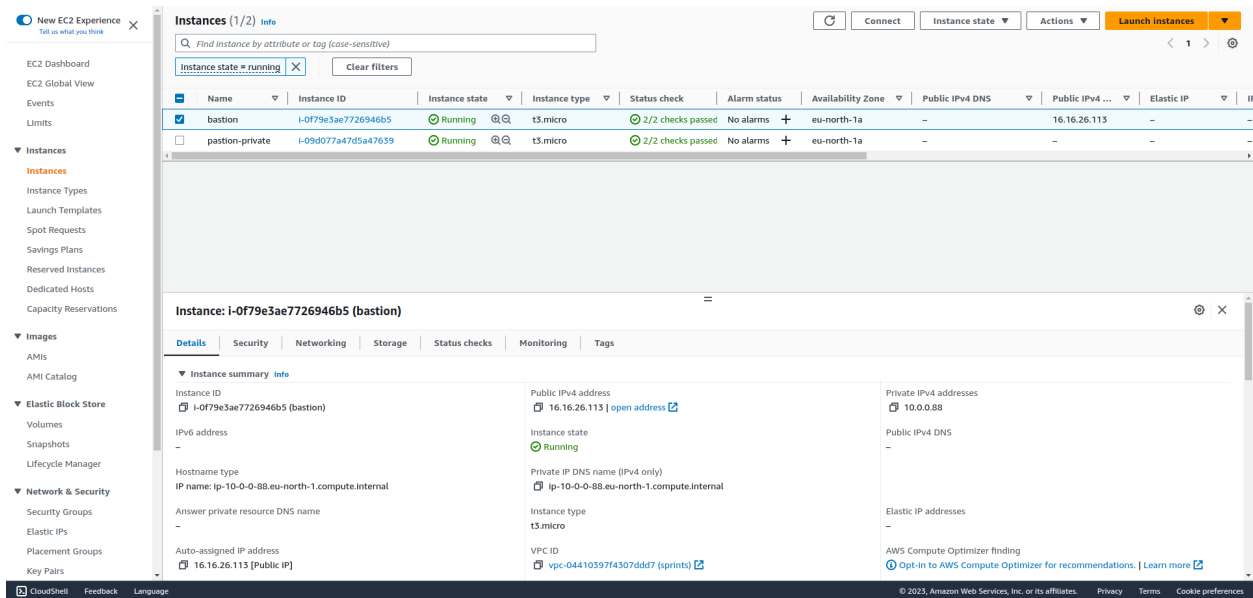


Lab 1

bastion ec2



The screenshot shows the AWS Management Console 'Instances' page. The 'bastion' instance is selected, and its details are displayed below the table. The instance is running and has a public IP address of 16.16.26.113.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
bastion	i-0f79e3ae7726946b5	Running	t3.micro	2/2 checks passed	No alarms	eu-north-1a	-	16.16.26.113	-
bastion-private	i-09d077a47d5a47639	Running	t3.micro	2/2 checks passed	No alarms	eu-north-1a	-	-	-

Instance: i-0f79e3ae7726946b5 (bastion)

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

Instance summary | Info

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0f79e3ae7726946b5 (bastion)	16.16.26.113 open address	10.0.0.88

Instance state

Running

Private IP DNS name (IPv4 only)

ip-10-0-0-88.eu-north-1.compute.internal

Instance type

t3.micro

VPC ID

vpc-04410397f4307ddd7 (sprints) | [sprints](#)

Auto-assigned IP address

16.16.26.113 [Public IP]

Answer private resource DNS name

-

IPV6 address

-

Hostname type

IP name: ip-10-0-0-88.eu-north-1.compute.internal

Hostnames

-

Answer private resource DNS name

-

Auto-assigned IP address

16.16.26.113 [Public IP]

Connecting to public ec2

```
ubuntu@ip-10-0-0-88: ~$ ssh -i sprints-key.pem ubuntu@16.16.26.113
The authenticity of host '16.16.26.113 (16.16.26.113)' can't be established.
ED25519 key fingerprint is SHA256:VR8Bt/b/ftAjcATtc7w38gP2n0J14kZVGtx+wGL3VhE.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added '16.16.26.113' (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 Thu Jun  8 13:56:18 UTC 2023

System load:  0.0          Processes:      101
Usage of /:   20.6% of 7.57GB Users logged in:  0
Memory usage: 23%         IPv4 address for ens5: 10.0.0.88
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-10-0-0-88: ~$
```

