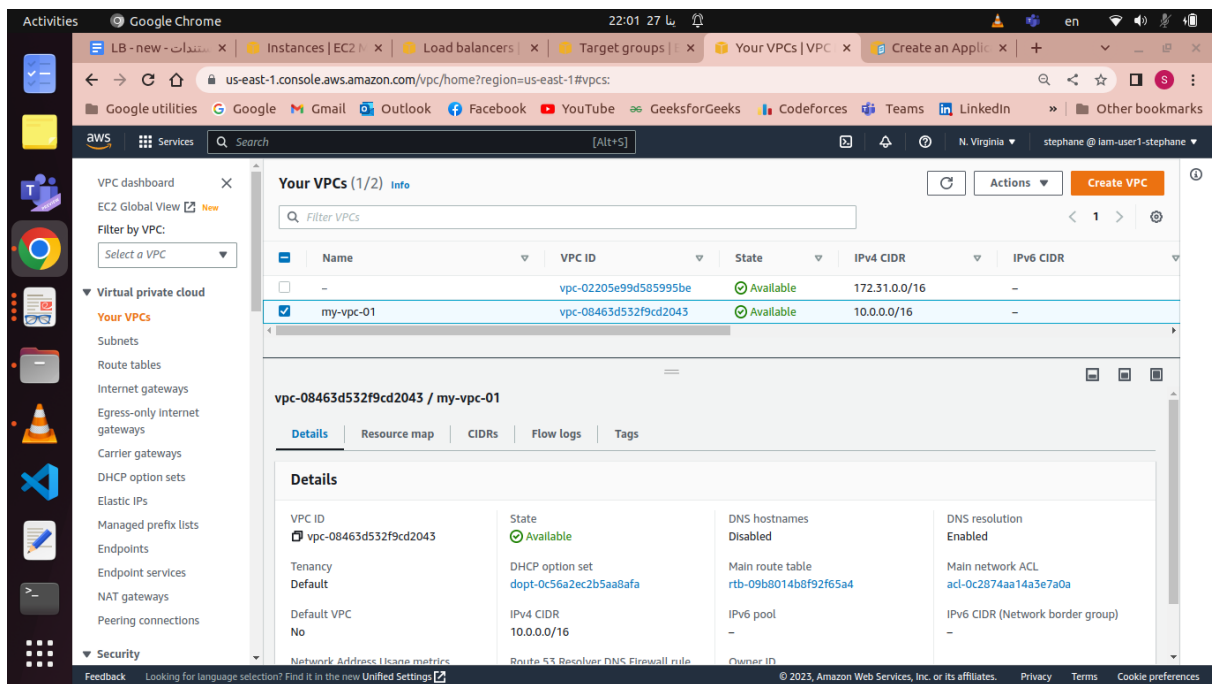
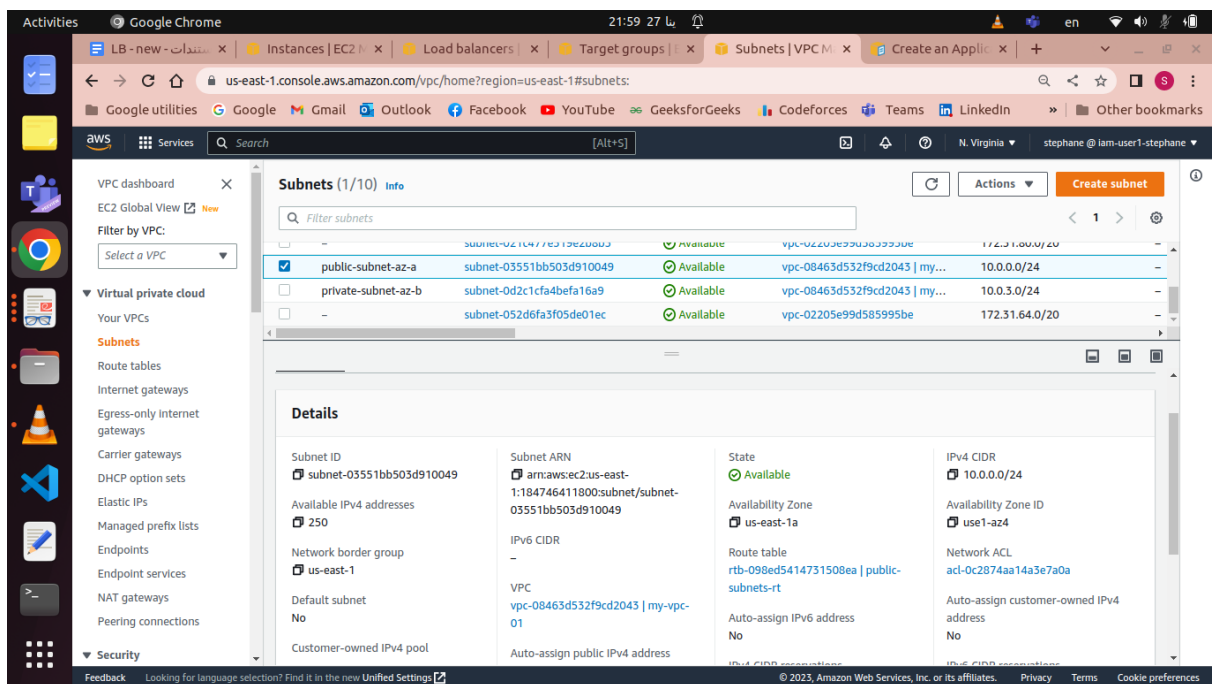


