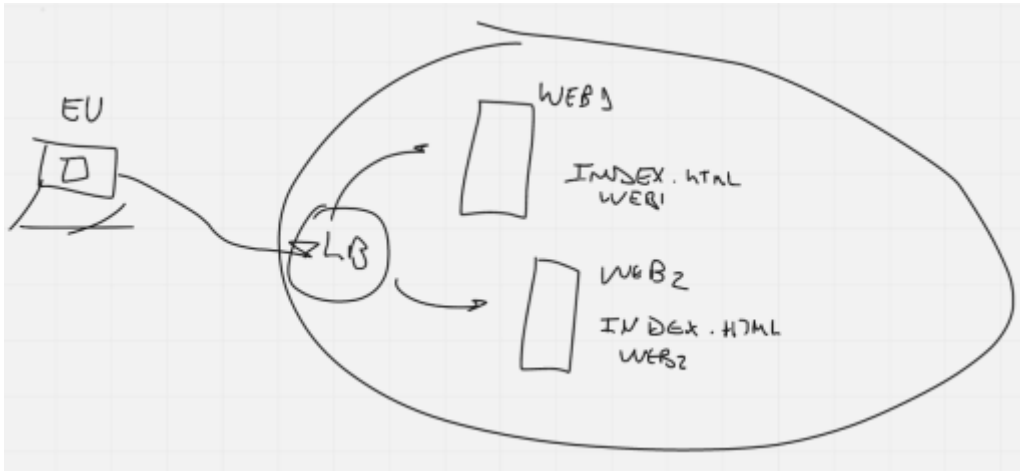


19 - HANDS ON: DOIS WEBSRV EC2 COM LB

- Colocando em pratica os conceitos de Load Balance



- Se temos o balanceamento os servidores precisam possuir o mesmo conteudo, isso é possível com os servidores compartilhando uma unidade EFS.
- O balanceamento padrão é feito de 1/1; toda vez que ele envia um arquivo para um lado ele envia para o outro.
- Vamos criar duas instancias de uma vez so. Para o dia a dia é necessario colocarmos cada uma dessas instancias em uma AZ.
- No security group precisamos que os dois server se enxerguem e tenham acesso http e https
- Agora que temos acesso as duas maquinas queremos ter certeza que elas possuem conteudos distintos. Para isso alteraremos o conteudo de uma delas.
- Fizemos a primeira parte que eh a montagem dos dois servidores com o conteudo da pagina web.
- Agora temos que adicionar o load balance dentro EC2

▼ Load Balancing

Load Balancers

Target Groups New

Select load balancer type

Elastic Load Balancing supports four types of load balancers: Application Load Balancers, Network Load Balancers, Gateway Load Balancers, and Classic Load Balancers. Choose the load balancer type that meets your needs. Learn more about which load balancer is right for you.

Application Load Balancer

HTTP
HTTPS

Create

Choose an Application Load Balancer when you need a flexible feature set for your web applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers.

[Learn more >](#)

Network Load Balancer

TCP
TLS
UDP

Create

Choose a Network Load Balancer when you need ultra-high performance, high throughput at scale, enhanced certificate deployment, support for UDP and static IP addresses for your application. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies.

[Learn more >](#)

Gateway Load Balancer

IP

Create

Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support GENIE. These appliances enable you to improve security, compliance, and policy controls.

[Learn more >](#)

Classic Load Balancer

PREVIOUS GENERATION
for HTTP, HTTPS, and TCP

Create

Choose a Classic Load Balancer when you have an existing application running in the EC2-Classic network.

[Learn more >](#)

- Vamos utilizar o loadbalance antigo que aparti dele conseguimos criar os novos.

Step 1: Define Load Balancer

Basic Configuration

This wizard will walk you through setting up a new load balancer. Begin by giving your new load balancer a unique name so that you can identify it from other load balancers you might create. You will also need to configure ports and protocols for your routed from any load balancer port to any port on your EC2 instances. By default, we've configured your load balancer with a standard web server on port 80.