Private ec2

The screenshot shows the AWS Management Console interface. On the left, there's a navigation menu with options like 'New EC2 Experience', 'EC2 Dashboard', 'Events', 'Limits', 'Instances', 'Images', 'Elastic Block Store', and 'Network & Security'. The main area displays the 'Instances' page, which includes a search bar and a table of instances. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, Public IPv4 ..., Elastic IP, and IP. Two instances are listed: 'bastion' and 'bastion-private'. The 'bastion-private' instance is selected, and its details are shown in the right pane. The details pane shows the instance is running, has a public IPv4 address of 10.0.1.118, and a private IP address of 10.0.1.118. A tooltip indicates 'Private IPv4 address copied'.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IP
bastion	i-0f79e3ae7726946b5	Running	t3.micro	2/2 checks passed	No alarms	eu-north-1a	-	16.16.26.113	-	-
bastion-private	i-09d077a47d5a47639	Running	t3.micro	2/2 checks passed	No alarms	eu-north-1a	-	-	-	-

Instance: i-09d077a47d5a47639 (bastion-private)

Details summary info

Instance ID: i-09d077a47d5a47639 (bastion-private)

IPv4 address: -

Hostname type: -

IP name: ip-10-0-1-118.eu-north-1.compute.internal

Answer private resource DNS name: -

Auto-assigned IP address: -

Public IPv4 address: -

Instance state: Running

Private IP DNS name (IPv4 only): ip-10-0-1-118.eu-north-1.compute.internal

Instance type: t3.micro

VPC ID: vpc-04410397f4307dd7 (sprints)

Private IPv4 address copied

10.0.1.118

Public IPv4 DNS: -

Elastic IP addresses: -

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Connecting to private ec2 throw bastion ec2

```
ubuntu@ip-10-0-0-88:~$ ls
key.pem
ubuntu@ip-10-0-0-88:~$ ssh -i key.pem ubuntu@10.0.1.118
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 Thu Jun  8 14:04:22 UTC 2023

System load:  0.0          Processes:      102
Usage of /:   20.8% of 7.57GB   Users logged in:  0
Memory usage: 25%          IPv4 address for ens5: 10.0.1.118
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

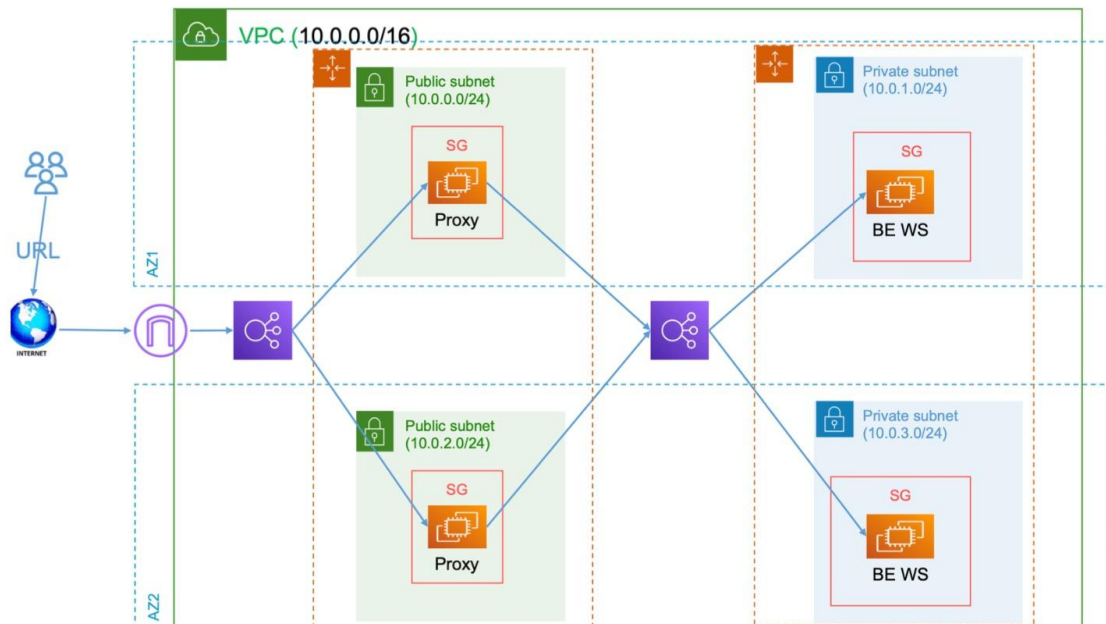
Last login: Thu Jun  8 14:03:20 2023 from 10.0.0.88
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-0-1-118:~$
```