1. Create vpc:



2. Create public subnet - a



3. Create public subnet - b

Subnets (1/10)

Name	Subnet ID	Subnet ARN	State	VPC	IPv4 CIDR
private-subnet-az-a	subnet-0930acfc901990921	arn:aws:ec2:us-east-1:184746411800:subnet/subnet-0930acfc901990921	Available	vpc-08463d532f9cd2043 my...	10.0.1.0/24
public-subnet-az-b	subnet-0622ccc92cc7264f2	arn:aws:ec2:us-east-1:184746411800:subnet/subnet-0622ccc92cc7264f2	Available	vpc-08463d532f9cd2043 my...	10.0.2.0/24
-	subnet-021c477e519e2b8b3	-	Available	vpc-02205e99d585995be	172.31.80.0/20

Details

Subnet ID	subnet-0622ccc92cc7264f2	Subnet ARN	arn:aws:ec2:us-east-1:184746411800:subnet/subnet-0622ccc92cc7264f2	State	Available	IPv4 CIDR	10.0.2.0/24
Available IPv4 addresses	249	Availability Zone	us-east-1b	Route table	rtb-098ed5414731508ea public-subnets-rt	Availability Zone ID	use1-az6
Network border group	us-east-1	IPv6 CIDR	-	Network ACL	acl-0c2874aa14a3e7a0a	Auto-assign customer-owned IPv4 address	No
Default subnet	No	VPC	vpc-08463d532f9cd2043 my-vpc-01	Auto-assign IPv6 address	No		

4. private instance - a

Instances (1/4)

Name	Instance ID	Instance state	Instance type	Status check
private-ec2-az-b	i-0ce8056e912dfefdb	Running	t2.micro	2/2 checks passed
public-ec2-az-b	i-00ac9fac7847372ce	Running	t2.micro	2/2 checks passed
private-ec2-az-a	i-04a30c490c3638c17	Running	t2.micro	2/2 checks passed
public-ec2-az-a	i-0854bc1eb0c0ba243	Running	t2.micro	2/2 checks passed

Instance: i-04a30c490c3638c17 (private-ec2-az-a)

Details

Instance ID	i-04a30c490c3638c17 (private-ec2-az-a)	Public IPv4 address	-	Private IPv4 addresses	10.0.1.93
IPv6 address	-	Instance state	Running	Public IPv4 DNS	-
Hostname type	IP name: ip-10-0-1-93.ec2.internal	Private IP DNS name (IPv4 only)	ip-10-0-1-93.ec2.internal		

5. private instance - b

aws Services Search [Alt+S] N. Virginia stephane @ iam-user1-stephan

New EC2 Experience Tell us what you think

EC2 Dashboard
EC2 Global View
Events
Tags
Limits

▼ Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Scheduled Instances
Capacity Reservations

▼ Images
AMIs
AMI Catalog

Instances (1/4) Info

Find Instance by attribute or tag (case-sensitive)

	Name	Instance ID	Instance state	Instance type	Status check	Alarm
<input checked="" type="checkbox"/>	private-ec2-az-b	i-0ce8056e912dfefd8	Running	t2.micro	2/2 checks passed	No alarm
<input type="checkbox"/>	public-ec2-az-b	i-00ac9fac7847372ce	Running	t2.micro	2/2 checks passed	No alarm
<input type="checkbox"/>	private-ec2-az-a	i-04a30c490c3638c17	Running	t2.micro	2/2 checks passed	No alarm
<input type="checkbox"/>	public-ec2-az-a	i-0854bc1eb0c0ba243	Running	t2.micro	2/2 checks passed	No alarm

