

Module 4 :

Case Study : VPC

In Production network :

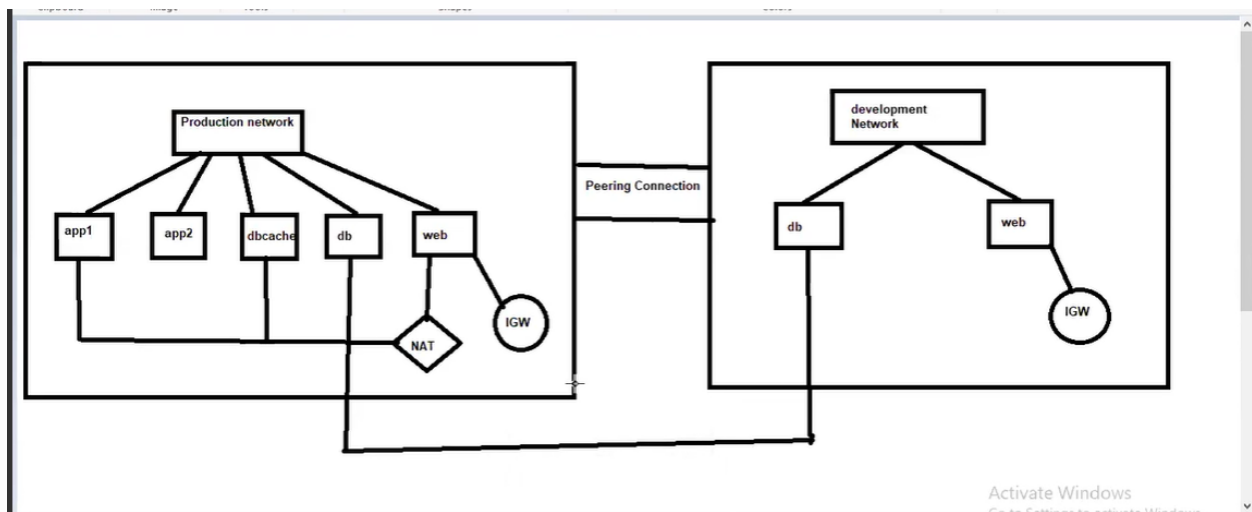
App1 ,app2 ,dbcache ,db ,web(public)

So web can be attached to Internet Gateway

If private subnet wants to send the internet requests,they require NAT (dbcache and NAT)

In development network : 2 subnets : Web and db

(public)so IGW



1. Create prod-vpc

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

Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.

☒ VPC only
 ☐ VPC and more

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

prod-vpc

IPv4 CIDR block [Info](#)

☒ IPv4 CIDR manual input
 ☐ IPAM-allocated IPv4 CIDR block

IPv4 CIDR

10.10.0.0/16

IPv6 CIDR block [Info](#)

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

Tenancy [Info](#)

Default

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.

Now create subnets:

Subnets (6) [Info](#)

Filter subnets

	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 addresses	Availability Zone
<input type="checkbox"/>	-	subnet-0ca976a93f8413d3c	Available	vpc-084a9157925cb8948	172.31.80.0/20	-	4091	us-east-1
<input type="checkbox"/>	-	subnet-0df18c6100299eeb5	Available	vpc-084a9157925cb8948	172.31.32.0/20	-	4091	us-east-1
<input type="checkbox"/>	-	subnet-075837b649607ac20	Available	vpc-084a9157925cb8948	172.31.48.0/20	-	4091	us-east-1
<input type="checkbox"/>	-	subnet-0d1dff3f2834bbe7	Available	vpc-084a9157925cb8948	172.31.16.0/20	-	4091	us-east-1
<input type="checkbox"/>	-	subnet-072324dc2847fa28c	Available	vpc-084a9157925cb8948	172.31.0.0/20	-	4091	us-east-1
<input type="checkbox"/>	-	subnet-0e2f52920e8d0fc80	Available	vpc-084a9157925cb8948	172.31.64.0/20	-	4091	us-east-1

Select a subnet

Create 5 subnets :

EC2

Services

Search

[Alt+S]

Icons

Alert

Help

N. Virginia

Tejasvi Soni

VPC

Subnets

Create subnet

Create subnet

info

VPC

VPC ID

Create subnets in this VPC.

vpc-0de6cf72114ab01fb (prod-vpc)

Associated VPC CIDRs

IPv4 CIDRs

10.10.0.0/16

Subnet settings

Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 5

Subnet name

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

web

The name can be up to 256 characters long.

Availability Zone

info

Choose the zone in which your subnet will reside, or let Amazon choose one for you.