Lab 2

Question1:

Implement a vpc with cidr 10.0.0.0/16 with 2 public subnets with cidrs 10.0.0.0/24 and 10.0.0.2.0/24 with a load balancer to Distribute the traffic between 2 machines with nginx installed in them as a proxy and 2 private subnets with the below cidrs 10.0.1.0/24 and 10.0.0.3.0/24 then a 2 instances attached in autoscaling in the private subnets with apache installed without SSH and load balancer to install between them



Needed :

A screenshot from the autoscaling group after indicating the minimum ,maximum and desired instances

Screenshot from the 2 target groups indicating the machines are healthy

Screenshot indicate the the machines BE WS are private

Screenshot from the public load balancer when you hit a request from it from a browser with a response returned from the instances

Instances

New EC2 Experience

EC2 Dashboard

EC2 Global View

Events

Limits

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Instances (4) Info

Find instance by attribute or tag (case-sensitive)

Instance state: running

Clear filters

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IP
<input type="checkbox"/>	sprint-public2	i-0a724b08756305afb	Running	t3.micro	2/2 checks passed	No alarms	eu-north-1c	-	16.16.78.154	-	-
<input type="checkbox"/>	http-2	i-0bed059546afb0b30	Running	t3.micro	2/2 checks passed	No alarms	eu-north-1c	-	-	-	-
<input type="checkbox"/>	nginx1	i-09ca796aad7786850	Running	t3.micro	2/2 checks passed	No alarms	eu-north-1b	-	13.53.133.202	-	-
<input type="checkbox"/>	http-apache	i-0aa52fbc90fca3ced	Running	t3.micro	2/2 checks passed	No alarms	eu-north-1b	-	-	-	-

Select an instance

CloudShell

Feedback

Language

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Subnets

VPC dashboard

EC2 Global View

Filter by VPC

Select a VPC

Virtual private cloud

Your VPCs

Subnets

Route tables

Internet gateways

Egress-only Internet gateways

DHCP option sets

Elastic IPs

Managed prefix lists

Endpoints

Endpoint services

NAT gateways

Peering connections

Security

Network ACLs

Security groups

DNS firewall

Rule groups

Domain lists

Network Firewall

Firewalls

Firewall policies

Subnets (7) Info

Filter subnets

	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 addresses	Avail
<input type="checkbox"/>	-	subnet-024f02dc0fedfea2a	Available	vpc-01a827b493691899d	172.31.32.0/20	-	4091	eu-n
<input type="checkbox"/>	-	subnet-0a566e00ea4d5e10c	Available	vpc-01a827b493691899d	172.31.0.0/20	-	4091	eu-n
<input type="checkbox"/>	-	subnet-02d5f6d72e8ccf3a9	Available	vpc-01a827b493691899d	172.31.16.0/20	-	4091	eu-n
<input type="checkbox"/>	sprint-public2	subnet-0380ab9e509d9141a	Available	vpc-04410397f4307ddd7 spr...	10.0.2.0/24	-	249	eu-n
<input type="checkbox"/>	private2	subnet-0210bcf503043ded3	Available	vpc-04410397f4307ddd7 spr...	10.0.3.0/24	-	249	eu-n
<input type="checkbox"/>	sprints-public1	subnet-0ea5357709a142fb1	Available	vpc-04410397f4307ddd7 spr...	10.0.0.0/24	-	248	eu-n
<input type="checkbox"/>	private1	subnet-02035046c5e859015	Available	vpc-04410397f4307ddd7 spr...	10.0.1.0/24	-	249	eu-n

Select a subnet

CloudShell

Feedback

Language

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Load balancer

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

<input type="checkbox"/>	Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
<input type="checkbox"/>	private-lb	internal-private-lb-14426...	Active	vpc-04410397f4307ddd7	2 Availability Zones	application	June 8, 2023, 23:56 (UTC+03:00)
<input type="checkbox"/>	public-lb	public-lb-1180713642.eu-...	Active	vpc-04410397f4307ddd7	2 Availability Zones	application	June 8, 2023, 18:48 (UTC+03:00)

0 load balancers selected

Select a load balancer above.

