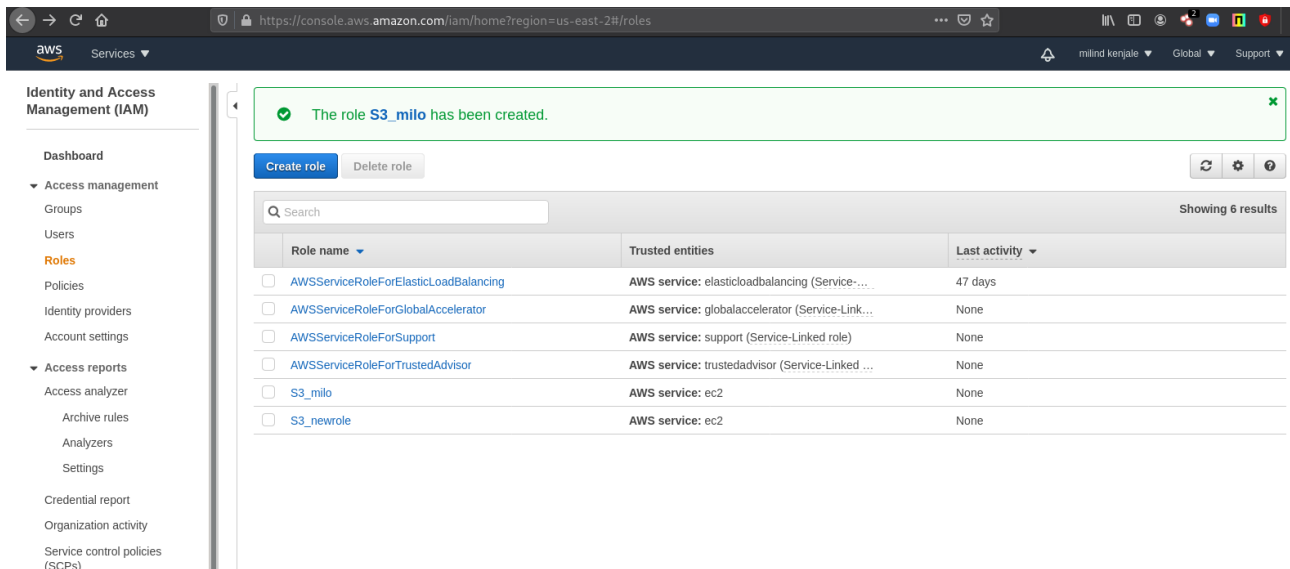


Assignment 2

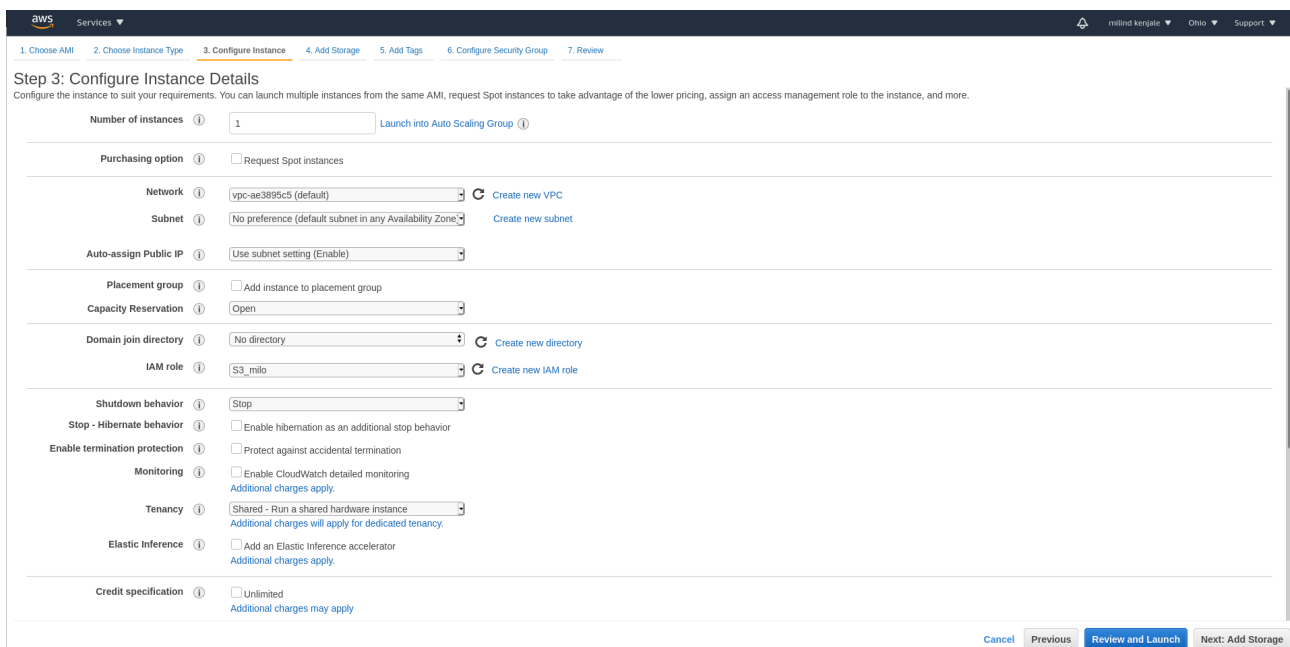
Project1: Working with IAM roles with S3 and bootstrapping with EC2

