

Load Balancer Project

1- Launch a Jump host.

Public IP 35.173.228.101 &
Private IP 10.0.0.102

EC2 > Instances > i-0b4e909de3045901d

Instance summary for i-0b4e909de3045901d (Public 1) Info

Updated less than a minute ago

Refresh Connect Instance state Actions

Instance ID i-0b4e909de3045901d (Public 1)	Public IPv4 address 35.173.228.101 open address	Private IPv4 addresses 10.0.0.102
IPv6 address -	Instance state Running	Public IPv4 DNS -
Hostname type IP name: ip-10-0-0-102.ec2.internal	Private IP DNS name (IPv4 only) ip-10-0-0-102.ec2.internal	

Private IP 10.0.1.87

EC2 > Instances > i-0998e54ad07cb20ba

Instance summary for i-0998e54ad07cb20ba (private 1) Info

Updated less than a minute ago

Refresh Connect Instance state Actions

Instance ID i-0998e54ad07cb20ba (private 1)	Public IPv4 address -	Private IPv4 addresses 10.0.1.87
IPv6 address -	Instance state Running	Public IPv4 DNS -
Hostname type IP name: ip-10-0-1-87.ec2.internal	Private IP DNS name (IPv4 only) ip-10-0-1-87.ec2.internal	
Answer private resource DNS name -	Instance type t2.micro	Elastic IP addresses -
Auto-assigned IP address -	VPC ID vpc-0e3c55e4080cd9edb (Load_Balancer-VPC)	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more
IAM Role -	Subnet ID subnet-0f4ff210a4306dec9 (Private_problem1)	Auto Scaling Group name -
IMDSv2 Optional		

ssh from bastion host to private machine

```
ubuntu@ip-10-0-0-102:~$ vi Bastion-Key
ubuntu@ip-10-0-0-102:~$ chmod 400 Bastion-Key
ubuntu@ip-10-0-0-102:~$ ssh -i Bastion-Key ubuntu@10.0.1.87
The authenticity of host '10.0.1.87 (10.0.1.87)' can't be established.
ED25519 key fingerprint is SHA256:eGcfV0doUH4GBYppN3iUXGNYUBQjANLUvqdZmVKJ6vw.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.0.1.87' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.2 LTS (GNU/Linux 5.19.0-1025-aws x86_64)
```

```
* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage
```

System information as of Sun Jun 11 18:05:17 UTC 2023

System load:	0.02978515625	Processes:	99
Usage of /:	20.6% of 7.57GB	Users logged in:	0
Memory usage:	23%	IPv4 address for eth0:	10.0.1.87
Swap usage:	0%		

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See <https://ubuntu.com/esm> or run: `sudo pro status`

The list of available updates is more than a week old.
To check for new updates run: `sudo apt update`

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in `/usr/share/doc/*/copyright`.

```
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.0.1.87' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.2 LTS (GNU/Linux 5.19.0-1025-aws x86_64)
```

```
* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage
```

System information as of Sun Jun 11 18:05:17 UTC 2023

System load:	0.02978515625	Processes:	99
Usage of /:	20.6% of 7.57GB	Users logged in:	0
Memory usage:	23%	IPv4 address for eth0:	10.0.1.87
Swap usage:	0%		

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See <https://ubuntu.com/esm> or run: `sudo pro status`

The list of available updates is more than a week old.
To check for new updates run: `sudo apt update`

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in `/usr/share/doc/*/copyright`.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "`sudo <command>`".
See "`man sudo_root`" for details.

```
ubuntu@ip-10-0-1-87:~$ ls
ubuntu@ip-10-0-1-87:~$
```

2- Creating 2 Proxies connected to load balancer leading to 2 Nginx servers connected to load balancer

Public Target __ Instance 1&2 (Public) :-

Instance summary for i-0b4e909de3045901d (Public 1)

Updated less than a minute ago

Instance ID: i-0b4e909de3045901d (Public 1)