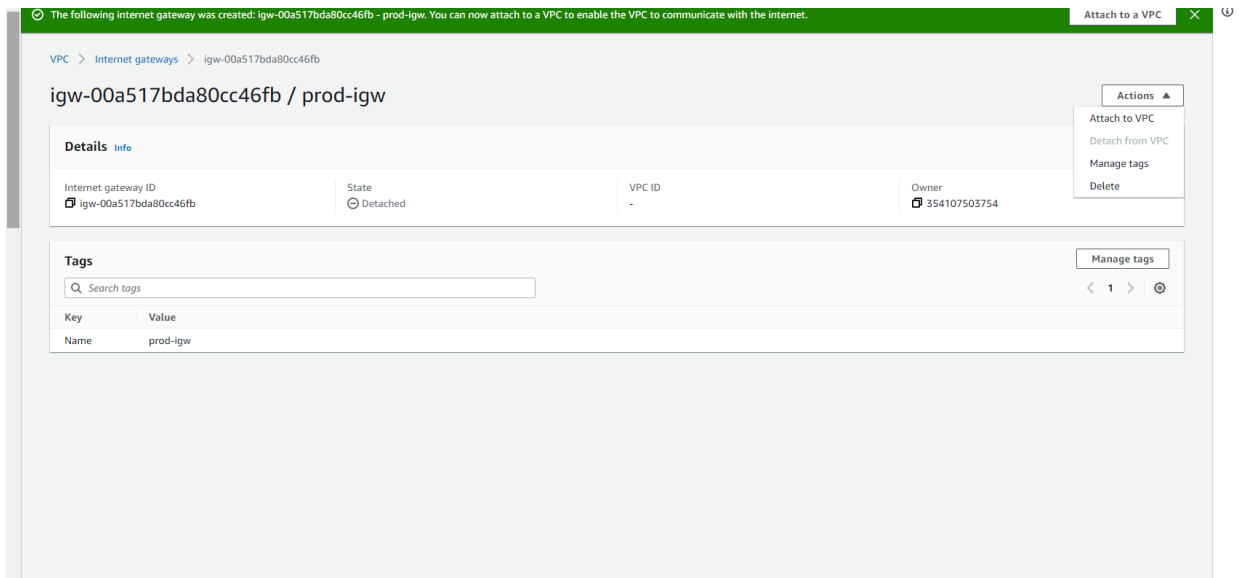
US East (N. Virginia) / us-east-1a

IPv4 CIDR block

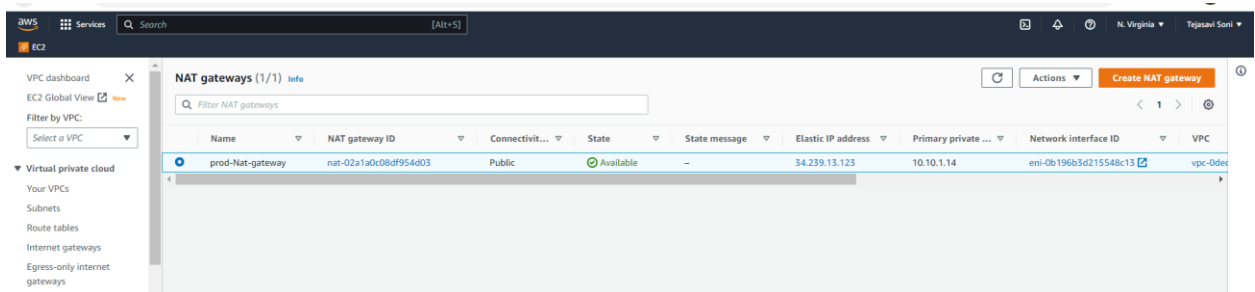
info

10.10.1.0/24

Tags - optional



Create Nat gateway :



Create route table:

aws

Services

Search

[Alt+S]

EC2

VPC > Route tables > Create route table

Create route table [Info](#)

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

Name - optional
Create a tag with a key of 'Name' and a value that you specify.

VPC
The VPC to use for this route table.

vpc-0decfc72114ab01fb (prod-vpc) ▼

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

Q Name X

Q public-route X

Remove

Add new tag

You can add 49 more tags.

Cancel Create route table

Click on edit routes:

dashboard

Global View

Filter by VPC:

select a VPC

Route tables

Internet gateways

Session-only internet gateways

Private gateways

CloudFront option sets

Static IPs

Nagios prefix lists

IP addresses

IP point services

IP gateways

Routing connections

Security

Workload ACLs

Security groups

Workload Analysis

Reachability Analyzer

Workload Access

Analyzer

Route table rtb-031d9b6c4dbd9462d | public-route was created successfully.

VPC > Route tables > rtb-031d9b6c4dbd9462d

rtb-031d9b6c4dbd9462d / public-route

Actions

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Details

Route table ID
rtb-031d9b6c4dbd9462d

Main
No

Explicit subnet associations
-

Edge associations
-

VPC
vpc-0decfc72114ab01fb | prod-vpc

Owner ID
354107503754

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (1)

Filter routes

Both

Edit routes

< 1 > ⚙

Destination	Target	Status	Propagated
10.10.0.0/16	local	Active	No

VPC > Route tables > rtb-031d9b6c4dbd9462d > Edit routes

Edit routes

Destination	Target	Status	Propagated
10.10.0.0/16	<input type="text" value="local"/>	Active	No
<input type="text" value="0.0.0.0/0"/>	<input type="text" value="igw-00a517bda80cc46fb"/>	-	No

Now go to subnet associations and attach public server that is web.

EC2

VPC > Route tables > rtb-031d9b6c4dbd9462d > Edit subnet associations

Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (1/5)

	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input type="checkbox"/>	db	subnet-025e4db36abd4ba02	10.10.5.0/24	-	Main (rtb-004e88a851e24dd54)
<input checked="" type="checkbox"/>	web	subnet-0d4aed54290863bd5	10.10.1.0/24	-	Main (rtb-004e88a851e24dd54)
<input type="checkbox"/>	dbcache	subnet-01784b3e2a60e36a	10.10.4.0/24	-	Main (rtb-004e88a851e24dd54)
<input type="checkbox"/>	app1	subnet-0041255345a2876f3	10.10.2.0/24	-	Main (rtb-004e88a851e24dd54)
<input type="checkbox"/>	app2	subnet-013d7c683052cd809	10.10.3.0/24	-	Main (rtb-004e88a851e24dd54)

Selected subnets

Now create private route table :

aws

Services

Search

[Alt+S]

EC2

VPC

Route tables

Create route table

Create route table [Info](#)

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

Name - optional
Create a tag with a key of 'Name' and a value that you specify.

VPC
The VPC to use for this route table.

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.

Click on edit route :

← → ↺

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

Search

[Alt+S]

EC2

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

Carrier gateways

DHCP option sets

Elastic IPs

Managed prefix lists

Endpoints

Endpoint services

Route tables (1/4) [Info](#)

	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC	Owner ID
<input checked="" type="checkbox"/>	private-prod	rtb-05551e46ac0e8eed4	-	-	No	vpc-0decfc72114ab01fb pro...	354107503754
<input type="checkbox"/>	-	rtb-004e88a851e24dd54	-	-	Yes	vpc-0decfc72114ab01fb pro...	354107503754
<input type="checkbox"/>	-	rtb-0b05b7e3cc3717655	-	-	Yes	vpc-084a9157925cb8948	354107503754
<input type="checkbox"/>	public-route	rtb-031d9b6c4dbd9462d	subnet-064aed5429086...	-	No	vpc-0decfc72114ab01fb pro...	354107503754

Actions

Create route table

View details

Set main route table

Edit subnet associations

Edit edge associations

Edit route propagation

Edit routes

Manage tags

Delete route table

Troubleshoot

Trace network reachability

rtb-05551e46ac0e8eed4 / private-prod

As it is private subnet so it must have NAT gateway .

VPC > Route tables > rtb-05551e46ac0e8eed4 > Edit routes

Edit routes

Destination	Target	Status	Propagated
10.10.0.0/16	<input type="text" value="local"/>	Active	No
<input type="text" value="0.0.0.0/0"/>	<input type="text" value="nat-02a1a0c08df954003"/>	-	No

Now go to subnet associations :

Click on edit subnet associations:

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#EditRouteTableSubnetAssociations?routeTableId=rtb-05551e46ac0e8eed4

VPC > Route tables > rtb-05551e46ac0e8eed4 > Edit subnet associations

Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (2/5)

	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input type="checkbox"/>	db	subnet-025e4db35abd4ba02	10.10.5.0/24	-	Main (rtb-004e88a851e24dd54)
<input type="checkbox"/>	web	subnet-0d4aed54290863bd5	10.10.1.0/24	-	rtb-031d9b6c4dbd9462d / public-route
<input checked="" type="checkbox"/>	dbcache	subnet-01784b3e2a6f0e36a	10.10.4.0/24	-	Main (rtb-004e88a851e24dd54)
<input checked="" type="checkbox"/>	app1	subnet-0041255345a2876f3	10.10.2.0/24	-	Main (rtb-004e88a851e24dd54)
<input type="checkbox"/>	app2	subnet-013d7c683052cd809	10.10.3.0/24	-	Main (rtb-004e88a851e24dd54)

Selected subnets

Create Route Table with No internet :

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

VPC > Route tables > Create route table

Create route table [Info](#)

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

Name - optional
Create a tag with a key of 'Name' and a value that you specify.
private-nointernet-route

VPC
The VPC to use for this route table.
vpc-0de6cf72114ab01fb (prod-vpc)

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
Name

Value - optional
private-nointernet-route

[Add new tag](#)

You can add 49 more tags.

