

TASK – 9

VPC:

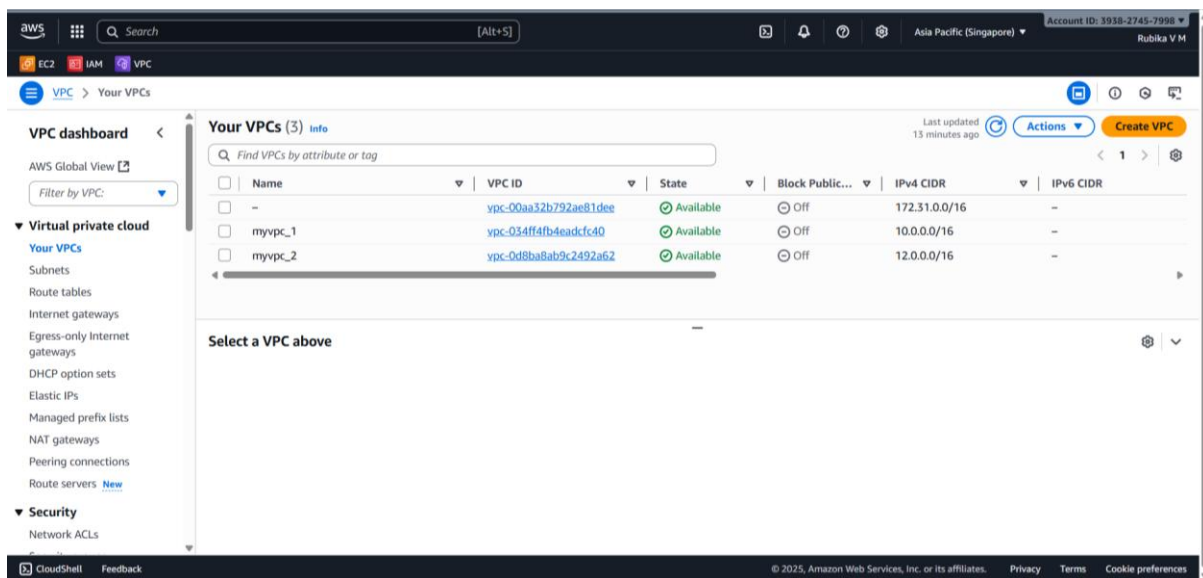
- VPC (Virtual Private Cloud) is a logically isolated virtual network within the AWS.
- It gives us complete control over our virtual networking environment, allowing us to define our own IP address ranges, create subnets, configure route tables, and set up network gateways to control traffic and connectivity to the internet.

VPC Peering:

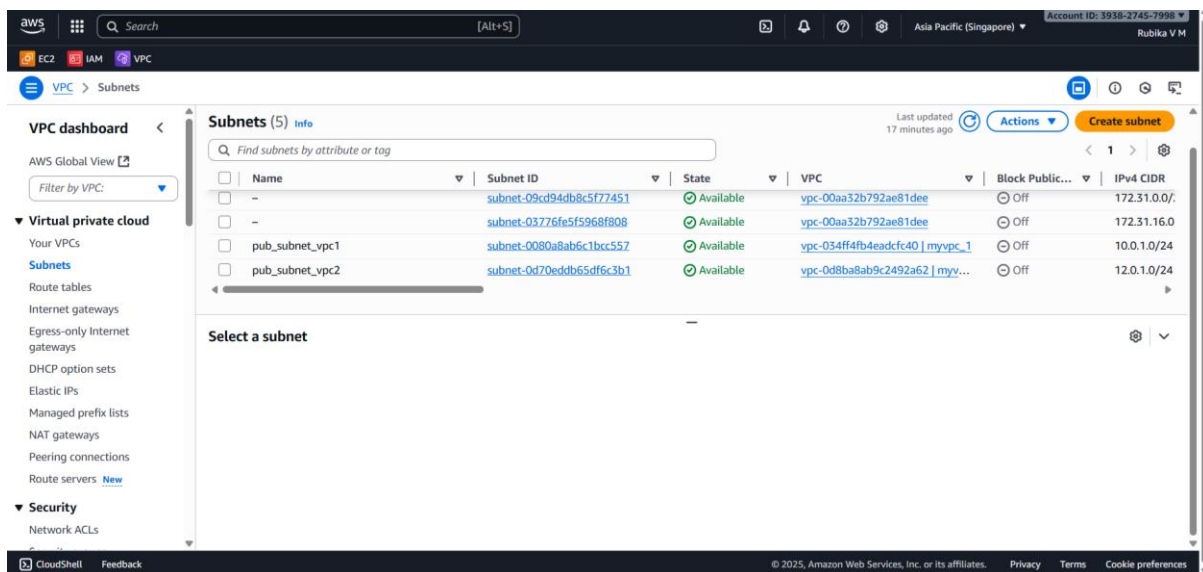
VPC peering is nothing but, connecting two VPC's with one another.