Load Balancer name:

Create LB inside:

Create an internal load balancer: ☒ [Learn more >](#)

Enable advanced VPC configuration: ☐

Listener Configuration:

Load Balancer Protocol	Load Balancer Port	Instance Protocol	Instance Port
<input type="text" value="HTTP"/>	<input type="text" value="80"/>	<input type="text" value="HTTP"/>	<input type="text" value="80"/>

[Add](#)

- Não queremos um loadbalnce interno e sim um para a internet.

- As regras de firewall serão as mesmas que no webserver.

Step 4: Configure Health Check

Your load balancer will automatically perform health checks on your EC2 instances and

Ping Protocol	<input type="text" value="HTTP"/>
Ping Port	<input type="text" value="80"/>
Ping Path	<input type="text" value="/index.html"/>

Advanced Details

Response Timeout	<input type="text" value="5"/>	seconds
Interval	<input type="text" value="30"/>	seconds
Unhealthy threshold	<input type="text" value="2"/>	
Healthy threshold	<input type="text" value="10"/>	

- Configurando o Health check
- O nosso Load Balance precisa entender se o webserv1 esta ativo e se o webserv2 esta ativo tbm fazendo alguns tipos de testes que enviam requisicoes e pergutando se o server esta respondendo.
- Qual arquivo será utilizado para monitoração do health check?
- Podemos apontar para o index.html ou criar um arquivo html qualquer.
- Por simplicidade vamos aponta-lo para o index.

- RESPONSE TIMEOUT > Time to wait when receiving a response from the health check (2 sec - 60 sec).
- O tempo de espera de resposta do health check.
- Colocando 2, espera 2 segundos para marcar a resposta.

- INTERVAL > de quantos em quantos segundos é para se fazer uma requisição de health check.

- UNHEALTHY THRESHOLD > Quantos timeouts são necessários para falar que o servidor caiu.

- HEALTHY THERESHOLD > Quando voltar, quanto tempo devemos aguardar? A maquina voltou e respondeu por 10 vez significa que esta disponivel.

Step 5: Add EC2 Instances

The table below lists all your running EC2 instances. Check the boxes in the Select column to add those instances to this load balancer.

VPC: vpc-35f17f48 (172.31.0.0/16)

<input type="checkbox"/>	Instance	Name	State	Security groups
<input type="checkbox"/>	i-059788eab62b5aa9	SRV1	stopped	default, launch-wizard-1
<input type="checkbox"/>	i-091bbacebd50c40fd	SRV2	stopped	default, launch-wizard-1
<input checked="" type="checkbox"/>	i-06474e052212a80f1		running	default, launch-wizard-1
<input checked="" type="checkbox"/>	i-063f1f44c02af266		running	default, launch-wizard-1

Availability Zone Distribution

2 instances in us-east-1b

☒ Enable Cross-Zone Load Balancing ⓘ

☒ Enable Connection Draining ⓘ 300 seconds

- ENABLE CONNECTION DRAINING > Numero de segundos para permitir que o trafego existente continue no mesmo sentido.

Step 7: Review

Please review the load balancer details before continuing

▼ Define Load Balancer

Load Balancer name: elb-webservers

Scheme: internet-facing

Port Configuration: 80 (HTTP) forwarding to 80 (HTTP)

▼ Configure Health Check

Ping Target: HTTP:80/index.html

Timeout: 5 seconds

Interval: 5 seconds

Unhealthy threshold: 2

Healthy threshold: 3

▼ Add EC2 Instances

Cross-zone load balancing: Enabled

Connection Draining: Enabled, 300 seconds

Instances: i-06474e052212a80f1, i-063f1f44c02af266

▼ VPC Information

VPC: vpc-35f17f48

Subnets: subnet-9dee5fac, subnet-c6f9cdc8, subnet-17d4a671, subnet-53fb840c, subnet-5b787516, subnet-eb552dca