1. Created IAM S3 role

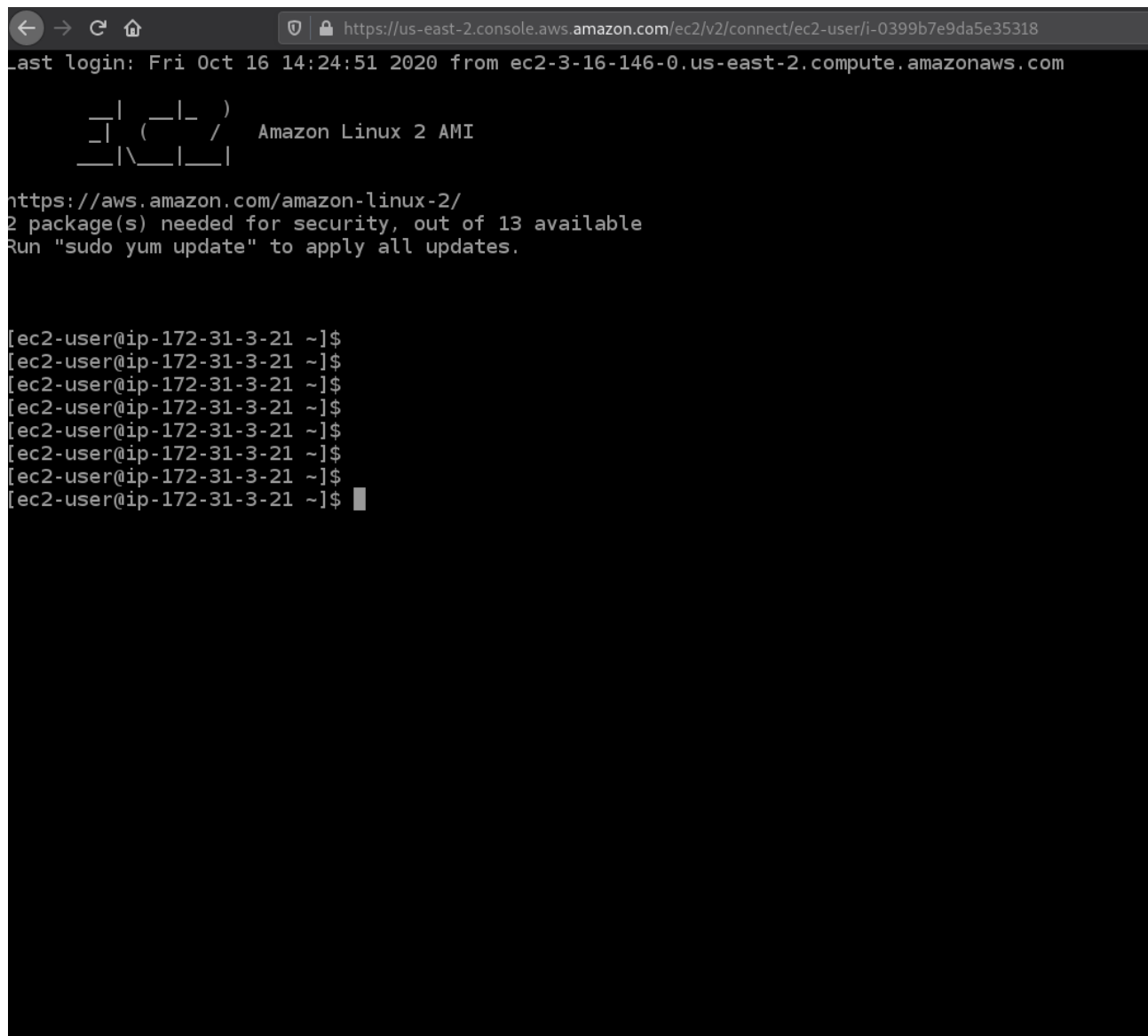


2. Instance creation

Selected required IAM role



Console of the EC2 instance



```
← → ↺ ↻ https://us-east-2.console.aws.amazon.com/ec2/v2/connect/ec2-user/i-0399b7e9da5e35318
Last login: Fri Oct 16 14:24:51 2020 from ec2-3-16-146-0.us-east-2.compute.amazonaws.com

  _| _|_ )
 _| ( _| /  Amazon Linux 2 AMI
 _|\_|_|_|

https://aws.amazon.com/amazon-linux-2/
2 package(s) needed for security, out of 13 available
Run "sudo yum update" to apply all updates.

[ec2-user@ip-172-31-3-21 ~]$
[ec2-user@ip-172-31-3-21 ~]$
[ec2-user@ip-172-31-3-21 ~]$
[ec2-user@ip-172-31-3-21 ~]$
[ec2-user@ip-172-31-3-21 ~]$
[ec2-user@ip-172-31-3-21 ~]$
[ec2-user@ip-172-31-3-21 ~]$
[ec2-user@ip-172-31-3-21 ~]$
```

i-0399b7e9da5e35318 (linuxinstances3)

Public IPs: 3.14.142.56 Private IPs: 172.31.3.21

Created S3 bucket with name milowebhosting01

```

[root@ip-172-31-3-21 ec2-user]# aws s3 mb s3://letsupgrade02
make_bucket failed: s3://letsupgrade02 An error occurred (BucketAlreadyExists) when calling the CreateBucket operation: The requested bucket name is not available. The bucket namespace is shared by all users of the system. Please select a different name and try again.
[root@ip-172-31-3-21 ec2-user]#
[root@ip-172-31-3-21 ec2-user]#
[root@ip-172-31-3-21 ec2-user]# aws s3 mb s3://milowebhosting01
make_bucket: milowebhosting01
[root@ip-172-31-3-21 ec2-user]#
[root@ip-172-31-3-21 ec2-user]# aws s3 ls
2020-10-04 07:01:36 milo06061983
2020-10-04 08:08:34 miloversioning06061983
2020-10-16 14:44:04 milowebhosting01
2020-10-10 07:32:49 s3-letsupgradedemo
[root@ip-172-31-3-21 ec2-user]#

```

i-0399b7e9da5e35318 (linuxinstances3)

Public IPs: 3.14.142.56 Private IPs: 172.31.3.21

Verified whether S3 has been created through S3 web