[Cancel](#) [Create route table](#)

This is without internet ,so we do not require nat here

Edit subnet associations.

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#RouteTable:rtb-00ddb0fe03b1dde4>Edit subnet associations

VPC > Route tables > rtb-00ddb0fe03b1dde4 > Edit subnet associations

Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (2/5)

Filter subnet associations

	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input checked="" type="checkbox"/>	db	subnet-025e4db36abd4ba02	10.10.5.0/24	-	Main (rtb-004e88a851e24dd54)
<input type="checkbox"/>	web	subnet-0d4aed54290863bd5	10.10.1.0/24	-	rtb-031d9b6c4dbd9462d / public-route
<input type="checkbox"/>	dbcache	subnet-01784b3e2a6f0e36a	10.10.4.0/24	-	rtb-05551e46ac0e8eed4 / private-prod
<input type="checkbox"/>	app1	subnet-0041255345a2876f3	10.10.2.0/24	-	rtb-05551e46ac0e8eed4 / private-prod
<input checked="" type="checkbox"/>	app2	subnet-013d7c683052cd809	10.10.3.0/24	-	Main (rtb-004e88a851e24dd54)

Selected subnets

subnet-025e4db36abd4ba02 / db subnet-013d7c683052cd809 / app2

[Cancel](#) [Save associations](#)

Create Security Groups :

Security groups act as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the steps below.

Basic details

Security group name [Info](#)

Name cannot be edited after creation.

Description [Info](#)

VPC [Info](#)

Inbound rules

This security group has no inbound rules.

[Add rule](#)

Outbound rules

Type	Protocol	Port range	Destination	Description - optional	
All traffic	All	All	Anywhere-I...		Delete
			0.0.0.0/0		Delete

[Add rule](#)

Now Create instance:

Make for app1,app2 and dbcache.

App1:

Network settings

VPC - required

vpc-0defc72114ab01fb (prod-vpc)

Subnet

subnet-0041255345a2876f3 app1

Auto-assign public IP

Disable

Firewall (security groups)

☐ Create security group ☒ Select existing security group

Common security groups

prod-sg sg-03ab1f179dec96db7

[Advanced network configuration](#)

Summary

Number of instances

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...[read more](#)

ami-05746a719dc651548

Virtual server type (instance type)

t2.micro

Firewall (security group)

prod-sg

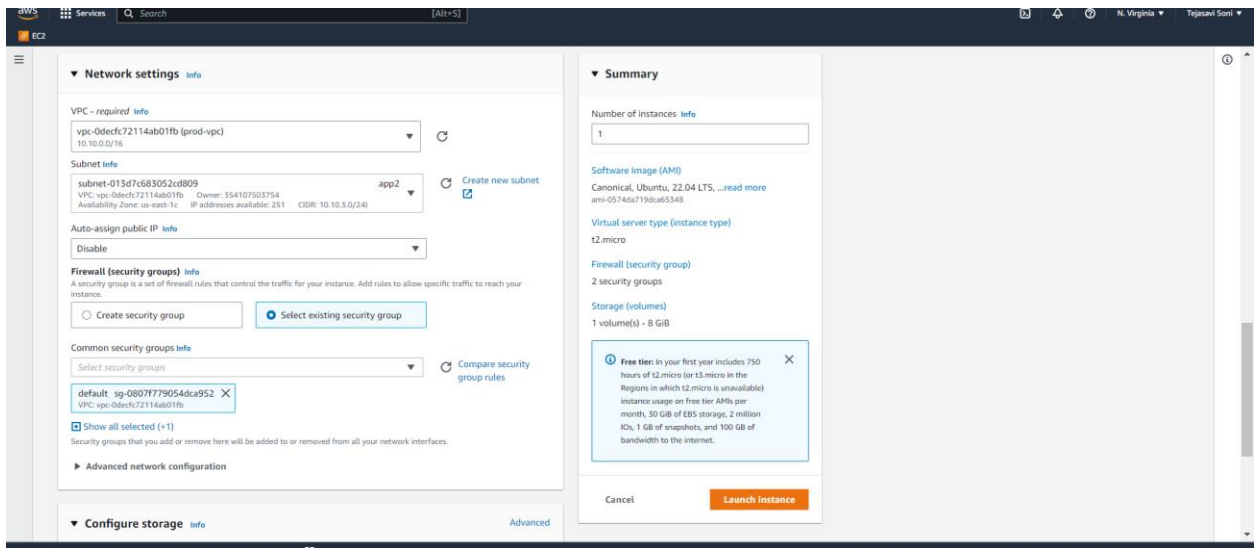
Storage (volumes)

1 volume(s) - 8 GiB

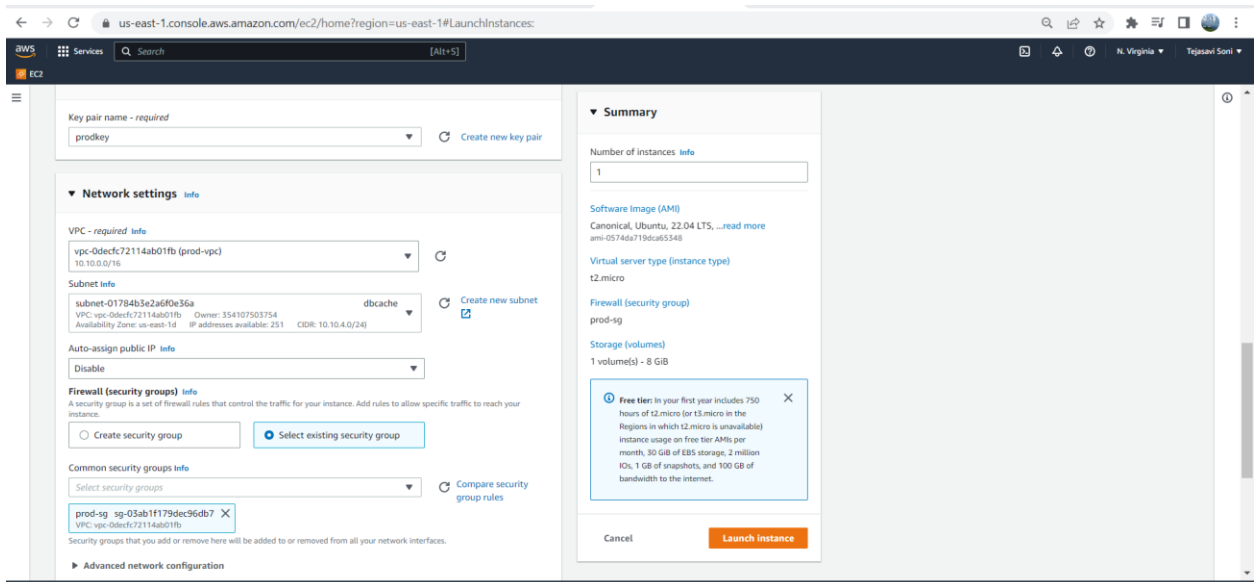
[Free tier](#) In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

[Launch Instance](#)

App2 :



Create dbcache instance.



