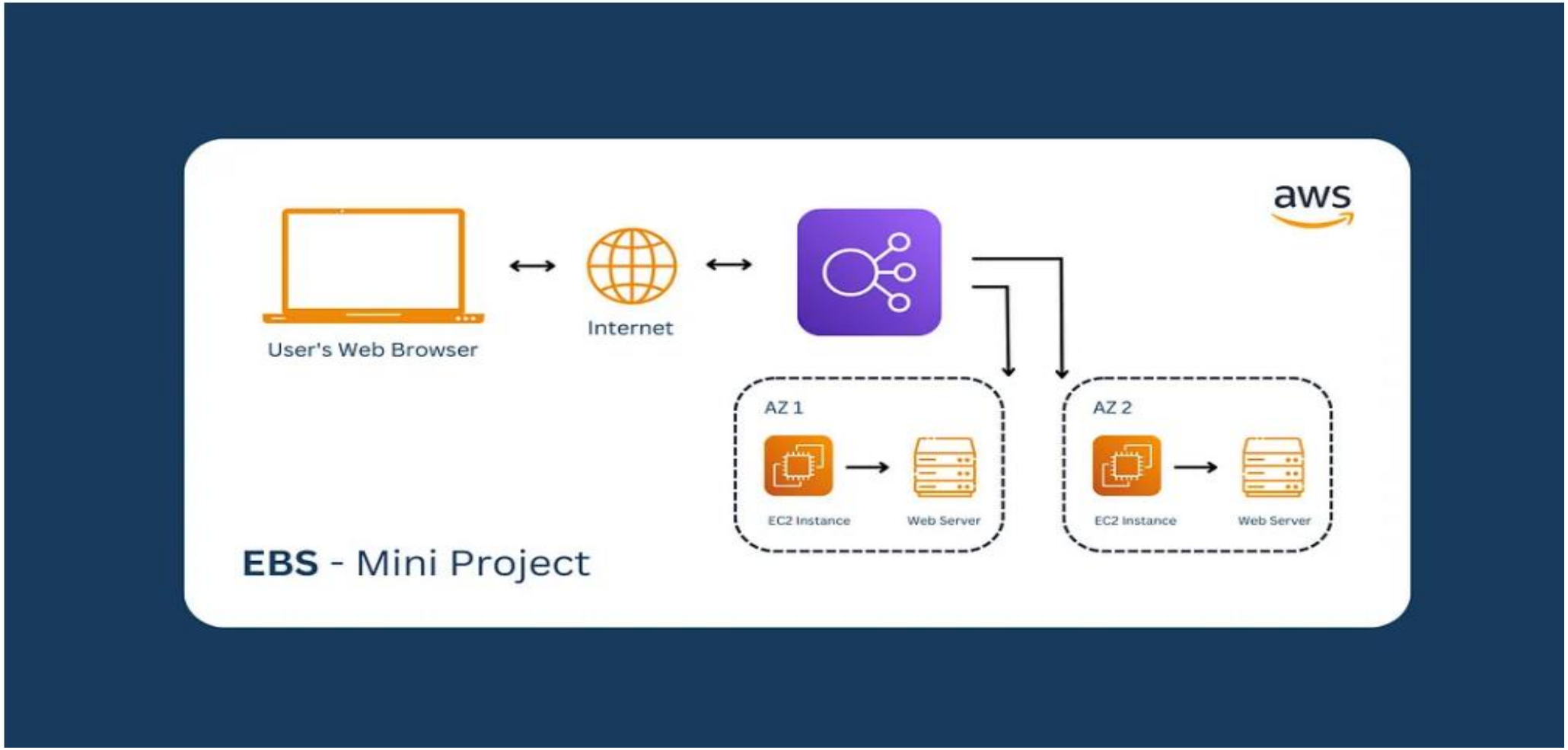
Components

- Load Balancer The ELB itself, which accepts incoming traffic and routes it to the registered targets.
- Target Group A logical grouping of targets, such as EC2 instances, and a protocol and port to route traffic to.
- Target Resources, such as EC2 instances or IP addresses, that receive traffic from the load balance
- **Listener** A process that checks for connection requests from clients and forwards them to one or more targets.

Types of ELB

- **Application Load Balancer (ALB)**: Best suited for load balancing of HTTP and HTTPS traffic, ALB operates at Layer 7 of the OSI model. It offers advanced routing features, such as host-based or path-based routing, and can route requests to microservices or container-based applications.
- **Network Load Balancer (NLB)**: Ideal for load balancing of TCP, UDP, and TLS traffic where extreme performance is required. NLB operates at Layer 4 of the OSI model and is capable of handling millions of requests per second while maintaining ultra-low latencies.
- **Classic Load Balancer (CLB)**: This is the legacy ELB and provides basic load balancing across multiple Amazon EC2 instances. It operates at both Layer 4 and 7. While it's still in use for certain applications, AWS recommends using ALB or NLB for new applications.

..

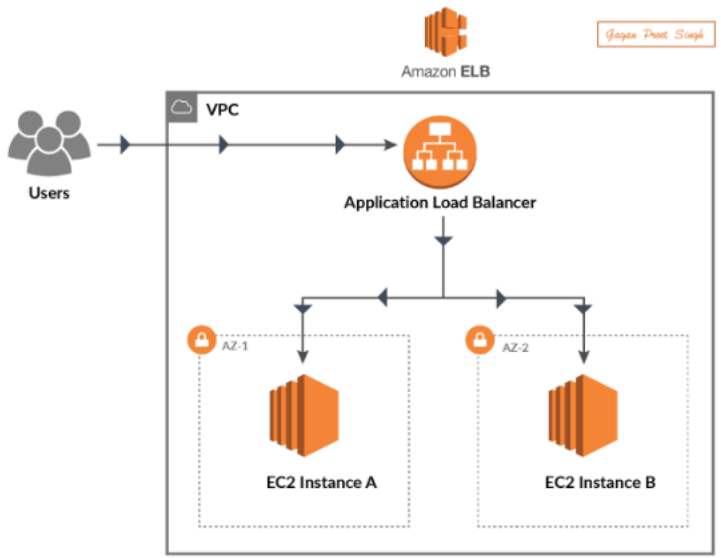

aws
User's Web Browser
Internet
AZ 1
EC2 Instance
Web Server
AZ 2
EC2 Instance
Web Server
EBS - Mini Project

Flow

- Select at least two Availability Zones and one subnet per zone.
- The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.
- Create Two servers
- Make sure port 80 is open as part of ec2 security group
- Create a Target Group
- Register both servers in the target group
- Create an application load balancer (ALB)
- Configure the listener Rules
- Test the ELB
- Health checks

Key Features

- **High Availability**: ELB automatically distributes incoming application traffic across multiple targets in multiple Availability Zones reducing the risk of overloading a single resource.
- **Health Checks**: ELB monitors the health of its registered instances and routes traffic only to the healthy instances.
- **Security Features**: ELB works seamlessly with Amazon Virtual Private Cloud (VPC) and AWS Certificate Manager for SSL termination, providing enhanced security for your applications.
- **Integration with other AWS Services**: ELB integrates with many AWS services like Amazon EC2, Auto Scaling, AWS CloudTrail, and others to enhance the manageability and scalability of applications.
- **Scalability**: ELB is capable of scaling in and out automatically based on incoming traffic patterns.


Amazon ELB
Gagan Preet Singh
VPC
Users
Application Load Balancer
AZ-1
AZ-2
EC2 Instance A
EC2 Instance B