



**AWS Certified Solutions**  
**Architect - Associate**

# **Module 8**

# **Elastic Load**

# **Balancer**

# Agenda

- **What is ELB**
- **Classic Load Balancer**
- **Features & Configuration**
- **Limitations**
- **Application Load Balancer**
- **Features**
- **Limitation**
- **Hands on Labs**

# What is AWS ELB ?

- **ELB distributes incoming application traffic across multiple EC2 instances, in multiple Availability Zones.**
- **ELB increases the fault tolerance of your applications.**
- **The load balancer serves as a single point of contact for clients.**
- **Enable health checks.**
- **Types of load balancers:**
  - **Application Load Balancers**
  - **Network Load Balancers**
  - **Classic Load Balancers**

# Features

Availability  
Zone

Cross-Zone

Request  
Routing

Connection  
Draining

Internet-facing Load  
Balancer

Internal  
Load Balancer

Pay-Only  
What You Use

# ELB : Health Check Configuration

Ping Protocol

Ping  
Port

Ping  
Path

Response  
Timeout

HealthCheck  
Interval

Unhealthy  
Threshold

Healthy  
Threshold

# ELB - Cross Zone

- **Cross-zone load balancing distribute incoming requests evenly across the Availability Zones enabled for your load balancer.**
  - o **Example, if you have 10 instances in Availability Zone us-west-2a and 2 instances in us-west-2b, the requests are distributed evenly across all 12 instances if cross-zone load balancing is enabled.**
  - o **Otherwise, the 2 instances in us-west-2b serve the same number of requests as the 10 instances in us-west-2a.**

# ELB - Connection Drainings

- **Connection draining is use to stops sending requests to instances that are de-registering or unhealthy.**
- **Complete in-flight requests made to instances that are de-registering or unhealthy.**
- **Specify a maximum time for the load balancer to keep connections alive**
- **State:**
  - o **InService: Instance deregistration currently in progress**
  - o **OutOfService: Instance is not currently registered with the LoadBalancer**



# CLB - Limitations

Resource	Default Limit
Load balancers per region	20
Listeners per load balancer	100
Security groups per load balancer	5
Subnets per Availability Zone per load balancer	1

# Application Load Balancer

- **An Application Load Balancer functions at the application of the Open Systems Interconnection (OSI) model.**
- **It evaluates the listener rules to determine which rule to apply, and then selects a target from the target group for the rule action.**
- **Configure listener rules to route requests to different target groups based on the content of the application traffic.**
- **Configure health checks, which are used to monitor the health of the registered targets.**
- **Listeners support the HTTP/ HTTPS protocols.**

# ALB Features

Path-based  
Routing

Host-based  
Routing

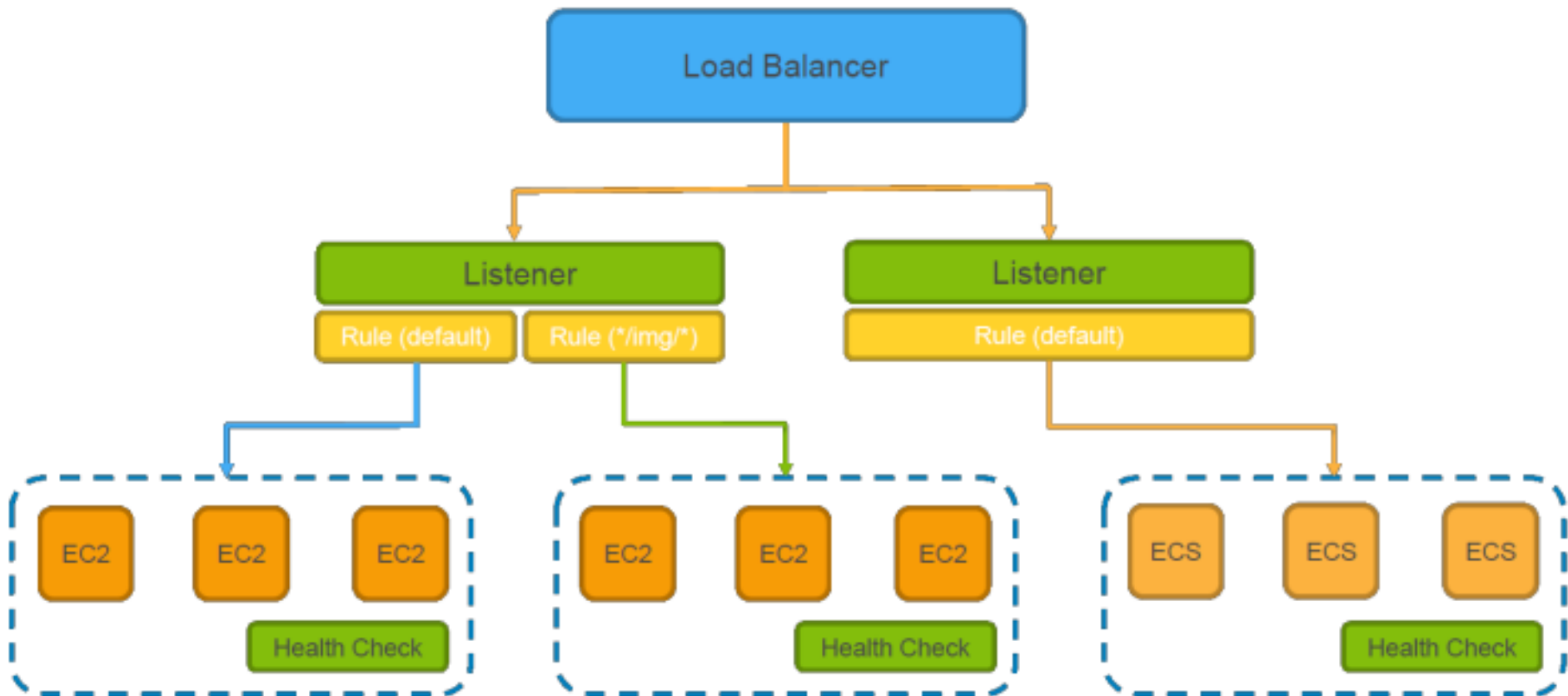
Listener  
Rules

Multiple applications  
on a single EC2

Registering targets by  
IP address

Pay-Only  
What You Use

# Understanding the Flow



# Hands-on Lab