Created 3 instances app1,app2,dbcache.

Now create 2 instances : web and db :

EC2

Amazon EC2 lets you to create, launch, manage, and run the virtual cloud servers by following the simple steps below.

Name and tags

info

Name

web

Add additional tags

Application and OS Images (Amazon Machine Image)

info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux

macOS

Ubuntu

Windows

Red Hat

5

aws

Mac

ubuntu

Microsoft

Red Hat

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Ubuntu Server 22.04 LTS (HVM), SSD Volume Type

Free tier eligible

ami-0574da719dca65348 (64-bit x86) / ami-0e2b332e63c56bcb5 (64-bit Arm)

Virtualization: hvm ENA enabled: true Root device type: ebs

Summary

Number of instances

info

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...read more

ami-0574da719dca65348

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Free tier:

In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

Launch instance

Key pair (login)

info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required

prodkey

Create new key pair

Network settings

info

VPC - required

info

vpc-0decfc72114ab01fb (prod-vpc)

10.10.0.0/16

Subnet

info

subnet-0d4aed54290863bd5

web

Create new subnet

Auto-assign public IP

info

Disable

Firewall (security groups)

info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group

Select existing security group

Security group name - required

launch-wizard-2

Summary

Number of instances

info

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...read more

ami-0574da719dca65348

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Free tier:

In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

Launch instance

Create one more instance that is db:

Not public so ip address disable:

▼ Network settings Info

VPC - required Info

vpc-0decfc72114ab01fb (prod-vpc) 10.10.0.0/16

Subnet Info

subnet-025e4db36abd4ba02 db

VPC: vpc-0decfc72114ab01fb Owner: 354107503754 Availability Zone: us-east-1e IP addresses available: 251 CIDR: 10.10.5.0/24

Auto-assign public IP Info

Disable

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☐ Create security group
☒ Select existing security group

Common security groups Info

Select security groups

prod-sg sg-03ab1f179dec96db7 X

Compare security group rules

Security groups that you add or remove here will be added to or removed from all your network interfaces.

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...read more

ami-0574da719dca65348

Virtual server type (instance type)

t2.micro

Firewall (security group)

prod-sg

Storage (volumes)

1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

Launch instance

For Development network :

Create VPC:

Create dev-vpc:

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

dev-vpc

IPv4 CIDR block Info

☒ IPv4 CIDR manual input
☐ IPAM-allocated IPv4 CIDR block

IPv4 CIDR

20.20.0.0/16

IPv6 CIDR block Info

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

Tenancy Info

Default

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.

Now create 2 subnets:

US West (Oregon) / us-west-2a

IPv4 CIDR block [Info](#)

Q 20.20.1.0/24

▼ Tags - optional

Key

Q Name

Value - optional

Q dev-web

Remove

Add new tag

You can add 49 more tags.

Remove

Subnet 2 of 2

Subnet name

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

dev-db

The name can be up to 256 characters long.

Availability Zone [Info](#)

Choose the zone in which your subnet will reside, or let Amazon choose one for you.

US West (Oregon) / us-west-2b

Create IG and attach to your vpc.

for the gateway below.

Internet gateway settings

Name tag

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

dev-igw

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

Q Name

Value - optional

Q dev-igw

Remove

Add new tag

You can add 49 more tags.

Cancel

Create internet gateway

Feedback

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Create route tables:

Public route :

Create route table Info

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

Name - optional
Create a tag with a key of 'Name' and a value that you specify.

VPC
The VPC to use for this route table.

vpc-0b953f835181ca5bc (dev-vpc) ▼

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

VPC > Route tables > rtb-0900edc91e4c9df69 > Edit routes

Edit routes

Destination	Target	Status	Propagated
20.20.0.0/16	<input type="text" value="local"/> X	Active	No
<input type="text" value="0.0.0.0/0"/> X	<input type="text" value="igw-0b01767cbf7b04b33"/> X	-	No

Change which subnets are associated with this route table.

Available subnets (1/2)


	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input checked="" type="checkbox"/>	dev-web	subnet-01e834ad55fd8a17b	20.20.1.0/24	-	Main (rtb-05c7ee4b550f1f424)
<input type="checkbox"/>	dev-db	subnet-0ecfaca89ba945e94	20.20.2.0/24	-	Main (rtb-05c7ee4b550f1f424)

Selected subnets

X

Create private-dev route table:

Edit subnet associations




[VPC](#) > [Route tables](#) > [rtb-09610ae544339898c](#) > Edit subnet associations


Edit subnet associations

Change which subnets are associated with this route table.


Available subnets (1/2)

< 1 >




	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input type="checkbox"/>	dev-web	subnet-01e834ad55fd8a17b	20.20.1.0/24	–	rtb-0900edc91e4c9df69 / dev-route-public
<input checked="" type="checkbox"/>	dev-db	subnet-0ecfaca89ba945e94	20.20.2.0/24	–	Main (rtb-05c7ee4b550f1f424)

Selected subnets

subnet-0ecfaca89ba945e94 / dev-db 

Cancel

Save associations

[Feedback](#) Looking for language selection? Find it in the new Unified Settings  © 2022, Amazon Internet Services Private Ltd. or its affiliates. [Privacy](#) [Terms](#) [Cookie preferences](#)

Now create SG:

Security group name [Info](#)

dev-sg

Name cannot be edited after creation.

Description [Info](#)

allow protocol

VPC [Info](#)

Inbound rules [Info](#)

Type [Info](#)

Protocol [Info](#)

Port range [Info](#)


Source [Info](#)


Description - optional [Info](#)

All traffic

All

All


Anywh... 