Creating VPC peering in same region (Singapore):

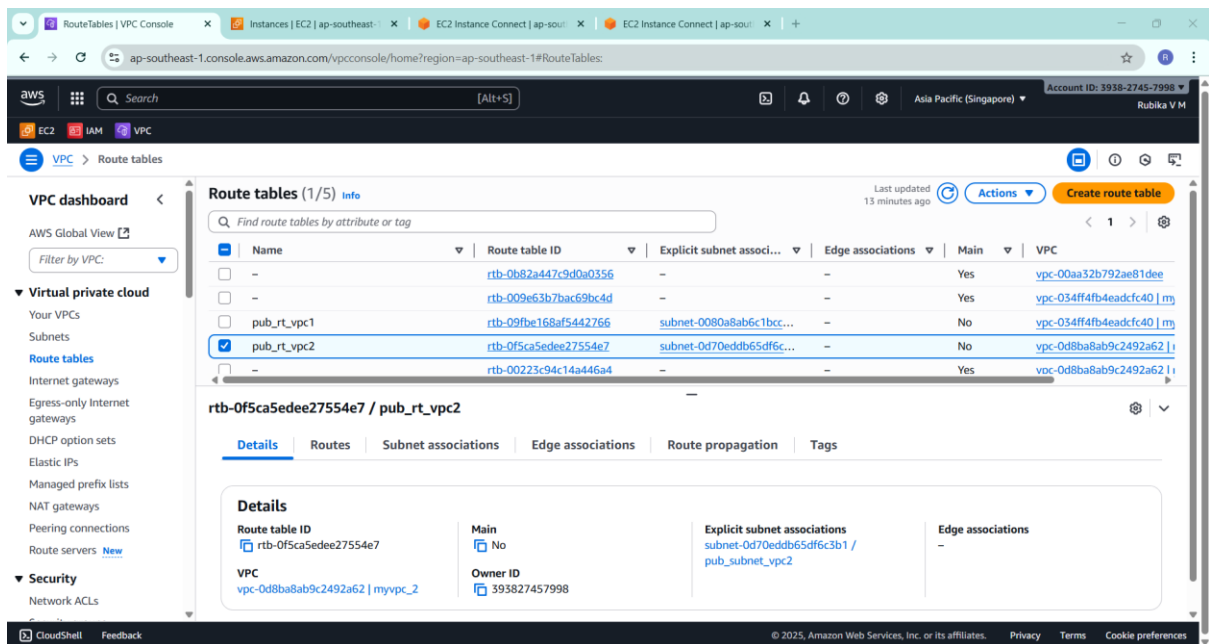
Creation of two VPC:



Creation of subnets:



Creation of Route table:



The screenshot shows the AWS VPC console interface. On the left, the 'VPC dashboard' sidebar is visible with options like 'Your VPCs', 'Subnets', 'Route tables', 'Internet gateways', etc. The main panel displays 'Route tables (1/5)'. A table lists several route tables, with 'pub_rt_vpc2' (ID: rtb-0f5ca5edee27554e7) selected. Below the table, the 'Details' tab is active, showing information about the selected route table.