Instance: i-0ce8056e912dfefd8 (private-ec2-az-b)

Details Security Networking Storage Status checks Monitoring Tags

▼ Instance summary Info

Instance ID i-0ce8056e912dfefd8 (private-ec2-az-b)	Public IPv4 address -	Private IPv4 addresses 10.0.3.5
IPv6 address -	Instance state Running	Public IPv4 DNS -
Hostname type IP name: ip-10-0-3-5.ec2.internal	Private IP DNS name (IPv4 only) ip-10-0-3-5.ec2.internal	

Feedback Looking for language selection? Find it in the new Unified Settings

© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

6. security group for both public instances a & b:

aws Services Search [Alt+S] N. Virginia stephane @ iam-user1-stephan

Savings Plans
Reserved Instances
Dedicated Hosts
Scheduled Instances
Capacity Reservations

▼ Images
AMIs
AMI Catalog

▼ Elastic Block Store
Volumes
Snapshots
Lifecycle Manager

▼ Network & Security
Security Groups
Placement Groups
Key Pairs
Network Interfaces

▼ Load Balancing
Load Balancers

Security Groups (1/6) Info

Filter security groups

	Name	Security group ID	Security group name	VPC ID	Description	Owner
<input type="checkbox"/>	-	sg-0be86d78738887094	default	vpc-02205e99d585995be	default VPC security gr...	18474
<input checked="" type="checkbox"/>	-	sg-03ac6a9c987c5086f	allow-tg	vpc-08463d532f9cd2043	allow tg	18474

Details Inbound rules Outbound rules Tags

You can now check network connectivity with Reachability Analyzer [Run Reachability Analyzer](#)

Inbound rules (2)

Filter security group rules

	Type	Protocol	Port range	Source	Description
	HTTP	TCP	80	0.0.0.0/0	-
	SSH	TCP	22	0.0.0.0/0	-

Feedback Looking for language selection? Find it in the new Unified Settings

© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Security Groups (1/6) Info

Filter security groups

Name	Security group ID	Security group name	VPC ID	Description	Owner
-	sg-0b8e8d78/5888/094	default	vpc-02205e99d08c995de	default vpc security gr...	18474
-	sg-03ac6a9c987c5086f	allow-tg	vpc-08463d532f9cd2043	allow tg	18474

sg-03ac6a9c987c5086f - allow-tg

Details | Inbound rules | **Outbound rules** | Tags

You can now check network connectivity with Reachability Analyzer [Run Reachability Analyzer](#)

Outbound rules (1/1)

Filter security group rules

Rule name	IP version	Type	Protocol	Port range	Destination
ip rule...	IPv4	All traffic	All	All	0.0.0.0/0

7. security group of private subnets:

Security Groups (1/6) Info

Filter security groups

Name	Security group ID	Security group name	VPC ID	Description	Owner
-	sg-08238194876d5cc5b	public-LB-sg	vpc-08463d532f9cd2043	public lb sg	18474
-	sg-002ec34776ff1d555	private-LB-sg	vpc-08463d532f9cd2043	private lb sg	18474

sg-08238194876d5cc5b - public-LB-sg

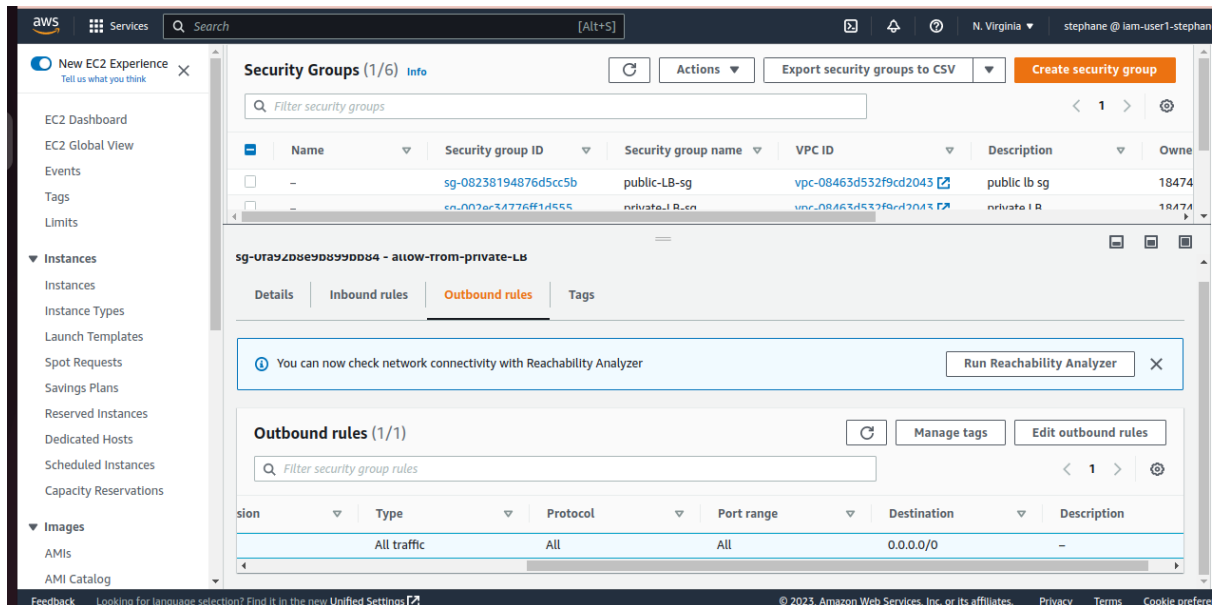
Details | **Inbound rules** | Outbound rules | Tags