0.0.0.0/0 

Delete

Add rule

Outbound rules [Info](#)

[Feedback](#) Looking for language selection? Find it in the new Unified Settings  © 2022, Amazon Internet Services Private Ltd. or its affiliates. [Privacy](#) [Terms](#) [Cookie preferences](#)

Create instance:

EC2

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

devkey [Create new key pair](#)

▼ **Network settings** [Info](#)

VPC - *required* [Info](#)

vpc-0b953f835181ca5bc (dev-vpc)
20.20.0.0/16

Subnet [Info](#)

subnet-01e834ad55fd8a17b dev-web [Create new subnet](#)

VPC: vpc-0b953f835181ca5bc Owner: 354107503754
Availability Zone: us-west-2a IP addresses available: 251 CIDR: 20.20.1.0/24

Auto-assign public IP [Info](#)

Enable

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☐ Create security group ☒ Select existing security group

▼ **Summary**

Number of instances [Info](#)

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...[read more](#)
ami-0ecc74eca1d66d8a6

Virtual server type (instance type)

t2.micro

Firewall (security group)

dev-sg

Storage (volumes)

1 volume(s) - 8 GiB

[Free tier: In your first year includes 750](#) [X](#)

Cancel [Launch instance](#)

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EC2

▼ **Network settings** [Info](#)

VPC - *required* [Info](#)

vpc-0b953f835181ca5bc (dev-vpc)
20.20.0.0/16

Subnet [Info](#)

subnet-0ecfaca89ba945e94 dev-db [Create new subnet](#)

VPC: vpc-0b953f835181ca5bc Owner: 354107503754
Availability Zone: us-west-2b IP addresses available: 251 CIDR: 20.20.2.0/24

Auto-assign public IP [Info](#)

Disable

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☐ Create security group ☒ Select existing security group

Common security groups [Info](#)

Select security groups

dev-sg sg-0ab7cd126e333d8a6 [X](#)
VPC: vpc-0b953f835181ca5bc

[Compare security group rules](#)

Security groups that you add or remove here will be added to or removed from all your network interfaces.

▼ **Summary**

Number of instances [Info](#)

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...[read more](#)
ami-0ecc74eca1d66d8a6

Virtual server type (instance type)

t2.micro

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dev-sg

Storage (volumes)

1 volume(s) - 8 GiB

[Free tier: In your first year includes 750](#) [X](#)

Cancel [Launch instance](#)

Feedback Looking for language selection? Find it in the new Unified Settings [↗](#)

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Now set up Peering connection:

Name - optional
Create a tag with a key of 'Name' and a value that you specify.
peering-case

Select a local VPC to peer with
VPC ID (Requester)
vpc-0decfc72114ab01fb (prod-vpc)

VPC CIDRs for vpc-0decfc72114ab01fb (prod-vpc)

CIDR	Status	Status reason
10.10.0.0/16	Associated	-

Select another VPC to peer with
Account
☒ My account
☐ Another account

Region
☐ This Region (us-east-1)
☒ Another Region

US West (Oregon) (us-west-2)

VPC ID (Acceptor)
vpc-0b953f835181ca5bc

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.

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#PeeringConnectionDetailsvpcPeeringConnectionId=pcx-03995008784609fc2

A VPC peering connection pcx-03995008784609fc2 / peering-case has been requested. Remember to change your region to us-west-2 to accept the peering connection.

pcx-03995008784609fc2 / peering-case

Details info

Requester owner ID 354107503754	Acceptor owner ID 354107503754	VPC Peering connection ARN arn:aws:ec2:us-east-1:354107503754:vpc-peering-connection/pcx-03995008784609fc2
Peering connection ID pcx-03995008784609fc2	Requester VPC vpc-0decfc72114ab01fb / prod-vpc	Acceptor VPC vpc-0b953f835181ca5bc
Status Initiating Request to 354107503754	Requester CIDRs 10.10.0.0/16	Acceptor CIDRs -
Expiration time Thursday, December 15, 2022 at 24:27:03 GMT+5:30	Requester Region N. Virginia (us-east-1)	Acceptor Region Oregon (us-west-2)

Now go to other region and accept the peering request

us-west-2.console.aws.amazon.com/vpc/home?region=us-west-2#PeeringConnections

Peering connections (1/1) info

Filter peering connections

Name	Peering connection ID	Status	Requester VPC
-	pcx-03995008784609fc2	Pending acceptance	vpc-0decfc72114ab01fb

Actions

- View details
- Accept request
- Reject request
- Edit DNS settings
- Edit ClassicLink settings
- Manage tags
- Delete peering connection

pcx-03995008784609fc2

Pending acceptance
You can accept or reject this peering connection request using the 'Actions' menu. You have until Thursday, December 15, 2022 at 24:27:03 GMT+5:30 to accept or reject the request, otherwise it expires.

Details DNS Route tables Tags

Modify route tables.

us-west-2.console.aws.amazon.com/vpc/home?region=us-west-2#route-tables:

Services Search [Alt+S]

EC2

Endpoint services
NAT gateways
Peering connections

▼ Security
Network ACLs
Security groups

▼ Network Analysis
Reachability Analyzer
Network Access Analyzer

▼ DNS firewall
Rule groups
Domain lists

▼ Network Firewall
Firewalls
Firewall policies
Network Firewall rule groups

Route tables (1/4) info

Filter route tables

	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC	Ow...
<input type="checkbox"/>	-	rtb-088d7e4c0dce58102	-	-	Yes	vpc-00d04f5d1fe92e11e	35410...
<input type="checkbox"/>	dev-route-public	rtb-0900edc91e4c9df69	subnet-01e834ad55fd8...	-	No	vpc-0b953f835181ca5bc dev...	35410...
<input checked="" type="checkbox"/>	private-dev-route	rtb-09610ae544339898c	subnet-0ecfaca89ba945...	-	No	vpc-0b953f835181ca5bc dev...	35410...
<input type="checkbox"/>	-	rtb-05c7ee4b550f1f424	-	-	Yes	vpc-0b953f835181ca5bc dev...	35410...

rtb-09610ae544339898c / private-dev-route

Details Routes Subnet associations Edge associations Route propagation Tags

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Details

Edit route :

VPC > Route tables > rtb-09610ae544339898c > Edit routes

Edit routes

Destination	Target	Status	Propagated
20.20.0.0/16	local	Active	No
10.10.5.0/24	pcx-03995008784609fc2	-	No