The screenshot shows the AWS S3 console interface. On the left, there's a navigation menu with options like Buckets, Batch operations, Access analyzer for S3, Block public access, and Feature spotlight. The main area displays a message about the S3 console experience and a table of S3 buckets. The table has columns for Bucket name, Access, Region, and Date created. Four buckets are listed: milo06061983, miloversioning06061983, milowebhosting01, and s3-letsupgradedemo.

Bucket name	Access	Region	Date created
milo06061983	Objects can be public	US East (Ohio)	Oct 4, 2020 12:31:36 PM GMT+0530
miloversioning06061983	Bucket and objects not public	US East (Ohio)	Oct 4, 2020 1:38:34 PM GMT+0530
milowebhosting01	Objects can be public	US East (N. Virginia)	Oct 16, 2020 8:14:04 PM GMT+0530
s3-letsupgradedemo	Bucket and objects not public	US East (Ohio)	Oct 10, 2020 1:02:49 PM GMT+0530

Uploaded index.html and error.html in S3 bucket

The screenshot shows the AWS S3 console interface for the bucket 'milowebhosting01'. The 'Overview' tab is selected, showing a list of objects. Two objects are listed: 'error.html' and 'index.html', both uploaded on Oct 16, 2020 at 8:29:30 PM GMT+0530. The 'index.html' object is highlighted.

Name	Last modified	Size	Storage class
error.html	Oct 16, 2020 8:29:30 PM GMT+0530	35.0 B	Standard
index.html	Oct 16, 2020 8:29:30 PM GMT+0530	22.0 B	Standard

Adding bootstrap script in EC2 instance “Edit user data”

The screenshot shows the AWS Management Console interface for the EC2 instance 'i-0399b7e9da5e35318'. The 'Edit user data' page is displayed, showing the current user data and a new user data field. The current user data contains a script to install httpd and serve static content from an S3 bucket. The new user data field is empty, and the 'Modify user data as text' radio button is selected.