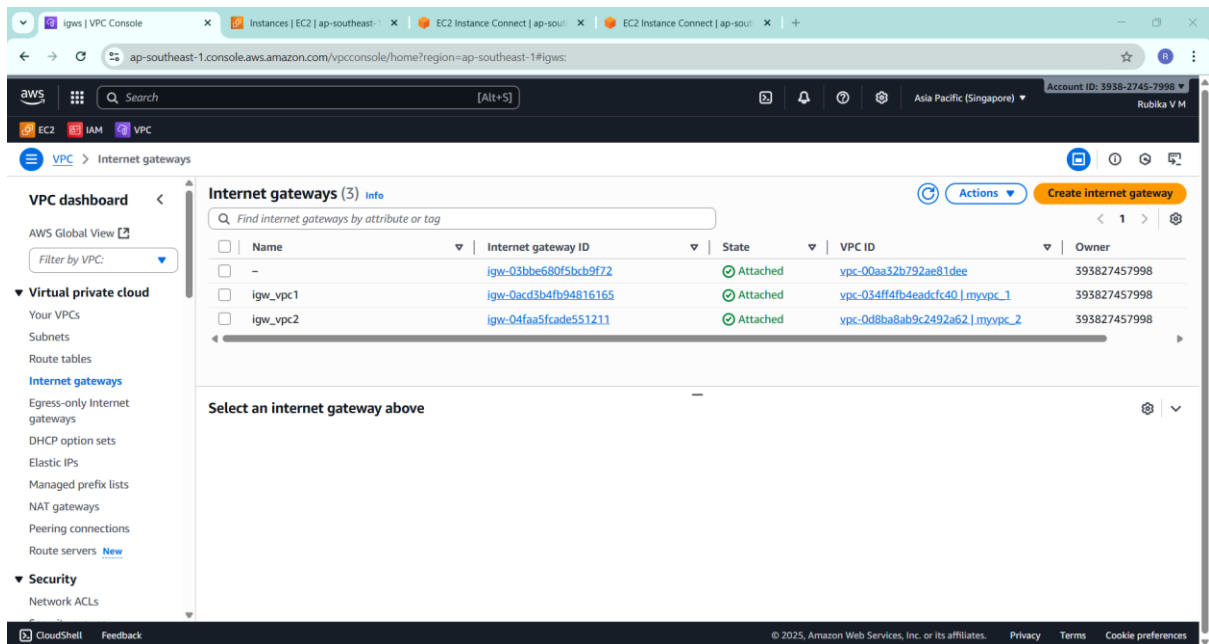
Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
-	rtb-0b82a447c9d0a0356	-	-	Yes	vpc-00aa32b792ae81dee
-	rtb-009e63b7bac69bc4d	-	-	Yes	vpc-034ff4fb4eadcfc40 my
pub_rt_vpc1	rtb-09fbc168af5442766	subnet-0080a8ab6c1bcc...	-	No	vpc-034ff4fb4eadcfc40 my
pub_rt_vpc2	rtb-0f5ca5edee27554e7	subnet-0d70eddb65df6c...	-	No	vpc-0d8ba8ab9c2492a62
-	rtb-00223c94c14a446a4	-	-	Yes	vpc-0d8ba8ab9c2492a62

rtb-0f5ca5edee27554e7 / pub_rt_vpc2

Details

- Route table ID: rtb-0f5ca5edee27554e7
- VPC: vpc-0d8ba8ab9c2492a62 | myvpc_2
- Main: No
- Owner ID: 393827457998
- Explicit subnet associations: subnet-0d70eddb65df6c3b1 / pub_subnet_vpc2
- Edge associations: -

Creation of Internet Gateway:



The screenshot shows the AWS VPC console interface. On the left, the 'VPC dashboard' sidebar is visible with options like 'Your VPCs', 'Subnets', 'Route tables', 'Internet gateways', etc. The main panel displays 'Internet gateways (3)'. A table lists three internet gateways, all in an 'Attached' state.

Name	Internet gateway ID	State	VPC ID	Owner
-	igw-03bbe680f5bcb9f72	Attached	vpc-00aa32b792ae81dee	393827457998
igw_vpc1	igw-0acd3bd4fb94816165	Attached	vpc-034ff4fb4eadcfc40 myvpc_1	393827457998
igw_vpc2	igw-04faa5fcade551211	Attached	vpc-0d8ba8ab9c2492a62 myvpc_2	393827457998

Select an internet gateway above

Creation of Security groups:

Security group (sg-022367d5c02fcd258 | pubsg_vpc2) was created successfully

Security Groups (17) Info

Name	Security group ID	Security group name	VPC ID	Description
-	sg-07aec593fe64982e4	launch-wizard-46	vpc-00aa32b792ae81dee	launch-wizard-
-	sg-022367d5c02fcd258	pubsg_vpc2	vpc-0d8ba8ab9c2492a62	pubsg_vpc2
-	sg-000bd749d81b277cc	launch-wizard-39	vpc-00aa32b792ae81dee	launch-wizard-
-	sg-04537047e2ad707b3	launch-wizard-38	vpc-00aa32b792ae81dee	launch-wizard-
-	sg-0825059f3b1e79be2	launch-wizard-29	vpc-00aa32b792ae81dee	launch-wizard-
-	sg-07cbab90751167723	launch-wizard-43	vpc-00aa32b792ae81dee	launch-wizard-
-	sg-0f98e3ca749ee8117	pubsg_vpc1	vpc-034ff4fb4eadcf40	vpc1sg