Add route

Cancel Preview Save changes

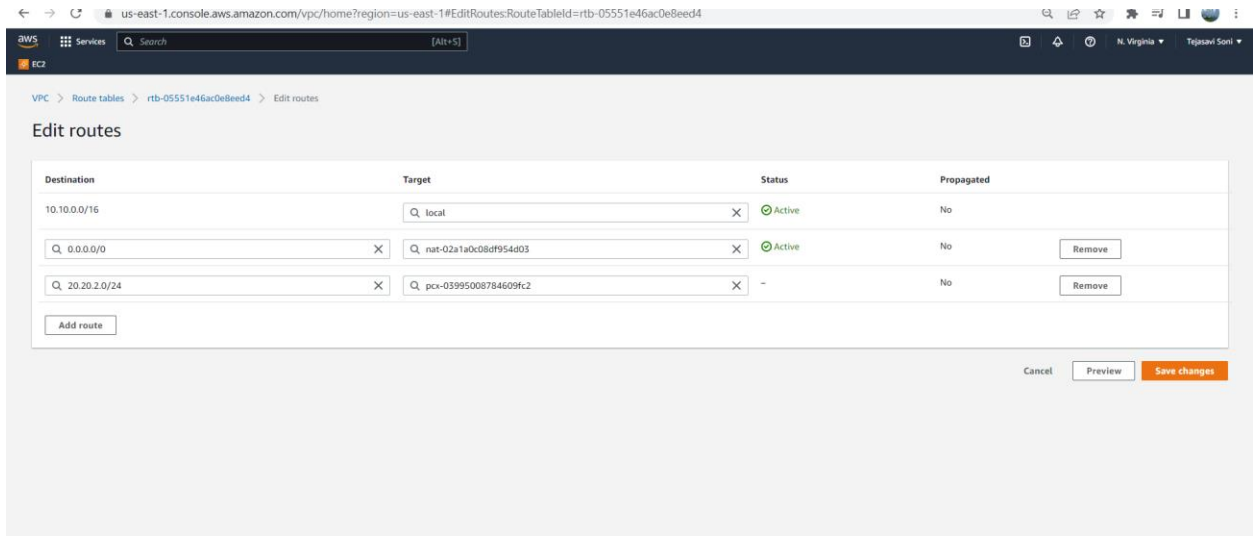
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devkey.pem prodkey.pem Show all

60°F Partly cloudy Search 12:39 AM 12/8/2022

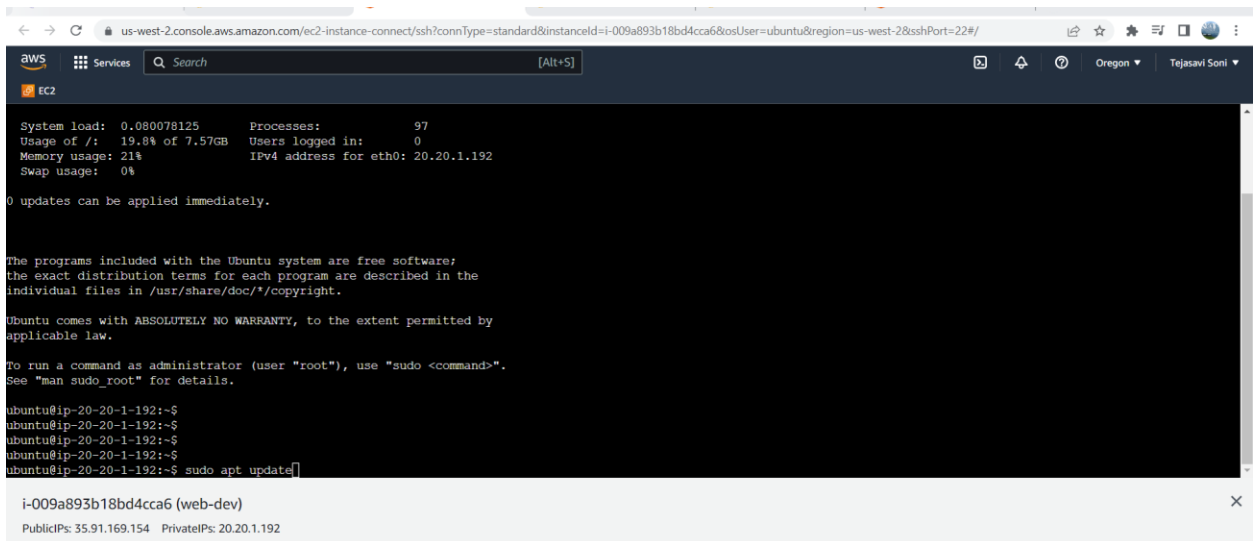
In N vergenia region :



Now connect to the instances:

Convert key pair to ppk format first using puttygen

Connect to dev instance :web :



Create a file.

Save the pem file in it

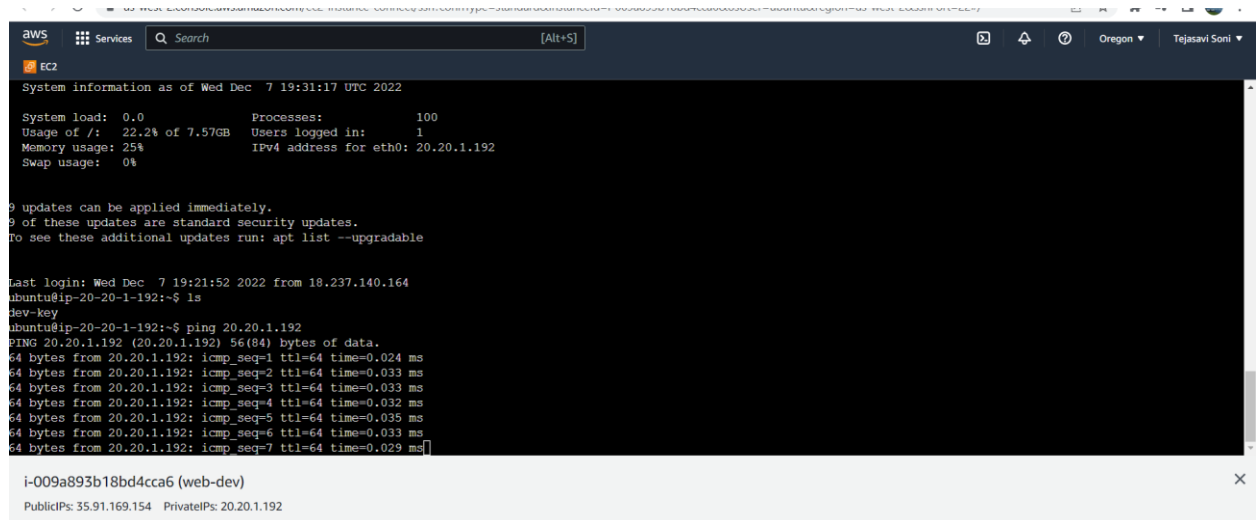
Now ls

Now chmod 400 dev-key

Ssh -I dev-key ubuntu@privateip

After all this :