Edit user data

Instance ID: i-0399b7e9da5e35318 (linuxinstances3)

Current user data

```

#!/bin/bash
sudo su -
yum install httpd -y
aws s3 cp s3://milowebhosting01/index.html /var/www/html
service httpd start
chkconfig httpd on

```

New user data

This user data will replace the current user data

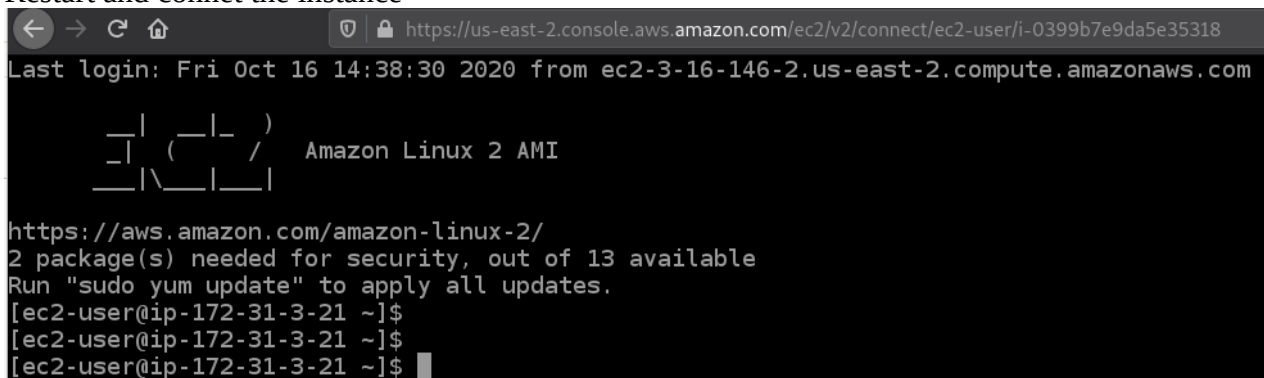
☒ Modify user data as text
Add your user data below

☐ Modify user data by importing a file
Description of importing a file and what will happen to it