You can now check network connectivity with Reachability Analyzer [Run Reachability Analyzer](#)

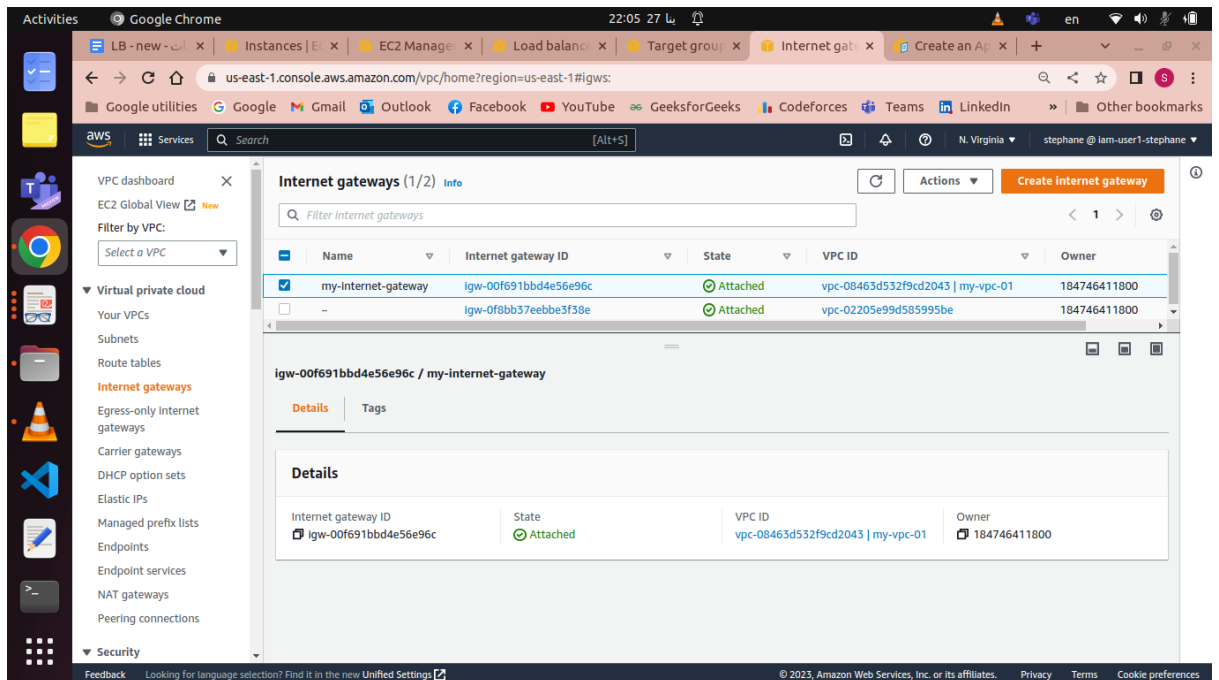
Inbound rules (2)