▼ Security groups

Security groups: sg-64e01a61, sg-0919ded8d36956079

▼ Add Tags

Creator: AngelinaPierre

Load balancer: **elb-webserver**

Description Instances Health check Listeners Monitoring Tags Migration

Basic Configuration

Name	elb-webserver	Creation time	May 20, 2021 at 10:39:27 AM UTC-3
DNS name	elb-webserver-2053085987.us-east-1.elb.amazonaws.com (A Record)	Hosted zone	Z355XDOTRQ7X7K
Type	Classic (Migrate Now)	Status	0 of 2 instances in service
Scheme	Internet-facing	VPC	vpc-30f17f48
Availability Zones	subnet-1704a671 - us-east-1d, subnet-63fb640c - us-east-1c, subnet-6b787516 - us-east-1b, subnet-9dee6bac - us-east-1e, subnet-c69c0c8 - us-east-1f, subnet-e65528ca - us-east-1a		

Port Configuration

Port Configuration: **80 (HTTP) forwarding to 80 (HTTP)**
 Stickiness: Disabled
[Edit stickiness](#)

Security

Source Security Group: sg-09190e0b030956079, launch-wizard-1
 • launch-wizard-1 created 2021-05-17T12:15:26.246-03:00

Load balancer: **elb-webserver**

Description **Instances** Health check Listeners Monitoring Tags Migration

Connection Draining: Enabled, 300 seconds (Edit)

[Edit instances](#)

Instance ID	Name	Availability Zone	Status	Actions
i-0647a6b271c1a07f1		us-east-1b	OutOfService (1)	Remove from Load Balancer
i-083f95a62a2c266		us-east-1b	OutOfService (1)	Remove from Load Balancer

[Edit Availability Zones](#)

Availability Zone	Subnet ID	Subnet CIDR	Instance Count	Healthy?	Actions
us-east-1f	subnet-c99fcd05	172.31.64.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer
us-east-1e	subnet-9dee6bac	172.31.48.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer
us-east-1d	subnet-1704a671	172.31.0.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer
us-east-1c	subnet-63fb640c	172.31.32.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer
us-east-1b	subnet-6b787516	172.31.16.0/20	2	No (Availability Zone contains no healthy targets)	Remove from Load Balancer
us-east-1a	subnet-e65528ca	172.31.88.0/20	0	No (Availability Zone contains no healthy targets)	Remove from Load Balancer

VAMOS PARA OS TESTES

- O load balance nunca dá o endereçamento IP, o que é dado é um DNS
- Vamos pegar esse DNS e abrir no Browser



- Fomos direcionados diretamente para o servidor web 2

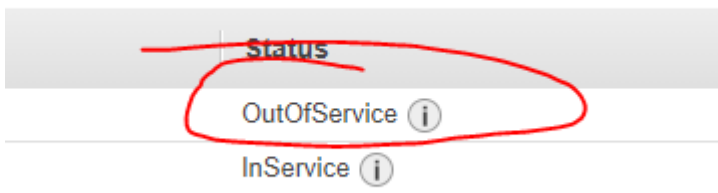
- Quer dizer que a primeira conexão bateu no load balancer e foi para o webserver2.
- vamos dar um reload(f5)- E agora vemos que o LB mandou para o server 1.
- Se atualizarmos novamente ele ficará alternando.
- distribuição de 1/1

OUTRO TESTE

- Vamos remover o arquivo index.html do SERVER 1

```
[root@ip-172-31-17-196 html]#
[root@ip-172-31-17-196 html]# rm -rf index.html
[root@ip-172-31-17-196 html]# ls
[root@ip-172-31-17-196 html]#
```

-



- Após a remoção do arquivo vemos que o status do servidor foi para out of service.
- Se ficarmos atualizando agora so será mostrado o WEB server 2
- Vamos criar o arquivo novamente para ver se ele irá voltar ao normal.

Status
InService ⓘ
InService ⓘ

- Apos criado novamente o balanceamento volta a rodar.
- Lembre-se de fazer esse balanceamento usando o EFS e colocando o INdex.html dentro desse armazenador.