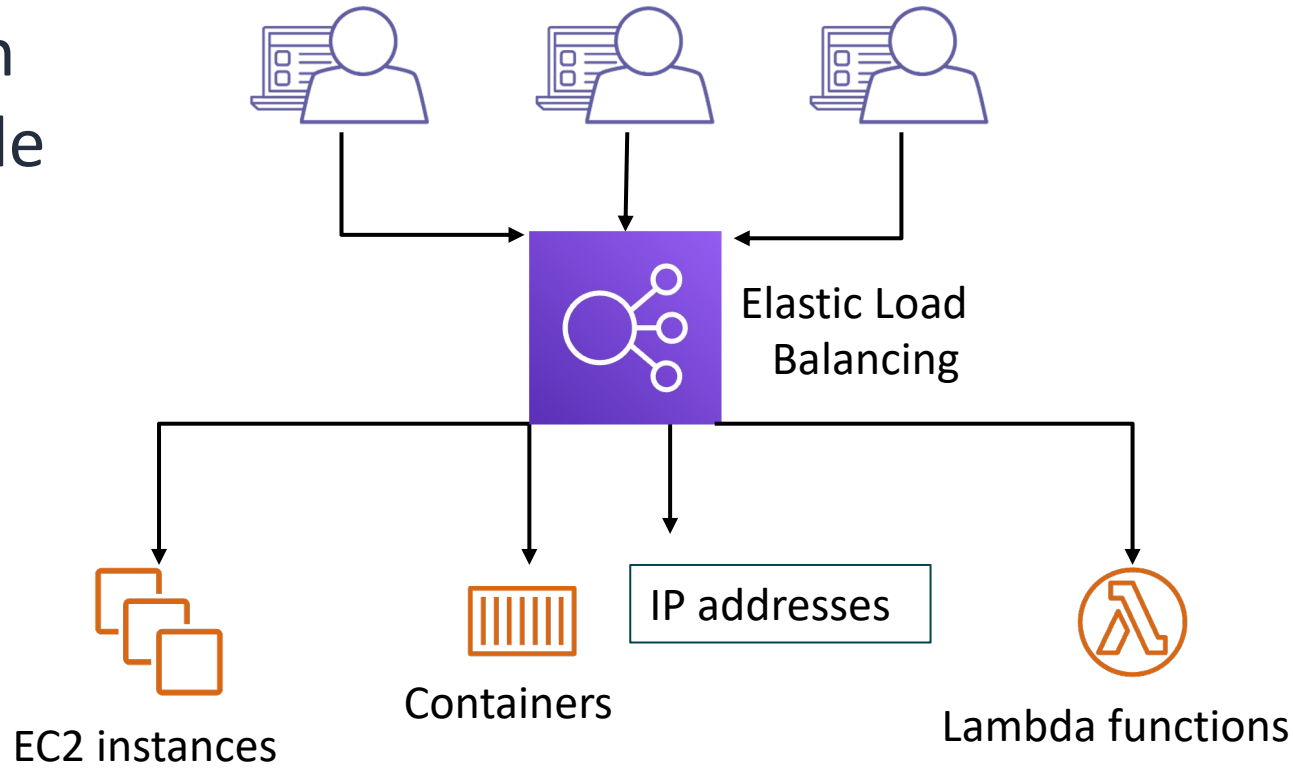
# Cloud Computing Architecture

## Introduction to Load Balancing


SWINBURNE UNIVERSITY OF TECHNOLOGY

# Elastic Load Balancing

- Distributes incoming application or network traffic across multiple targets in a single Availability Zone or across multiple Availability Zones.
- Scales your load balancer as traffic to your application changes over time.