Filter security group rules

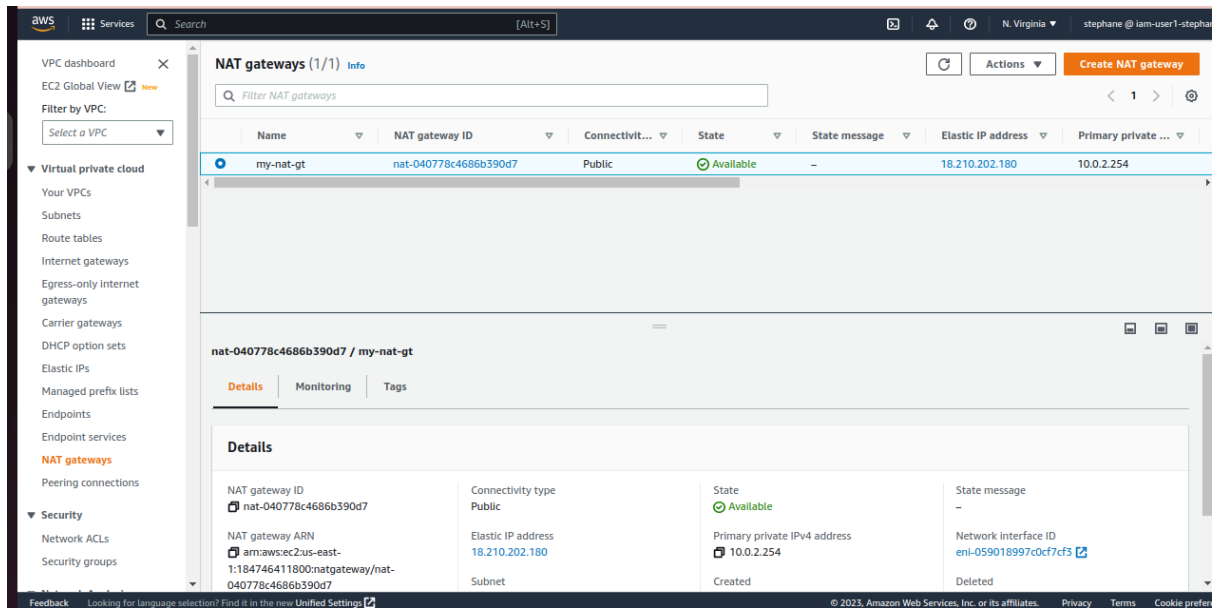
Type	Protocol	Port range	Source	Description
HTTP	TCP	80	sg-002ec34776ff1d555 / private-LB-sg	-
SSH	TCP	22	sg-03ac6a9c987c5086f / allow-tg	-



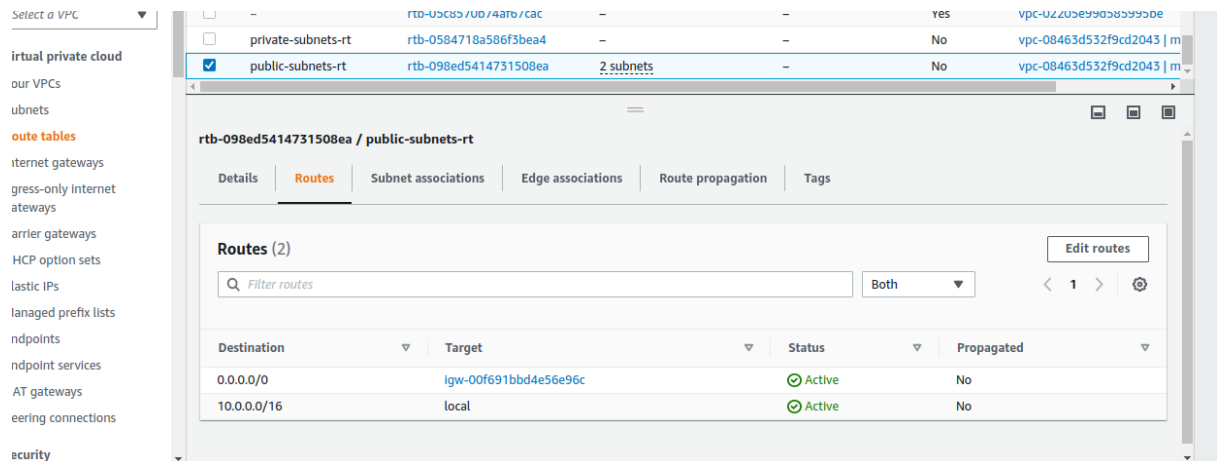
8. Internet gateway:



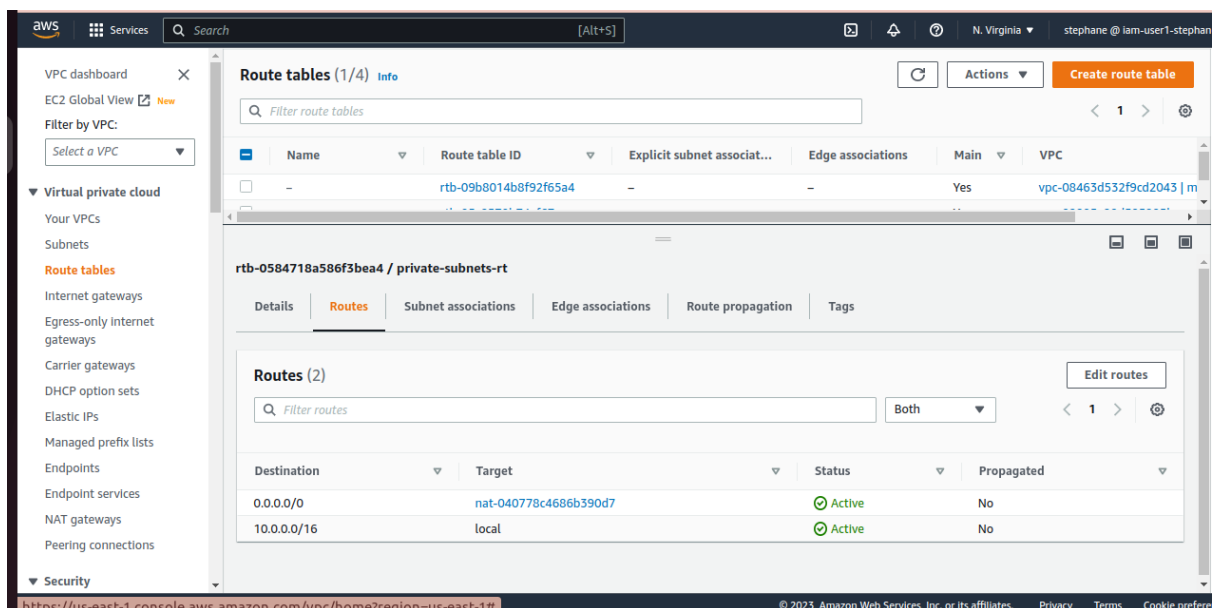
9. nat:



10. route table for the public subnets:



11. route table for the private subnets:



12. target group of the public ec2s:

The screenshot shows the AWS Management Console interface. On the left, the navigation menu is visible with categories like Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The 'Target Groups' page is displayed, showing a list of target groups. The 'public-ec2s-tg' target group is selected, and its details are shown in a modal window. The modal window has tabs for Details, Targets, Monitoring, Health checks, Attributes, and Tags. The 'Targets' tab is active, showing a list of registered targets. The targets are listed in a table with columns: Instance ID, Name, Port, Zone, Health status, and Health status details. Two targets are listed, both with a 'healthy' status.

Instance ID	Name	Port	Zone	Health status	Health status details
I-0854bc1eb0c0ba243	public-ec2-az-a	80	us-east-1a	healthy	
I-00ac9fac7847372ce	public-ec2-az-b	80	us-east-1b	healthy	

13. target group of the private ec2s:

The screenshot shows the AWS Management Console interface. On the left, the navigation menu is visible with categories like Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The 'Target Groups' page is displayed, showing a list of target groups. The 'private-LB-tg' target group is selected, and its details are shown in a modal window. The modal window has tabs for Details, Targets, Monitoring, Health checks, Attributes, and Tags. The 'Targets' tab is active, showing a list of registered targets. The targets are listed in a table with columns: Instance ID, Name, Port, Zone, Health status, and Health status details. Two targets are listed, both with a 'healthy' status.

Instance ID	Name	Port	Zone	Health status	Health status details
I-0ce8056e912dfefd8	private-ec2-az-b	80	us-east-1b	healthy	
I-04a30c490c3638c17	private-ec2-az-a	80	us-east-1a	healthy	

14. Load balancer:

aws Services Search [Alt+S] N. Virginia stephane @ iam-user1-stephan

EC2 > Load balancers > public-LB

public-LB

Details

arn:aws:elasticloadbalancing:us-east-1:184746411800:loadbalancer/app/public-LB/8bfe4b2b455fd2e0

Load balancer type Application	DNS name public-LB-2041302718.us-east-1.elb.amazonaws.com (A Record)	Status Active	VPC vpc-08463d532f9cd2043
IP address type IPv4	Scheme Internet-facing	Availability Zones subnet-0622ccc92cc7264f2 us-east-1b (use1-az6) subnet-03551bb503d910049 us-east-1a (use1-az4)	Hosted zone Z35SXDOTRQ7X7K
Date created January 27, 2023, 22:10 (UTC+02:00)			