Give ping command : ping private address



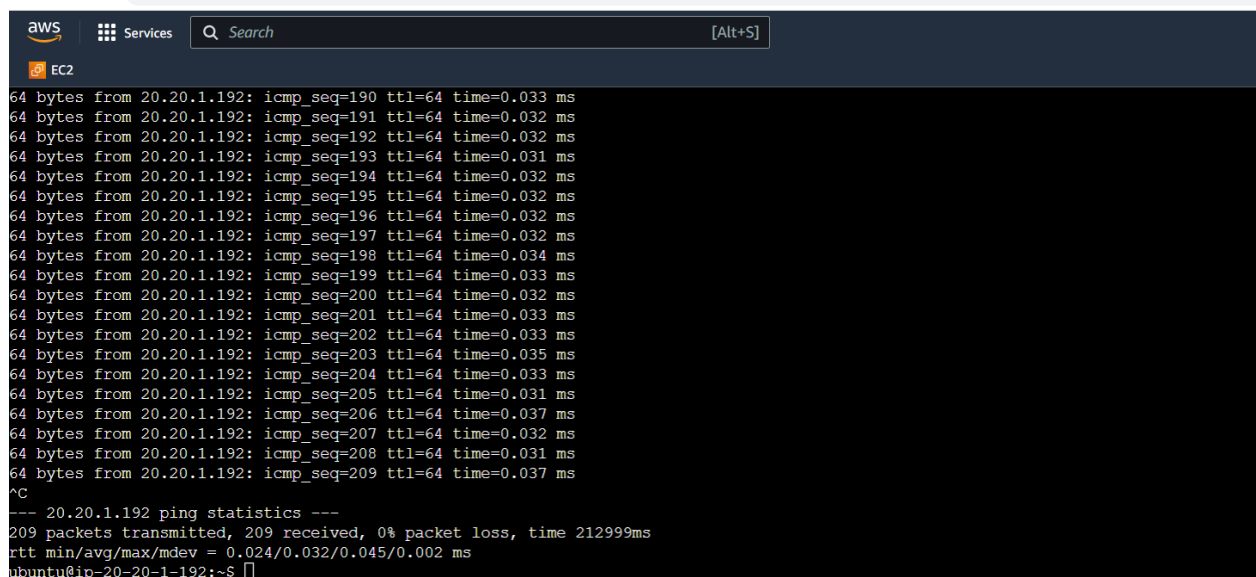
The screenshot shows the AWS Management Console for an EC2 instance named 'i-009a893b18bd4cca6 (web-dev)'. The terminal output displays system information as of Wednesday, December 7, 19:31:17 UTC 2022. It shows system load, memory usage, and processes. A message indicates that 9 updates can be applied immediately. The user 'ubuntu@ip-20-20-1-192' runs the command 'ping 20.20.1.192', which shows successful ping results with 64 bytes of data and a time of 0.024 ms. The instance details at the bottom show Public IPs as 35.91.169.154 and Private IPs as 20.20.1.192.

```
System information as of Wed Dec 7 19:31:17 UTC 2022
System load: 0.0          Processes: 100
Usage of /: 22.2% of 7.57GB Users logged in: 1
Memory usage: 25%        IPv4 address for eth0: 20.20.1.192
Swap usage: 0%

9 updates can be applied immediately.
9 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Last login: Wed Dec 7 19:21:52 2022 from 18.237.140.164
ubuntu@ip-20-20-1-192:~$ ls
dev-key
ubuntu@ip-20-20-1-192:~$ ping 20.20.1.192
PING 20.20.1.192 (20.20.1.192) 56(84) bytes of data:
64 bytes from 20.20.1.192: icmp_seq=1 ttl=64 time=0.024 ms
64 bytes from 20.20.1.192: icmp_seq=2 ttl=64 time=0.033 ms
64 bytes from 20.20.1.192: icmp_seq=3 ttl=64 time=0.033 ms
64 bytes from 20.20.1.192: icmp_seq=4 ttl=64 time=0.032 ms
64 bytes from 20.20.1.192: icmp_seq=5 ttl=64 time=0.035 ms
64 bytes from 20.20.1.192: icmp_seq=6 ttl=64 time=0.033 ms
64 bytes from 20.20.1.192: icmp_seq=7 ttl=64 time=0.029 ms
```

To stop pinging gice CTRL+C



The screenshot shows the AWS Management Console for the same EC2 instance. The terminal output shows the continuation of the ping command, with 209 packets transmitted and received, 0% packet loss, and a time of 212999ms. The user presses CTRL+C to stop the ping command, and the terminal shows the statistics for the ping command.

```
64 bytes from 20.20.1.192: icmp_seq=190 ttl=64 time=0.033 ms
64 bytes from 20.20.1.192: icmp_seq=191 ttl=64 time=0.032 ms
64 bytes from 20.20.1.192: icmp_seq=192 ttl=64 time=0.032 ms
64 bytes from 20.20.1.192: icmp_seq=193 ttl=64 time=0.031 ms
64 bytes from 20.20.1.192: icmp_seq=194 ttl=64 time=0.032 ms
64 bytes from 20.20.1.192: icmp_seq=195 ttl=64 time=0.032 ms
64 bytes from 20.20.1.192: icmp_seq=196 ttl=64 time=0.032 ms
64 bytes from 20.20.1.192: icmp_seq=197 ttl=64 time=0.032 ms
64 bytes from 20.20.1.192: icmp_seq=198 ttl=64 time=0.034 ms
64 bytes from 20.20.1.192: icmp_seq=199 ttl=64 time=0.033 ms
64 bytes from 20.20.1.192: icmp_seq=200 ttl=64 time=0.032 ms
64 bytes from 20.20.1.192: icmp_seq=201 ttl=64 time=0.033 ms
64 bytes from 20.20.1.192: icmp_seq=202 ttl=64 time=0.033 ms
64 bytes from 20.20.1.192: icmp_seq=203 ttl=64 time=0.035 ms
64 bytes from 20.20.1.192: icmp_seq=204 ttl=64 time=0.033 ms
64 bytes from 20.20.1.192: icmp_seq=205 ttl=64 time=0.031 ms
64 bytes from 20.20.1.192: icmp_seq=206 ttl=64 time=0.037 ms
64 bytes from 20.20.1.192: icmp_seq=207 ttl=64 time=0.032 ms
64 bytes from 20.20.1.192: icmp_seq=208 ttl=64 time=0.031 ms
64 bytes from 20.20.1.192: icmp_seq=209 ttl=64 time=0.037 ms
^C
--- 20.20.1.192 ping statistics ---
209 packets transmitted, 209 received, 0% packet loss, time 212999ms
rtt min/avg/max/mdev = 0.024/0.032/0.045/0.002 ms
ubuntu@ip-20-20-1-192:~$
```

Another region :