☐ Input is already base64-encoded

Cancel Save

Restart and connect the instance

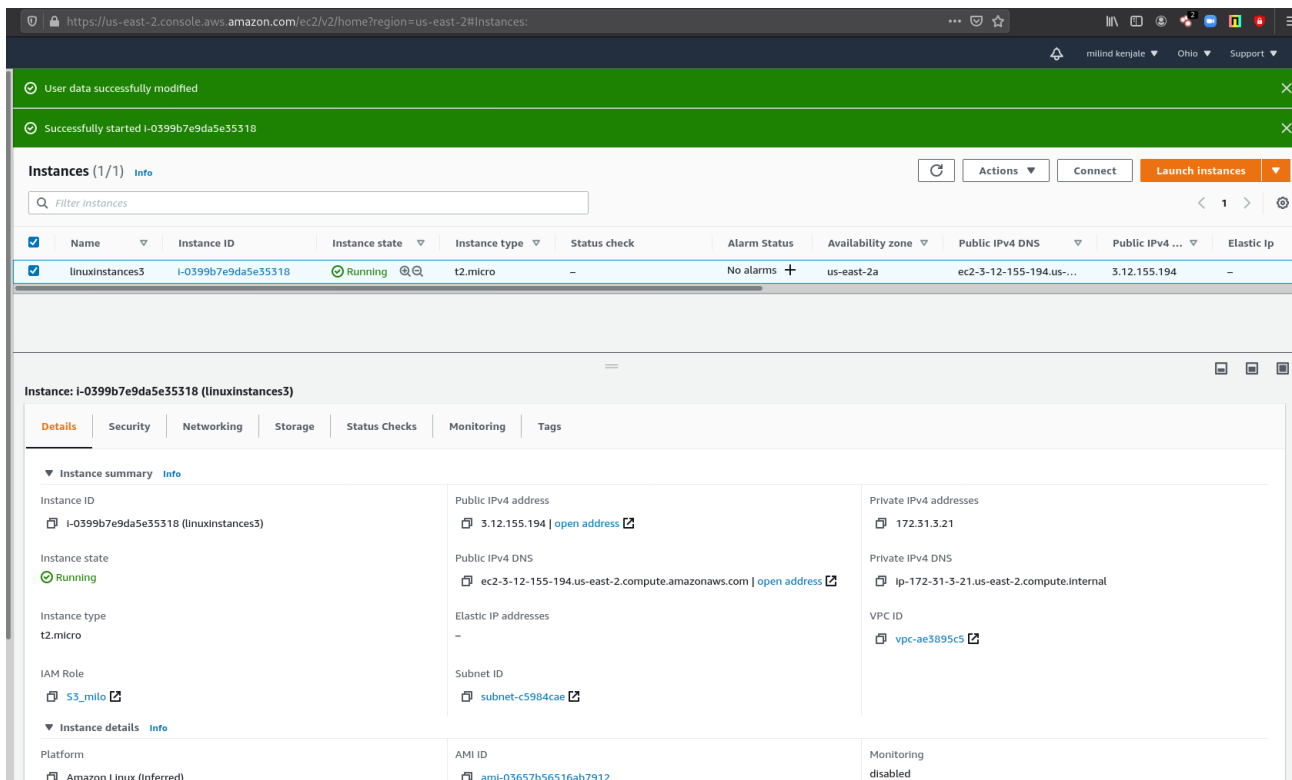


The screenshot shows a terminal window from the AWS Management Console. The browser address bar at the top displays the URL: `https://us-east-2.console.aws.amazon.com/ec2/v2/connect/ec2-user/i-0399b7e9da5e35318`. The terminal output begins with a login message: `Last login: Fri Oct 16 14:38:30 2020 from ec2-3-16-146-2.us-east-2.compute.amazonaws.com`. This is followed by the Amazon Linux 2 AMI logo, which consists of a stylized tree-like structure of underscores and pipes. Below the logo, the text `Amazon Linux 2 AMI` is displayed. The terminal then shows the URL `https://aws.amazon.com/amazon-linux-2/`, a security update notification stating `2 package(s) needed for security, out of 13 available`, and a recommendation to run `sudo yum update`. Finally, the prompt `[ec2-user@ip-172-31-3-21 ~]$` is shown three times, indicating the user is logged in and ready to execute commands.

```
← → ↻ 🏠 https://us-east-2.console.aws.amazon.com/ec2/v2/connect/ec2-user/i-0399b7e9da5e35318
Last login: Fri Oct 16 14:38:30 2020 from ec2-3-16-146-2.us-east-2.compute.amazonaws.com

  _ | _ | _ )
  _ | ( _ | /   Amazon Linux 2 AMI
  _ | \ _ | _ |

https://aws.amazon.com/amazon-linux-2/
2 package(s) needed for security, out of 13 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-3-21 ~]$
[ec2-user@ip-172-31-3-21 ~]$
[ec2-user@ip-172-31-3-21 ~]$ █
```

Access of server through public ip of server



Welcome to AWS page!!!

Project 2: Creating an EC2 instance in custom VPC

Task1: Create a VPC

SS1: VPC created

VPC > Your VPCs > Create VPC

Create VPC [Info](#)

A VPC is an isolated portion of the AWS cloud populated by AWS objects, such as Amazon EC2 instances.

VPC settings

Name tag - *optional*

Creates a tag with a key of 'Name' and a value that you specify.

IPv4 CIDR block [Info](#)

IPv6 CIDR block [Info](#)

- ☒ No IPv6 CIDR block
- ☐ Amazon-provided IPv6 CIDR block
- ☐ IPv6 CIDR owned by me

Tenancy [Info](#)

Tags

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key

Value - *optional*

You can add 49 more tags.

aws Services

https://console.aws.amazon.com/vpc/home?region=us-east-1#VpcDetails:VpcId=vpc-07ff52eefddb8c3b2

You successfully created vpc-07ff52eefddb8c3b2 / projectvpc

VPC > Your VPCs > vpc-07ff52eefddb8c3b2

vpc-07ff52eefddb8c3b2 / projectvpc

Actions

Details info

VPC ID vpc-07ff52eefddb8c3b2	State Available	DNS hostnames Disabled	DNS resolution Enabled
Tenancy Default	DHCP options set dopt-03781779	Route table rtb-0d4a6fe73f3eed068	Network ACL acl-02dd4d9660f8572a7
Default VPC No	IPv4 CIDR 172.19.0.0/16	IPv6 pool -	IPv6 CIDR (Network Border Group) -
Owner ID 052604659223			

CIDRs Flow logs Tags

IPv4 CIDRs info

CIDR	Status
172.19.0.0/16	Associated

IPv6 CIDRs info

CIDR	Pool	Status
------	------	--------

You have no IPv6 CIDR blocks associated with your VPC.

Task2: Create a Internet Gateway

aws Services

https://console.aws.amazon.com/vpc/home?region=us-east-1#CreateInternetGateway:

VPC > Internet gateways > Create internet gateway

Create internet gateway

Info

An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.

Internet gateway settings

Name tag
Creates a tag with a key of 'Name' and a value that you specify.

projectIGW

Tags - optional
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key	Value - optional	
Name	projectIGW	Remove

Add new tag

You can add 49 more tags.

Cancel Create internet gateway

← → ↺ 🏠 <https://console.aws.amazon.com/vpc/home?region=us-east-1#InternetGateway:internetGatewayId=igw-0994d2da0534c7d35>

aws Services ▾

🔘 New VPC Experience
Tell us what you think

VPC Dashboard **New**

Filter by VPC:
🔍 Select a VPC

▼ **VIRTUAL PRIVATE CLOUD**

- Your VPCs **New**
- Subnets
- Route Tables
- Internet Gateways **New****
- Egress Only Internet Gateways **New**
- Carrier Gateways **New**
- DHCP Options Sets **New**
- Elastic IPs **New**
- Managed Prefix Lists **New**
- Endpoints
- Endpoint Services

🔘 The following Internet gateway was created: igw-0994d2da0534c7d35 . You can now attach to a VPC to enable the VPC to communicate with the Internet.