IPV6 address: --

Hostname type: IP name: ip-10-0-0-102.ec2.internal

Answer private resource DNS name: --

Auto-assigned IP address: 35.173.228.101 [Public IP]

IAM Role: --

IMDSv2: Optional

Public IPv4 address: 35.173.228.101 | [open address](#)

Instance state: **Running**

Private IP DNS name (IPv4 only): ip-10-0-0-102.ec2.internal

Instance type: t2.micro

VPC ID: vpc-0e3c5e4080c0f9e1b (Load_balancer-VPC)

Subnet ID: subnet-08b5df1110e52991 (Public_problem1)

Private IPv4 addresses: 10.0.0.102

Public IPv4 DNS: --

Elastic IP addresses: --

AWS Compute Optimizer finding: [Opt-in to AWS Compute Optimizer for recommendations. | Learn more](#)

Auto Scaling Group name: --

Details | **Security** | Networking | Storage | Status checks | Monitoring | Tags

▼ Security details

IAM Role: --

Owner ID: 991644510208

Launch time: Sun Jun 11 2023 21:00:11 GMT+0300 (Eastern European Summer Time)

Security groups: sg-0444885db79db55ea (SG_Problem1)

▼ Inbound rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
--	sg-037681288fc7655ad	22	TCP	0.0.0.0/0	SG_Problem1	--
--	sg-0dffbca3757696c21	80	TCP	sg-078923e64d90d0a28	SG_Problem1	--

▼ Outbound rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
--	sg-037681288fc7655ad	22	TCP	0.0.0.0/0	SG_Problem1	--
--	sg-0dffbca3757696c21	80	TCP	sg-078923e64d90d0a28	SG_Problem1	--

Instance summary for i-086146147a79a86a2 (Public2)

Updated less than a minute ago

Instance ID: i-086146147a79a86a2 (Public2)

IPV6 address: --

Hostname type: IP name: ip-10-0-2-107.ec2.internal

Answer private resource DNS name: --

Auto-assigned IP address: 44.193.201.178 [Public IP]

IAM Role: --

IMDSv2: Optional

Public IPv4 address: 44.193.201.178 | [open address](#)

Instance state: **Running**

Private IP DNS name (IPv4 only): ip-10-0-2-107.ec2.internal

Instance type: t2.micro

VPC ID: vpc-0e3c5e4080c0f9e1b (Load_balancer-VPC)

Subnet ID: subnet-08b1e0cb208073f9a (Public_problem2)

Private IPv4 addresses: 10.0.2.107

Public IPv4 DNS: --

Elastic IP addresses: --

AWS Compute Optimizer finding: [Opt-in to AWS Compute Optimizer for recommendations. | Learn more](#)

Auto Scaling Group name: --

Details | **Security** | Networking | Storage | Status checks | Monitoring | Tags

▼ Security details

IAM Role: --

Owner ID: 991644510208

Launch time: Sun Jun 11 2023 22:52:55 GMT+0300 (Eastern European Summer Time)

Security groups: sg-0444885db79db55ea (SG_Problem1)

▼ Inbound rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
--	sg-037681288fc7655ad	22	TCP	0.0.0.0/0	SG_Problem1	--
--	sg-0dffbca3757696c21	80	TCP	sg-078923e64d90d0a28	SG_Problem1	--

▼ Outbound rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
--	sg-037681288fc7655ad	22	TCP	0.0.0.0/0	SG_Problem1	--
--	sg-0dffbca3757696c21	80	TCP	sg-078923e64d90d0a28	SG_Problem1	--

aws

Services

Search

[Alt+S]

📧

🔔

🔄

N. Virginia

Mohammed Saady

EC2

New EC2 Experience

EC2 Dashboard

EC2 Global View

Events

Limits

Instances

Instances Types

Launch Templates

Spot Requests

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

One target registered successfully to PublicTarget.