Listeners Network mapping Security Monitoring Integrations Attributes Tags

Feedback Looking for language selection? Find it in the new Unified Settings

© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

security group of the public-LB:

aws Services Search [Alt+S] N. Virginia stephane @ iam-user1-stephan

New EC2 Experience Tell us what you think

EC2 Dashboard EC2 Global View Events Tags Limits

Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Scheduled Instances Capacity Reservations

Images AMIs AMI Catalog

Details

Security group name public-LB-sg	Security group ID sg-08238194876d5cc5b	Description public lb sg	VPC ID vpc-08463d532f9cd2043
Owner 184746411800	Inbound rules count 1 Permission entry	Outbound rules count 1 Permission entry	

Inbound rules Outbound rules Tags

You can now check network connectivity with Reachability Analyzer [Run Reachability Analyzer](#)

Inbound rules (1/1)

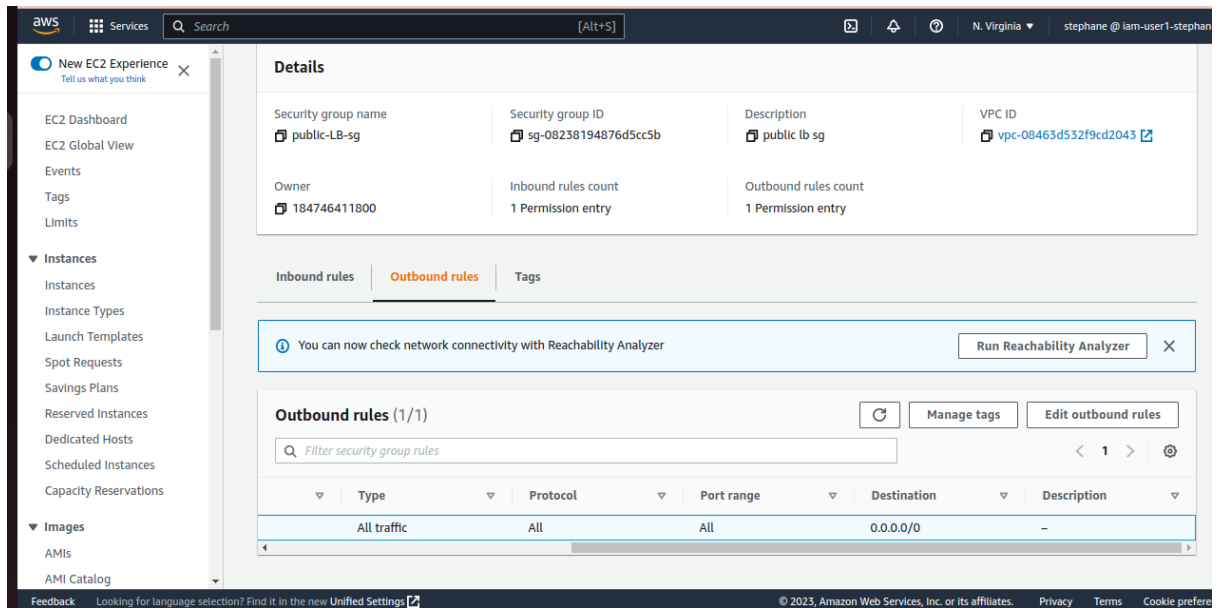
Filter security group rules

Type	Protocol	Port range	Source	Description
HTTP	TCP	80	0.0.0.0/0	-

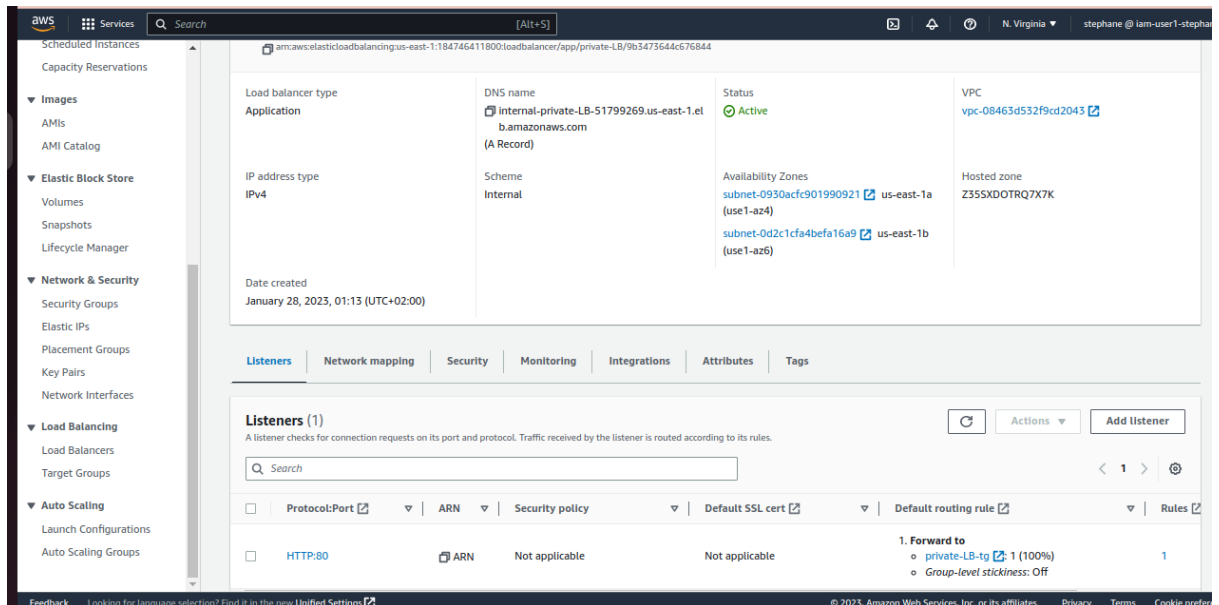
Manage tags Edit inbound rules

Feedback Looking for language selection? Find it in the new Unified Settings

© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences



private-LB:



security group of private -LB:

EC2 > Security Groups > sg-002ec34776ff1d555 - private-LB-sg

sg-002ec34776ff1d555 - private-LB-sg

Actions

Details

Security group name	private-LB-sg	Security group ID	sg-002ec34776ff1d555	Description	private LB	VPC ID	vpc-08463d532f9cd2043
Owner	184746411800	Inbound rules count	1 Permission entry	Outbound rules count	1 Permission entry		

Inbound rules | Outbound rules | Tags

You can now check network connectivity with Reachability Analyzer [Run Reachability Analyzer](#)

Inbound rules (1/1) [Manage tags](#) [Edit inbound rules](#)

Filter security group rules

rule...	IP version	Type	Protocol	Port range	Source	Description
c4feb6	-	HTTP	TCP	80	sg-03ac6a9c987c5086f / allow-tg	-