VPC > Internet gateways > igw-0994d2da0534c7d35

igw-0994d2da0534c7d35 / projectIGW

Details Info

Internet gateway ID	State	VPC ID
🔑 igw-0994d2da0534c7d35	🛑 Detached	-

Tags

🔍 Search tags

Key	Value
Name	projectIGW

SS2: igw with vpc associated

← → ↺ 🏠 <https://console.aws.amazon.com/vpc/home?region=us-east-1#igws>

aws Services ▾

🔘 New VPC Experience
Tell us what you think

VPC Dashboard **New**

Filter by VPC:
🔍 Select a VPC

▼ **VIRTUAL PRIVATE CLOUD**

- Your VPCs **New**
- Subnets
- Route Tables
- Internet Gateways **New****
- Egress Only Internet Gateways **New**
- Carrier Gateways **New**
- DHCP Options Sets **New**

🔘 Internet gateway igw-0994d2da0534c7d35 successfully attached to vpc-07f52eefddb8c3b2

Internet gateways (2) Info

🔍 Filter Internet gateways

🔄 Actions **Create internet gateway**

	Name	Internet gateway ID	State	VPC ID	Owner
<input type="checkbox"/>	projectIGW	igw-0994d2da0534c7d35	✅ Attached	vpc-07f52eefddb8c3b2 projectvpc	052604659223
<input type="checkbox"/>	-	igw-5a261721	✅ Attached	vpc-b3ff3dce	052604659223

Task3: Create route table

← → ↺ 🏠 <https://console.aws.amazon.com/vpc/home?region=us-east-1#RouteTables:sort=routeTableId>

aws Services ▾

🔘 New VPC Experience
Tell us what you think

VPC Dashboard **New**

Filter by VPC:
🔍 Select a VPC

▼ **VIRTUAL PRIVATE CLOUD**

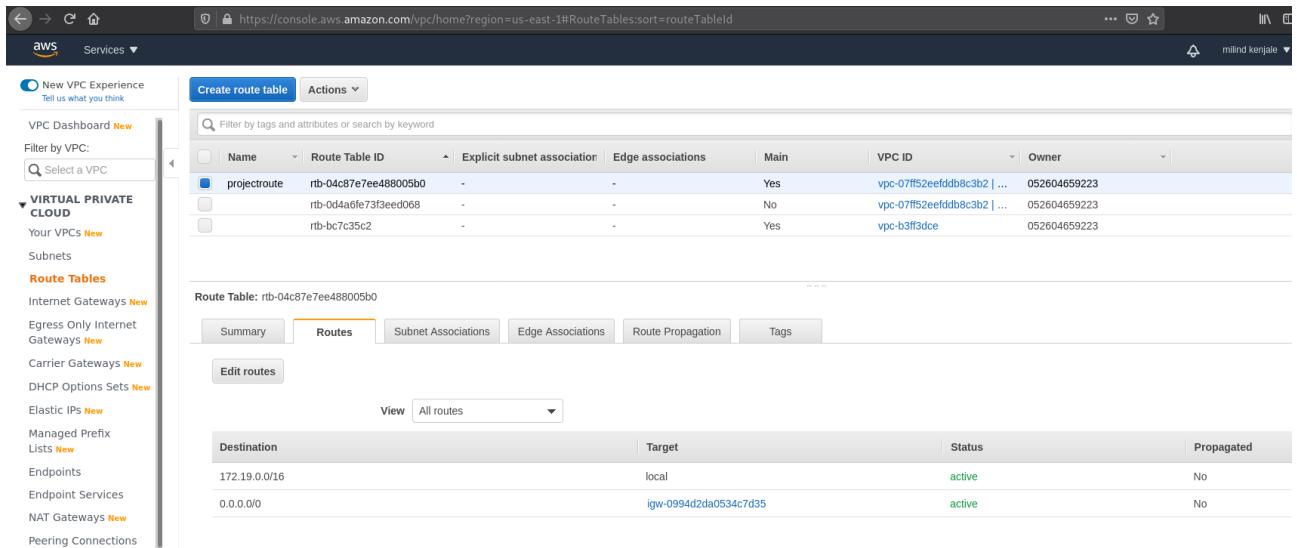
- Your VPCs **New**
- Subnets
- Route Tables**
- Internet Gateways **New**

Create route table Actions ▾

🔍 Filter by tags and attributes or search by keyword

	Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
<input type="checkbox"/>	projectroute	rtb-04c87e7ee488005b0	-	-	No	vpc-07f52eefddb8c3b2 ...	052604659223
<input type="checkbox"/>		rtb-0d4a6fe73f3eed068	-	-	Yes	vpc-07f52eefddb8c3b2 ...	052604659223
<input type="checkbox"/>		rtb-bc7c35c2	-	-	Yes	vpc-b3ff3dce	052604659223