EC2 > Target groups

Target groups (1/1)

Find resources by attribute or tag

	Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
<input checked="" type="checkbox"/>	PublicTarget	arn:aws:elasticloadbalancing:us-east-1:123456789012:targetgroup/PublicTarget/vpc-0e3c55e4080cd9edb	80	HTTP	Instance	PublicLoadBalancer	vpc-0e3c55e4080cd9edb

Target group: PublicTarget

DetailsTargetsMonitoringHealth checksAttributesTags

Registered targets (2)

Filter resources by property or value

	Instance ID	Name	Port	Zone	Health status	Health status details
<input type="checkbox"/>	i-086146147a79a86a2	Public2	80	us-east-1b	healthy	
<input type="checkbox"/>	i-0b4e909de3045901d	Public 1	80	us-east-1a	healthy	

aws

Services

Search

[Alt+S]

📧

🔔

🔄

N. Virginia

Mohammed Saady

EC2

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

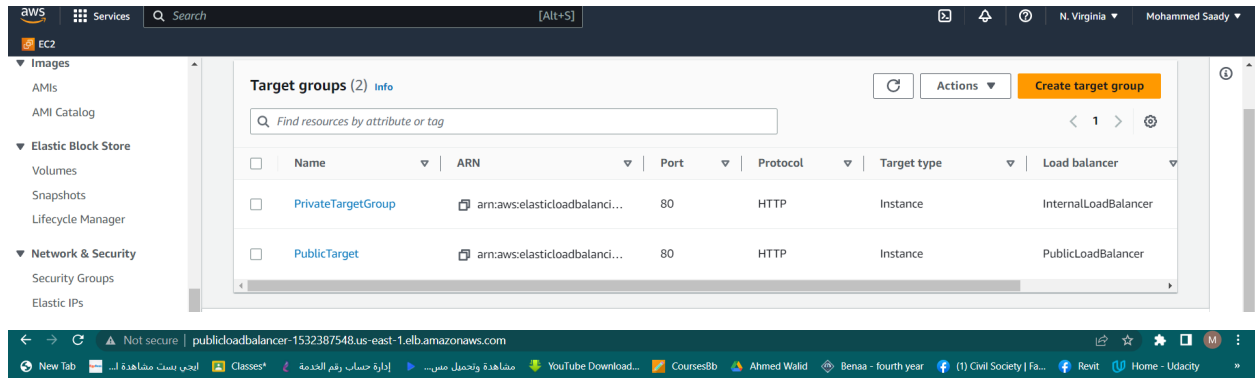
Security Groups

Load balancers (2)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Find resources by attribute or tag

	Name	DNS name	State	VPC ID	Availability Zones	Type	Date
<input type="checkbox"/>	PublicLoadBalancer	PublicLoadBalancer-15323...	Active	vpc-0e3c55e4080cd9edb	2 Availability Zones	application	June (UTC)
<input type="checkbox"/>	InternalLoadBalancer	internal-InternalLoadBala...	Active	vpc-0e3c55e4080cd9edb	2 Availability Zones	application	June (UTC)

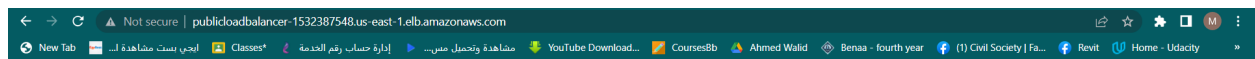


Welcome to nginx!

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.



