AWS ELB

Amazon Elastic Load Balancing

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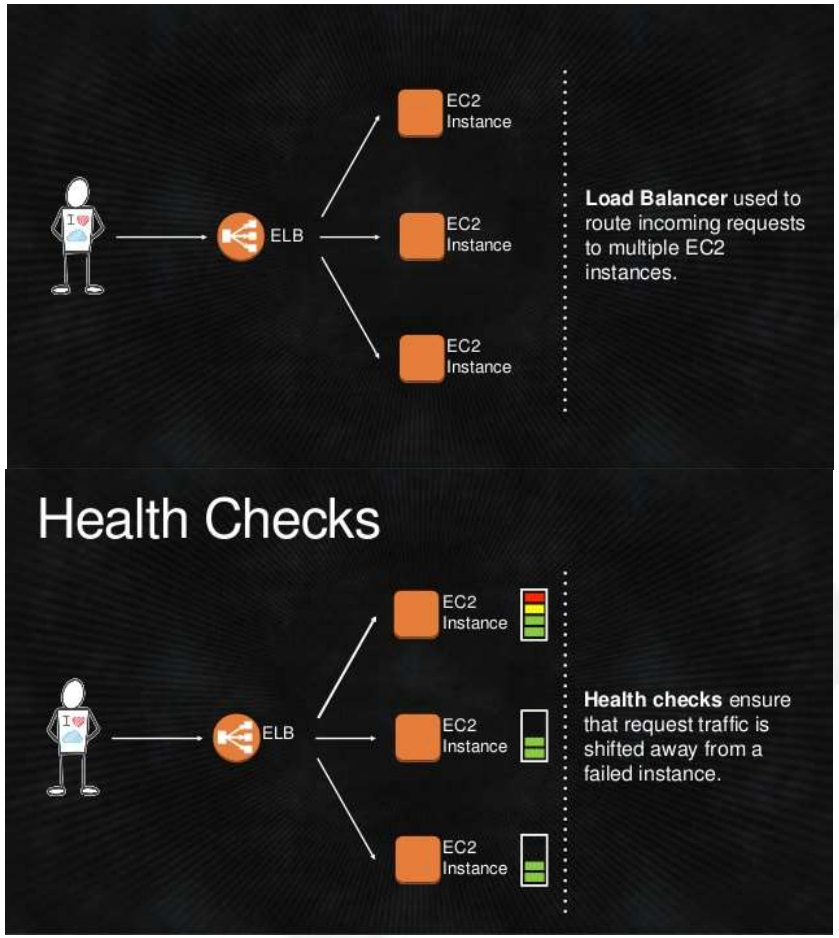
Agenda

- Introduction and functioning of ELB
- Key Terms and Components
- Types/Features of Load Balancers
- Related Services in AWS
- ELB Limits
- Resources

Introduction and Functioning of ELB



- Distributes incoming application traffic across multiple EC2 instances, in multiple Availability Zones
- Increases the fault tolerance of your applications
- Monitors the health of its registered targets and ensures that it routes traffic only to healthy targets
- When the load balancer detects an unhealthy target, it stops routing traffic to that target, and then resumes routing traffic to that target when it detects that the target is healthy again.

Key Terms and Components

- Listeners
  - A process that checks for connection requests, using protocol and port as configuration
  - Determine how the load balancer routes requests to the targets
- Target Groups
  - Each *target group* routes requests to one or more registered targets, such as EC2 instances, Or IP address
  - When you create each listener rule, you specify a target group and conditions. When a rule condition is met, traffic is forwarded to the corresponding target group

Types/Features of Load Balancers

- Elastic Load Balancing supports three types of load balancers:
  - Application Load Balancers
    - Functions at the application layer, the seventh layer of the Open Systems Interconnection (OSI) model
    - You can add and remove targets from your load balancer as your needs change, without disrupting the overall flow of requests to your application.
    - Ideal for advanced load balancing of HTTP and HTTPS traffic
    - Application Load Balancer simplifies and improves the security of your application, by ensuring that the latest SSL/TLS ciphers and protocols are used at all times

Types/Features of Load Balancers

- Elastic Load Balancing supports three types of load balancers:
  - Network Load Balancers
    - functions at the fourth layer of the Open Systems Interconnection (OSI) model
    - Ideal for load balancing of TCP traffic
  - Classic Load Balancers
    - intended for applications that were built within the EC2-Classic network
    - operates at both the request level and connection level

Related Services in AWS

- Elastic Load Balancing works with the following services to improve the availability and scalability of your applications.
  - **Amazon EC2** - You can configure your load balancer to route traffic to your EC2 instances
  - **Route 53** - ELB can distribute the traffic based on request routing
  - **Amazon CloudWatch** - Enables you to monitor your load balancer and take action as needed
  - **Auto Scaling** - Ensures that you are running your desired number of instances
  - **Amazon ECS** - You can configure your load balancer to route traffic to your containers

ELB Limits

Parameters/LB Type	Network	Application	Classic
Load Balancers per region	20	20	20
Listeners per load balancer	50	50	100
Security groups per load balancer	5	5	5

Resources

- **Web Book**
- https://docs.aws.amazon.com/elasticloadbalancing/latest/userguide/elb-ug.pdf

- **FAQs**
- https://aws.amazon.com/elasticloadbalancing/faqs/

- **Videos:**
- https://www.youtube.com/watch?v=8KQ8aLoxVi0
- https://www.youtube.com/watch?v=-hFAWk6hyZA
- https://www.youtube.com/watch?v=l5HSED9FiPI