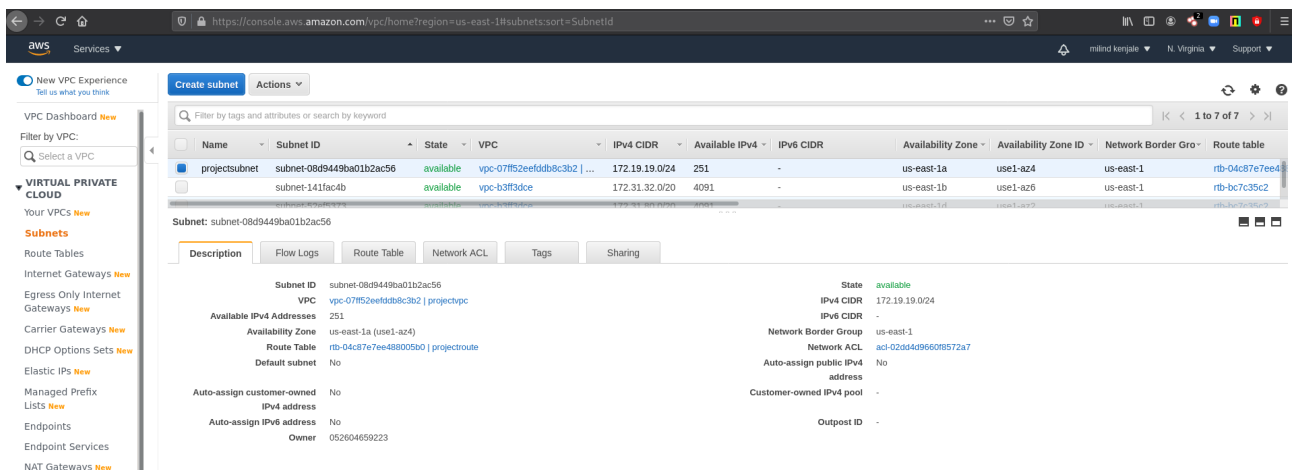
SS3: Route table with routes



The screenshot shows the AWS Management Console for the VPC service. The left sidebar contains navigation links for VPC Dashboard, Subnets, Route Tables, Internet Gateways, Egress Only Internet Gateways, Carrier Gateways, DHCP Options Sets, Elastic IPs, Managed Prefix Lists, Endpoints, Endpoint Services, NAT Gateways, and Peering Connections. The main content area displays a list of Route Tables. The 'projectroute' table is selected, and its details are shown below. The 'Routes' tab is active, displaying a table of routes.

Destination	Target	Status	Propagated
172.19.0.0/16	local	active	No
0.0.0.0/0	igw-0994d2da0534c7d35	active	No

Task4: Create a subnet SS4: Subnet screen



The screenshot shows the AWS Management Console for the VPC service. The left sidebar contains navigation links for VPC Dashboard, Subnets, Route Tables, Internet Gateways, Egress Only Internet Gateways, Carrier Gateways, DHCP Options Sets, Elastic IPs, Managed Prefix Lists, Endpoints, Endpoint Services, NAT Gateways, and Peering Connections. The main content area displays a list of Subnets. The 'projectsubnet' is selected, and its details are shown below. The 'Description' tab is active, displaying a table of subnet details.

Subnet ID	State	Subnet Name
subnet-08d9449ba01b2ac56	available	projectsubnet

Subnet ID	State	Subnet Name
subnet-08d9449ba01b2ac56	available	projectsubnet

Task5: Create a EC2 in custom vpc

SS5: EC@ dashboard

The screenshot displays the AWS Management Console for the 'Instances' page. A sidebar on the left contains navigation links for EC2 Dashboard, Events, Tags, Limits, and various instance types. The main content area shows a list of instances with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm Status, Availability zone, Public IPv4 DNS, Public IPv4 address, and Elastic IP. The instance 'projectwinvpc' (ID: i-0164c03dc6ecff5b) is highlighted as 'Running'. Below the list, the 'Instance: i-0164c03dc6ecff5b (projectwinvpc)' details are shown under the 'Details' tab. The 'Instance summary' section includes Instance ID, state (Running), type (t2.micro), IAM Role, and Platform (windows). The 'Networking' section shows Public IPv4 address (34.228.254.153), Private IPv4 addresses (172.19.19.15), and VPC ID (vpc-07f52eefddb8c3b2).