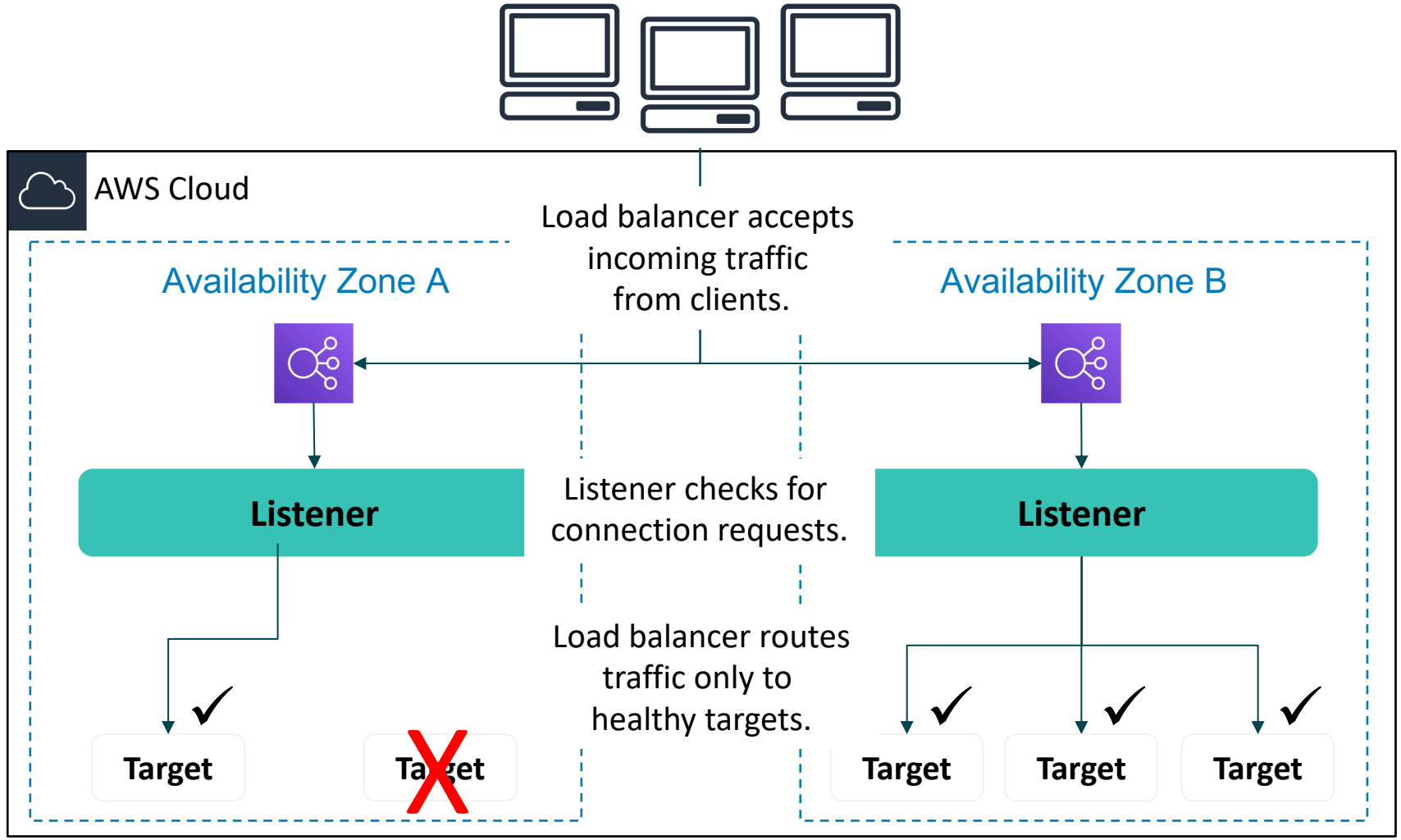


# Types of load balancers

| Application Load Balancer | Network Load Balancer | Classic Load Balancer (Previous Generation) |
|---|---|---|
| • Load balancing of HTTP and HTTPS traffic | • Load balancing of TCP, UDP, and TLS traffic where extreme performance is required | • Load balancing of HTTP, HTTPS, TCP, and SSL traffic |
| • Routes traffic to targets based on content of request<br>• Provides advanced request routing targeted at the delivery of modern application architectures, including microservices and containers | • Routes traffic to targets based on IP protocol data<br>• Can handle millions of requests per second while maintaining ultra-low latencies<br>• Is optimized to handle sudden and volatile traffic patterns | • Load balancing across multiple EC2 instances |
| • Operates at the application layer (OSI model layer 7) | • Operates at the transport layer (OSI model layer 4) | • Operates at both the application and transport layers. |

# How Elastic Load Balancing works

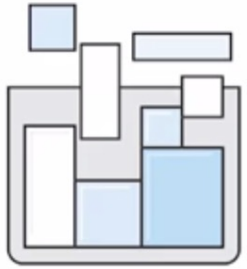
- With Application Load Balancers and Network Load Balancers, you register targets in target groups, and route traffic to the target groups.
- With Classic Load Balancers, you register instances with the load balancer.




Load balancer performs health checks to monitor health of registered targets.

# Elastic Load Balancing use cases

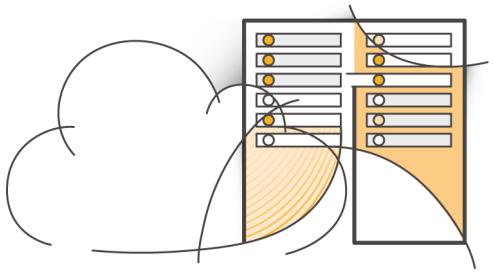
Highly available and fault-tolerant applications



Containerized applications

Elasticity and scalability

Virtual private cloud (VPC)



Hybrid environments

Invoke Lambda functions over HTTP(S)

# Lecture References

# Recommend Viewing

Swinburne Lecture – High Level Overview

AWS Academy – Deeper dive

ACF Module 10