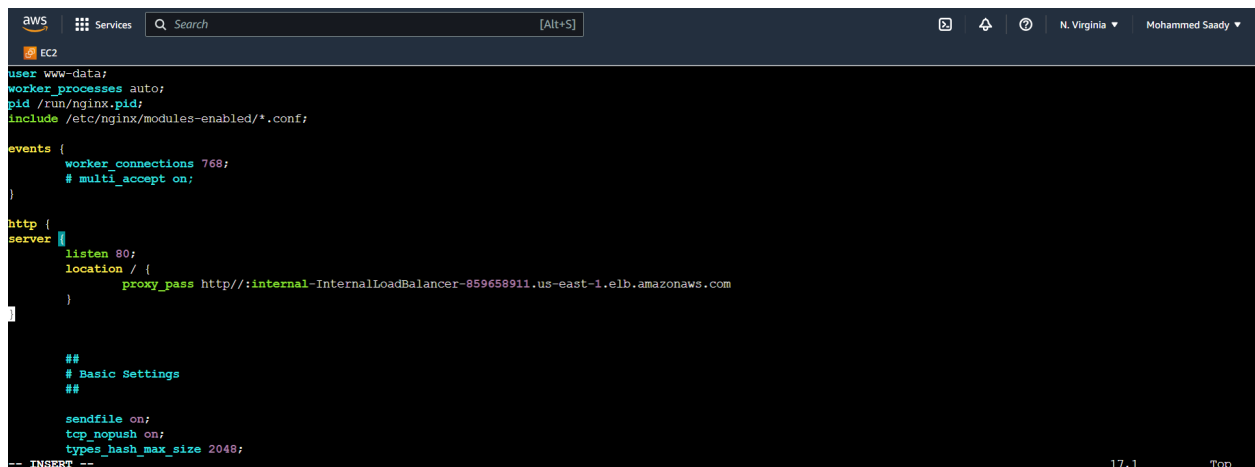
Welcome to nginx 222!

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.

Configuration Nginx



Auto Scaling

EC2

Images

- AMIs
- AMI Catalog

Elastic Block Store

- Volumes
- Snapshots
- Lifecycle Manager

Network & Security

- Security Groups
- Elastic IPs
- Placement Groups
- Key Pairs
- Network Interfaces

Load Balancing

- Load Balancers
- Target Groups

Auto Scaling

- Auto Scaling Groups

EC2 > Auto Scaling groups > Privat-Subnets

Privat-Subnets

Details | Activity | Automatic scaling | Instance management | Monitoring | Instance refresh

Group details

Auto Scaling group name
Privat-Subnets

Desired capacity
2

Date created
Mon Jun 12 2023 16:06:58 GMT+0300
(Eastern European Summer Time)

Minimum capacity
2

Maximum capacity
5

Status
-

Amazon Resource Name (ARN)
arn:aws:autoscaling:us-east-1:991644510208:autoScalingGroup:5dc2fd0d-9204-4d33-b16a-1fdbed001c78:autoScalingGroupName/Privat-Subnets

Edit

Launch template

Launch template
lt-0310418cd5516d3a1
AutoScalingPrivate

AMI ID
ami-053b0d53c279acc90

Instance type
t2.micro

Owner
arn:aws:iam::991644510208:root

Edit

New EC2 Experience

EC2 Dashboard

EC2 Global View

Events

Limits

Instances

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

Notifications

Instances (9)

Find instance by attribute or tag (case-sensitive)

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input type="checkbox"/>	Public 1	i-0b4e909de3045901d	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a	-
<input type="checkbox"/>	Private_Instan...	i-06928122eca565500	Terminated	t2.micro	-	No alarms	us-east-1a	-
<input type="checkbox"/>	Private1	i-03c1db0f1dfad9648	Terminated	t2.micro	-	No alarms	us-east-1a	-
<input type="checkbox"/>	Private1	i-0dd6bd4dbfcf0ab9c	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a	-
<input type="checkbox"/>	Private1	i-05cfa99da44e0253f	Terminated	t2.micro	-	No alarms	us-east-1a	-
<input type="checkbox"/>	Private1	i-0e842bf198b939dfb	Running	t2.micro	-	No alarms	us-east-1a	-
<input type="checkbox"/>	Public2	i-086146147a79a86a2	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	-
<input type="checkbox"/>	Private_Instan...	i-08f79d7ab2fab2cd4	Terminated	t2.micro	-	No alarms	us-east-1b	-
<input type="checkbox"/>	Private2	i-015022ac358af01ed	Terminated	t2.micro	-	No alarms	us-east-1b	-