Name	Instance ID	Instance state	Instance type	Status check	Alarm Status	Availability zone	Public IPv4 DNS	Public IPv4 ...	Elastic ip
projectwinvpc	i-0164c03dc6ecff5b	Running	t2.micro	2/2 checks ...	No alarms	us-east-1a	-	34.228.254.153	-

Instance: i-0164c03dc6ecff5b (projectwinvpc)

Instance summary

- Instance ID: i-0164c03dc6ecff5b (projectwinvpc)
- Instance state: Running
- Instance type: t2.micro
- IAM Role: -
- Platform: windows

Networking

- Public IPv4 address: 34.228.254.153 | open address
- Private IPv4 addresses: 172.19.19.15
- Private IPv4 DNS: ip-172-19-19-15.ec2.internal
- VPC ID: vpc-07f52eefddb8c3b2 (projectvpc)
- Subnet ID: subnet-08d9449ba01b2ac56 (projectsubnet)

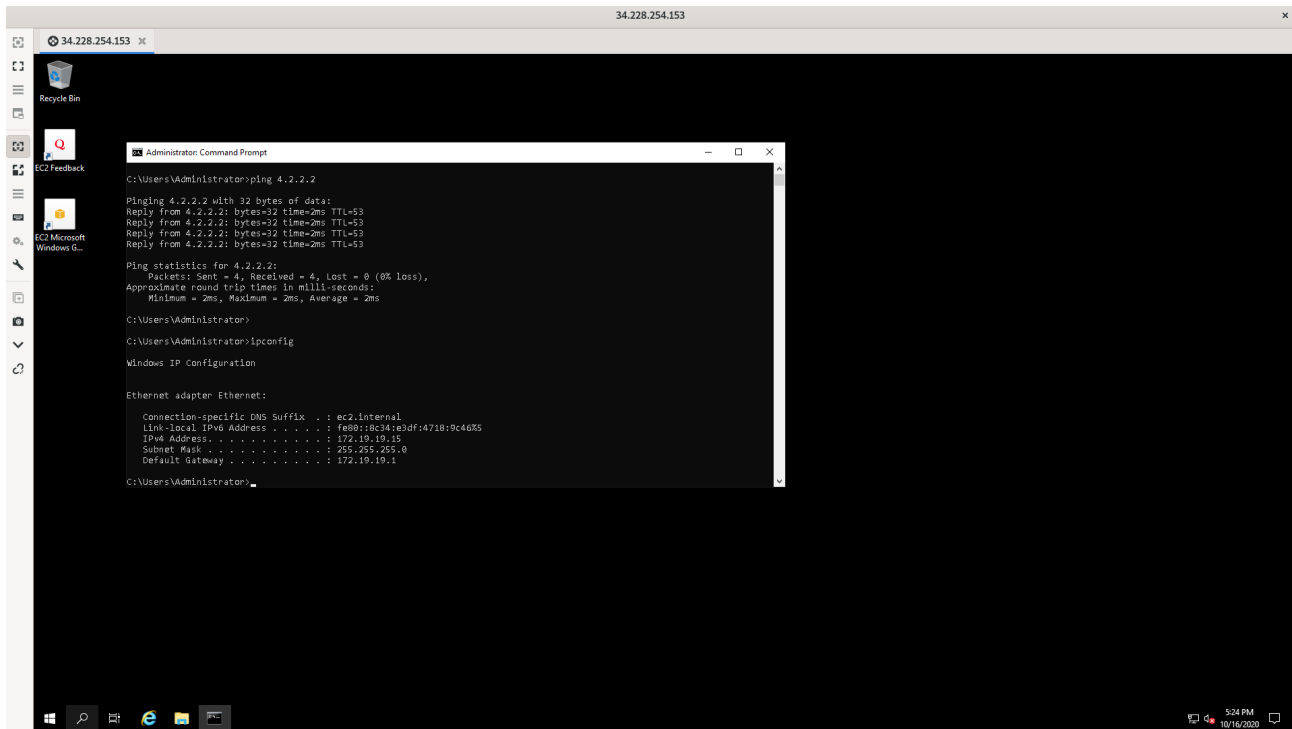
This screenshot shows the same AWS Management Console instance, but with the 'Networking' tab selected for the instance 'projectwinvpc'. The 'Networking details' section provides more information about the instance's network configuration, including Public IPv4 address, Private IPv4 addresses, Private IPv4 DNS, and VPC ID. The 'Availability zone' is also listed as 'us-east-1a'.

Instance: i-0164c03dc6ecff5b (projectwinvpc)

Networking details

- Public IPv4 address: 34.228.254.153 | open address
- Private IPv4 addresses: 172.19.19.15
- Private IPv4 DNS: ip-172-19-19-15.ec2.internal
- VPC ID: vpc-07f52eefddb8c3b2 (projectvpc)
- Subnet ID: subnet-08d9449ba01b2ac56 (projectsubnet)
- Availability zone: us-east-1a

Task 6: check ipconfig in VM command prompt
SS6: cmd prompt:ipconfig



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