Select a security group

Creation of instance:

Instances (1/2) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
vpc1_instance	i-026e21377fc1d1ae7	Running	t2.micro	2/2 checks passed	View alarms +	ap-southeast-1a	-
vpc2_instance	i-0702f75f1d8dbfe49	Running	t2.micro	Initializing	View alarms +	ap-southeast-1a	-

i-0702f75f1d8dbfe49 (vpc2_instance)

Details

Instance summary Info

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0702f75f1d8dbfe49	18.143.143.83 open address	12.0.1.82
IPv6 address	Instance state	Public DNS
-	Running	-

Creation of Peering in VPC:

The screenshot shows the AWS Management Console interface for VPC Peering connections. The left sidebar contains navigation options for Virtual private cloud, Security, and PrivateLink and Lattice. The main content area is titled 'Peering connections (1/1)' and includes a search bar and a table of connections. The table has columns for Name, Peering connection ID, Status, Requester VPC, and Acceptor VPC. One connection is listed: 'peering_vpc' with ID 'pcx-04aa1a777826feabd' and status 'Active'. Below the table, the details for the selected connection are shown, including the Requester owner ID, Requester VPC, Requester CIDRs, Acceptor owner ID, Acceptor VPC, and the VPC Peering connection ARN.

Name	Peering connection ID	Status	Requester VPC	Acceptor VPC
peering_vpc	pcx-04aa1a777826feabd	Active	vpc-034ff4fb4eadcfc40 / myvp...	vpc-0d8ba8ab9c2492a62 / myv...

pcx-04aa1a777826feabd / peering_vpc

Details

Requester owner ID	Acceptor owner ID	VPC Peering connection ARN
393827457998	393827457998	arn:aws:ec2:ap-southeast-1:393827457998:vpc-peering-connection/pcx-04aa1a777826feabd

Requester VPC	Acceptor VPC
vpc-034ff4fb4eadcfc40 / myvp...	vpc-0d8ba8ab9c2492a62 / myvp...

Requester CIDRs	Acceptor CIDRs
10.0.0.0/16	

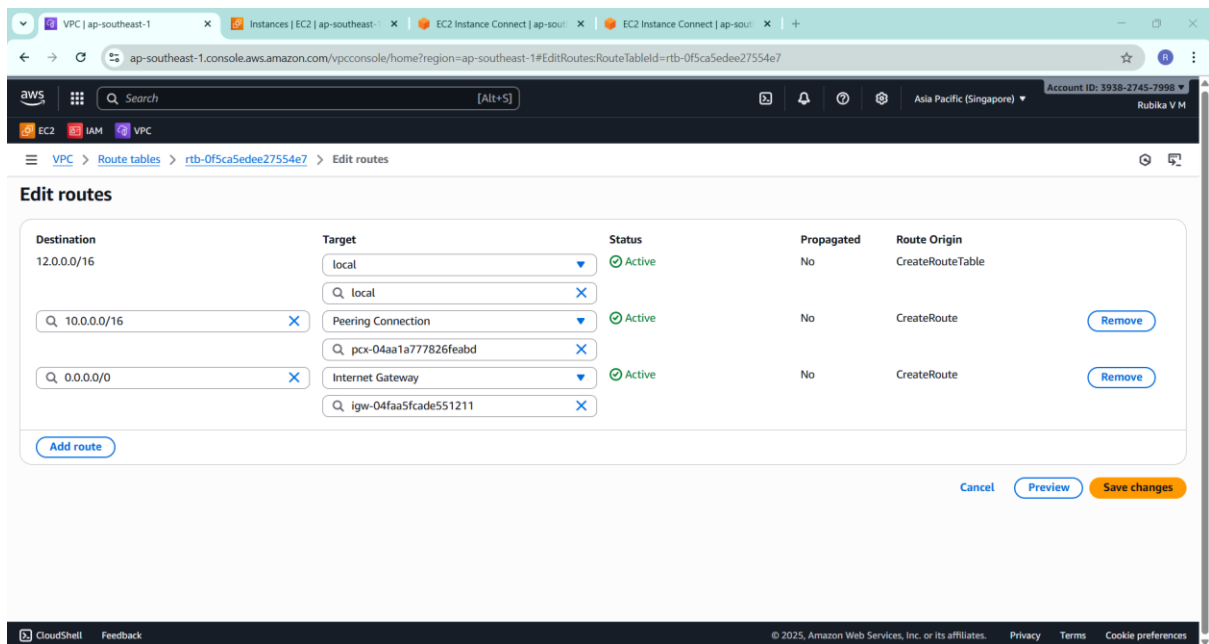
Attaching the CIDR of VPC2 with VPC1 route table:

The screenshot shows the AWS Management Console interface for editing route tables. The left sidebar contains navigation options for VPC, Route tables, and Edit routes. The main content area is titled 'Edit routes' and includes a table of routes. The table has columns for Destination, Target, Status, Propagated, and Route Origin. Three routes are listed: a local route, a peering connection route, and an internet gateway route. The 'Add route' button is visible at the bottom.

Destination	Target	Status	Propagated	Route Origin
10.0.0.0/16	local	Active	No	CreateRouteTable
12.0.0.0/16	Peering Connection	Active	No	CreateRoute
0.0.0.0/0	Internet Gateway	Active	No	CreateRoute

Add route

Attaching the CIDR of VPC1 with VPC2 route table:



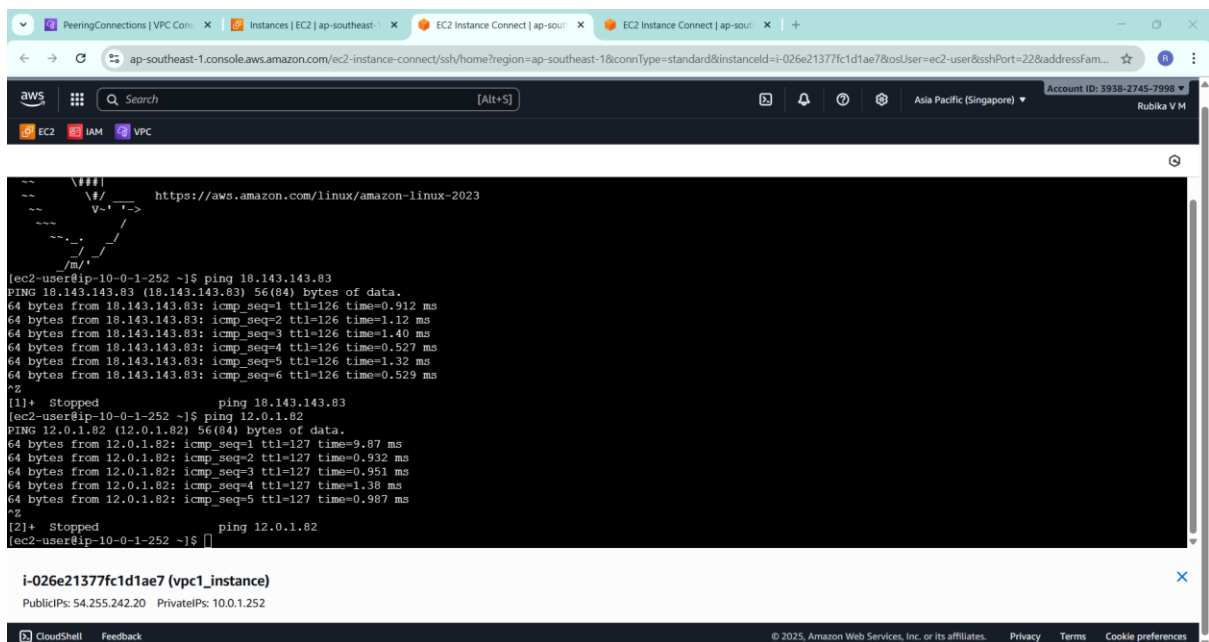
The screenshot shows the AWS Management Console interface for editing a route table. The breadcrumb navigation indicates the path: VPC > Route tables > rtb-0f5ca5edee27554e7 > Edit routes. The main content area is titled 'Edit routes' and displays a table of routes. The table has five columns: Destination, Target, Status, Propagated, and Route Origin. There are three routes listed:

Destination	Target	Status	Propagated	Route Origin
12.0.0/16	local	Active	No	CreateRouteTable
10.0.0/16	Peering Connection	Active	No	CreateRoute
0.0.0/0	Internet Gateway	Active	No	CreateRoute

Below the table, there is an 'Add route' button. At the bottom right of the console, there are 'Cancel', 'Preview', and 'Save changes' buttons.