Targets group

Target groups (2)

Find resources by attribute or tag

<input type="checkbox"/>	Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
<input type="checkbox"/>	puclic-instance	arn:aws:elasticloadbalancing:eu-north-1:3202-0351-1573:targetgroup/puclic-instance/1573-1573-1573-1573	80	HTTP	Instance	public-lb	vpc-04410397f4307ddd7
<input type="checkbox"/>	tg-private	arn:aws:elasticloadbalancing:eu-north-1:3202-0351-1573:targetgroup/tg-private/1573-1573-1573-1573	80	HTTP	Instance	private-lb	vpc-04410397f4307ddd7

0 target groups selected

Select a target group above.

Private Target group with healthy ec2s

The screenshot displays the AWS Management Console interface for a private target group named 'tg-private'. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Limits, Instances, Images, Elastic Block Store, and Network & Security. The main content area shows the 'Details' tab for the target group, which is associated with the ARN 'arn:aws:elasticloadbalancing:eu-north-1:32020551573:targetgroup/tg-private/c743c16702bfb09e'. The details table indicates 2 total targets, all of which are healthy. Below this, the 'Distribution of targets by Availability Zone (AZ)' section shows two registered targets: 'http-2' in eu-north-1c and 'http-apache' in eu-north-1b, both with a healthy status.

Details

arn:aws:elasticloadbalancing:eu-north-1:32020551573:targetgroup/tg-private/c743c16702bfb09e

Target type	Protocol : Port	Protocol version	VPC
Instance	HTTP: 80	HTTP1	vpc-04410397f4307ddd7
IP address type	Load balancer private-ip		

Total targets	Healthy	Unhealthy	Unused	Initial	Draining
2	2	0	0	0	0

Distribution of targets by Availability Zone (AZ)

Select values in this table to see corresponding filters applied to the Registered targets table below.

Instance ID	Name	Port	Zone	Health status	Health status details
i-0bed059546afb0b30	http-2	80	eu-north-1c	healthy	
i-0aa52fb0c90fca3ced	http-apache	80	eu-north-1b	healthy	

Public target group with healthy ec2s

The screenshot displays the AWS Management Console interface for a public target group named 'puclic-instance'. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Limits, Instances, Images, Elastic Block Store, and Network & Security. The main content area shows the 'Details' tab for the target group, which is associated with the ARN 'arn:aws:elasticloadbalancing:eu-north-1:32020551573:targetgroup/puclic-instance/67c8ac61a474edba'. The details table indicates 2 total targets, all of which are healthy. Below this, the 'Distribution of targets by Availability Zone (AZ)' section shows two registered targets: 'sprint-public2' in eu-north-1c and 'nginx1' in eu-north-1b, both with a healthy status.

Details

arn:aws:elasticloadbalancing:eu-north-1:32020551573:targetgroup/puclic-instance/67c8ac61a474edba

Target type	Protocol : Port	Protocol version	VPC
Instance	HTTP: 80	HTTP1	vpc-04410397f4307ddd7
IP address type	Load balancer public-ip		

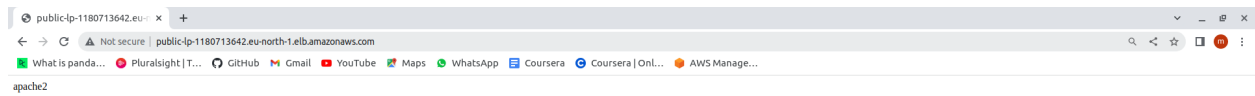
Total targets	Healthy	Unhealthy	Unused	Initial	Draining
2	2	0	0	0	0

Distribution of targets by Availability Zone (AZ)