Use ctrl+d in ubuntu to save the file content then press CTRL+X to exit.

```
EC2
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [6740 B]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [9460 B]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [348 B]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:31 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [524 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [113 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [7304 B]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [448 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [68.9 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [532 B]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [622 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [82.7 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [11.0 kB]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [4268 B]
Get:41 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [972 B]
Get:42 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [228 B]
Fetched 25.0 MB in 4s (6281 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
12 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$ history
 1 sudo apt update
 2 history
ubuntu@ip-10-10-1-179:~$ nano prod-key
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$ ls
ubuntu@ip-10-10-1-179:~$ ls
ubuntu@ip-10-10-1-179:~$ nano prod-key
ubuntu@ip-10-10-1-179:~$ ls
prod-key
ubuntu@ip-10-10-1-179:~$ []
```

i-02b1066fdc802e905 (web)

```
EC2
ubuntu@ip-10-10-1-179:~$ ls
ubuntu@ip-10-10-1-179:~$ ls
ubuntu@ip-10-10-1-179:~$ nano prod-key
ubuntu@ip-10-10-1-179:~$ ls
prod-key
ubuntu@ip-10-10-1-179:~$ chmod 400 prod-key
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$ ssh -i prod-key ubuntu@10.10.1.179
The authenticity of host '10.10.1.179 (10.10.1.179)' can't be established.
ED25519 key fingerprint is SHA256:0hKxKd5jNvnoIdQs0UzcpU7t7HxKN2LQHR0oiHaFDE.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.10.1.179' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1026-aws x86_64)

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

System information as of Wed Dec  7 19:50:34 UTC 2022

System load:  0.0          Processes:    100
Usage of /:   22.2% of 7.57GB   Users logged in:  1
Memory usage: 25%          IPv4 address for eth0: 10.10.1.179
Swap usage:   0%

9 updates can be applied immediately.
9 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Last login: Wed Dec  7 19:41:21 2022 from 18.206.107.29
ubuntu@ip-10-10-1-179:~$ history
 1 history
ubuntu@ip-10-10-1-179:~$ []
```

i-02b1066fdc802e905 (web)

Give ping command :

```
System information as of Wed Dec  7 19:50:34 UTC 2022

System load:  0.0          Processes:    100
Usage of /:   22.2% of 7.57GB   Users logged in:  1
Memory usage: 25%          IPv4 address for eth0: 10.10.1.179
Swap usage:   0%

9 updates can be applied immediately.
9 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Last login: Wed Dec  7 19:41:21 2022 from 18.206.107.29
ubuntu@ip-10-10-1-179:~$ history
 1 history
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$
ubuntu@ip-10-10-1-179:~$ sudo su
root@ip-10-10-1-179:/home/ubuntu# ping 10.10.1.179
PING 10.10.1.179 (10.10.1.179) 56(84) bytes of data:
64 bytes from 10.10.1.179: icmp_seq=1 ttl=64 time=0.020 ms
64 bytes from 10.10.1.179: icmp_seq=2 ttl=64 time=0.042 ms
64 bytes from 10.10.1.179: icmp_seq=3 ttl=64 time=0.043 ms
64 bytes from 10.10.1.179: icmp_seq=4 ttl=64 time=0.054 ms
64 bytes from 10.10.1.179: icmp_seq=5 ttl=64 time=0.041 ms
```



```
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-02b1066fdc802e905&osUser=ubuntu&sshPort=22#/  
AWS Services Search [Alt+S]  
N. Virginia Tejasvi Soni  
64 bytes from 10.10.1.179: icmp_seq=4 ttl=64 time=0.054 ms  
64 bytes from 10.10.1.179: icmp_seq=5 ttl=64 time=0.041 ms  
64 bytes from 10.10.1.179: icmp_seq=6 ttl=64 time=0.040 ms  
64 bytes from 10.10.1.179: icmp_seq=7 ttl=64 time=0.042 ms  
64 bytes from 10.10.1.179: icmp_seq=8 ttl=64 time=0.040 ms  
64 bytes from 10.10.1.179: icmp_seq=9 ttl=64 time=0.041 ms  
64 bytes from 10.10.1.179: icmp_seq=10 ttl=64 time=0.043 ms  
64 bytes from 10.10.1.179: icmp_seq=11 ttl=64 time=0.042 ms  
64 bytes from 10.10.1.179: icmp_seq=12 ttl=64 time=0.045 ms  
64 bytes from 10.10.1.179: icmp_seq=13 ttl=64 time=0.042 ms  
64 bytes from 10.10.1.179: icmp_seq=14 ttl=64 time=0.042 ms  
64 bytes from 10.10.1.179: icmp_seq=15 ttl=64 time=0.043 ms  
64 bytes from 10.10.1.179: icmp_seq=16 ttl=64 time=0.041 ms  
64 bytes from 10.10.1.179: icmp_seq=17 ttl=64 time=0.057 ms  
64 bytes from 10.10.1.179: icmp_seq=18 ttl=64 time=0.042 ms  
64 bytes from 10.10.1.179: icmp_seq=19 ttl=64 time=0.067 ms  
64 bytes from 10.10.1.179: icmp_seq=20 ttl=64 time=0.042 ms  
64 bytes from 10.10.1.179: icmp_seq=21 ttl=64 time=0.060 ms  
64 bytes from 10.10.1.179: icmp_seq=22 ttl=64 time=0.041 ms  
64 bytes from 10.10.1.179: icmp_seq=23 ttl=64 time=0.041 ms  
64 bytes from 10.10.1.179: icmp_seq=24 ttl=64 time=0.043 ms  
64 bytes from 10.10.1.179: icmp_seq=25 ttl=64 time=0.040 ms  
64 bytes from 10.10.1.179: icmp_seq=26 ttl=64 time=0.042 ms  
64 bytes from 10.10.1.179: icmp_seq=27 ttl=64 time=0.042 ms  
64 bytes from 10.10.1.179: icmp_seq=28 ttl=64 time=0.043 ms  
64 bytes from 10.10.1.179: icmp_seq=29 ttl=64 time=0.043 ms  
64 bytes from 10.10.1.179: icmp_seq=30 ttl=64 time=0.043 ms  
64 bytes from 10.10.1.179: icmp_seq=31 ttl=64 time=0.043 ms  
64 bytes from 10.10.1.179: icmp_seq=32 ttl=64 time=0.041 ms  
64 bytes from 10.10.1.179: icmp_seq=33 ttl=64 time=0.040 ms  
64 bytes from 10.10.1.179: icmp_seq=34 ttl=64 time=0.042 ms  
64 bytes from 10.10.1.179: icmp_seq=35 ttl=64 time=0.043 ms  
^C  
--- 10.10.1.179 ping statistics ---  
35 packets transmitted, 35 received, 0% packet loss, time 34809ms  
rtt min/avg/max/mdev = 0.020/0.043/0.067/0.007 ms  
root@ip-10-10-1-179:~#  
i-02b1066fdc802e905 (web)  
PublicIPs: 107.22.103.49 PrivateIPs: 10.10.1.179
```