EC2 > Security Groups > sg-002ec34776ff1d555 - private-LB-sg

sg-002ec34776ff1d555 - private-LB-sg

Actions

Details

Security group name	private-LB-sg	Security group ID	sg-002ec34776ff1d555	Description	private LB	VPC ID	vpc-08463d532f9cd2043
Owner	184746411800	Inbound rules count	1 Permission entry	Outbound rules count	1 Permission entry		

Inbound rules | **Outbound rules** | Tags

You can now check network connectivity with Reachability Analyzer [Run Reachability Analyzer](#)

Outbound rules (1/1) [Manage tags](#) [Edit outbound rules](#)

Filter security group rules

rule...	IP version	Type	Protocol	Port range	Destination	Description
42bfb7	IPv4	All traffic	All	All	0.0.0.0/0	-

15. reverse proxy of public ec2s:

```
ubuntu@ip-10-0-0-9: ~  
# See: https://bugs.debian.org/765782  
#  
# Self signed certs generated by the ssl-cert package  
# Don't use them in a production server!  
#  
# include snippets/snakeoil.conf;  
  
# Add index.php to the list if you are using PHP  
index index.html index.htm index.nginx-debian.html;  
  
server_name _;  
  
location / {  
    # First attempt to serve request as file, then  
    # as directory, then fall back to displaying a 404.  
    proxy_pass http://internal-private-LB-51799269.us-east-1.elb.amazonaws.com;  
}  
  
# pass PHP scripts to FastCGI server  
#  
#location ~ /\.php$ {  
#    include snippets/fastcgi-php.conf;  
#  
#    # With php-fpm (or other unix sockets):  
#    fastcgi_pass unix:/run/php/php7.4-fpm.sock;  
#    # With php-cgi (or other tcp sockets):  
#    fastcgi_pass 127.0.0.1:9000;  
#}  
  
# deny access to .htaccess files, if Apache's document root  
# concurs with nginx's one  
#  
#location ~ /\.ht {  
#    deny all;  
#}
```

51,77-91 61

user data of private ec2s:

```
1 #!/bin/bash
2 sudo apt update -y
3 sudo apt install nginx -y
4 sudo echo "hello from ec2 az 1"
5 sudo systemctl enable nginx
6 sudo systemctl start nginx
```

16. output:

Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