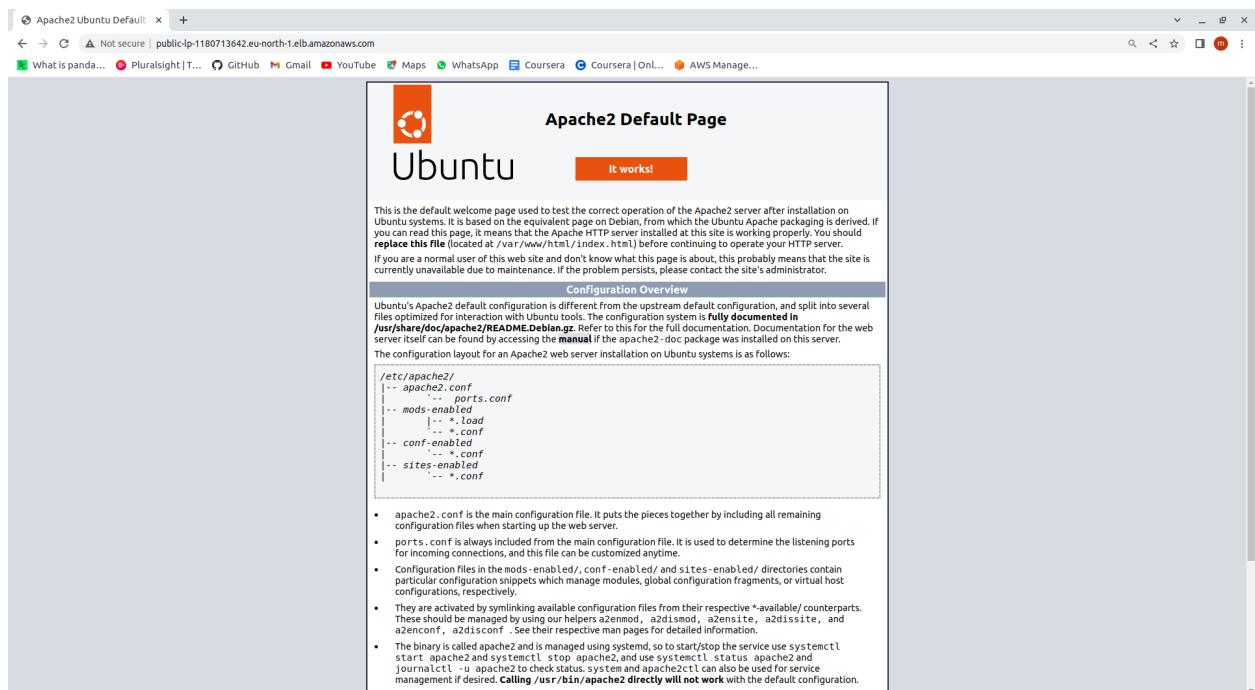
Select values in this table to see corresponding filters applied to the Registered targets table below.

Instance ID	Name	Port	Zone	Health status	Health status details
i-0a724b08756305afb	sprint-public2	80	eu-north-1c	healthy	
i-09ca796aad7786650	nginx1	80	eu-north-1b	healthy	

Private ec2 after calling the public load balancer



Private ec2 after calling the public load balancer



Auto scaling group

BWS

Services

auto Scaling groups

Stockholm

admin @ 3202-0353-1573

EC2 > Auto Scaling groups

Auto Scaling groups (1/1) Info

Launch configurationsLaunch templatesActionsCreate Auto Scaling group

Search your Auto Scaling groups

< 1 >

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
<input checked="" type="checkbox"/>	http	my-temp Version Default	1	-	1	1	1	eu-north-1b, eu-north-1c

Auto Scaling group: http

DetailsActivityAutomatic scalingInstance managementMonitoringInstance refresh

Instances (1)

Filter instances

< 1 >

<input type="checkbox"/>	Instance ID	Lifecycle	Instance type	Weighted capacity	Launch template/co...	Availability Zone	Health status	Protected from
<input type="checkbox"/>	i-00a32d0aca0725d28	InService	t3.micro	-	my-temp Version 1	eu-north-1c	Healthy	

Lifecycle hooks (0) Info

Filter lifecycle hooks

< 1 >

<input type="checkbox"/>	Name	Lifecycle transition	Default result	Heartbeat timeout (seconds)	Notification target ARN	Role ARN
No lifecycle hooks are currently configured.						

Lifecycle hooks help you perform custom actions on instances as they launch and before they terminate.

FeedbackLanguage

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