Check for internet connectivity by ping command:

Ping the public and private IP address of VPC2 instance:



The screenshot shows the AWS CloudShell terminal interface. The terminal displays the output of several ping commands. The first command is a ping to the public IP address 18.143.143.83, which shows successful results with 64 bytes of data and various TTL and time values. The second command is a ping to the private IP address 12.0.1.82, which also shows successful results. The terminal output is as follows:

```
~$ https://aws.amazon.com/linux/amazon-linux-2023
[ec2-user@ip-10-0-1-252 ~]$ ping 18.143.143.83
PING 18.143.143.83 (18.143.143.83) 56(84) bytes of data:
64 bytes from 18.143.143.83: icmp_seq=1 ttl=126 time=0.912 ms
64 bytes from 18.143.143.83: icmp_seq=2 ttl=126 time=1.12 ms
64 bytes from 18.143.143.83: icmp_seq=3 ttl=126 time=1.40 ms
64 bytes from 18.143.143.83: icmp_seq=4 ttl=126 time=0.527 ms
64 bytes from 18.143.143.83: icmp_seq=5 ttl=126 time=1.32 ms
64 bytes from 18.143.143.83: icmp_seq=6 ttl=126 time=0.529 ms
^C
[1]+  Stopped                  ping 18.143.143.83
[ec2-user@ip-10-0-1-252 ~]$ ping 12.0.1.82
PING 12.0.1.82 (12.0.1.82) 56(84) bytes of data:
64 bytes from 12.0.1.82: icmp_seq=1 ttl=127 time=9.87 ms
64 bytes from 12.0.1.82: icmp_seq=2 ttl=127 time=0.932 ms
64 bytes from 12.0.1.82: icmp_seq=3 ttl=127 time=0.951 ms
64 bytes from 12.0.1.82: icmp_seq=4 ttl=127 time=1.38 ms
64 bytes from 12.0.1.82: icmp_seq=5 ttl=127 time=0.987 ms
^C
[2]+  Stopped                  ping 12.0.1.82
[ec2-user@ip-10-0-1-252 ~]$
```

Below the terminal output, the instance details for 'i-026e21377fc1d1ae7 (vpc1_instance)' are displayed, showing the PublicIPs as 54.255.242.20 and PrivateIPs as 10.0.1.252.

The screenshot shows a terminal window with the following content:

```

~# https://aws.amazon.com/linux/amazon-linux-2023

[ec2-user@ip-12-0-1-82 ~]$ ping 54.255.242.20
PING 54.255.242.20 (54.255.242.20) 56(84) bytes of data.
64 bytes from 54.255.242.20: icmp_seq=1 ttl=126 time=1.26 ms
64 bytes from 54.255.242.20: icmp_seq=2 ttl=126 time=1.03 ms
64 bytes from 54.255.242.20: icmp_seq=3 ttl=126 time=0.825 ms
64 bytes from 54.255.242.20: icmp_seq=4 ttl=126 time=0.927 ms
64 bytes from 54.255.242.20: icmp_seq=5 ttl=126 time=1.19 ms
64 bytes from 54.255.242.20: icmp_seq=6 ttl=126 time=1.37 ms
64 bytes from 54.255.242.20: icmp_seq=7 ttl=126 time=1.61 ms
^C
[1]+  Stopped                  ping 54.255.242.20
[ec2-user@ip-12-0-1-82 ~]$ ping 10.0.1.252
PING 10.0.1.252 (10.0.1.252) 56(84) bytes of data.
64 bytes from 10.0.1.252: icmp_seq=1 ttl=127 time=0.878 ms
64 bytes from 10.0.1.252: icmp_seq=2 ttl=127 time=1.13 ms
64 bytes from 10.0.1.252: icmp_seq=3 ttl=127 time=1.40 ms
64 bytes from 10.0.1.252: icmp_seq=4 ttl=127 time=1.25 ms
64 bytes from 10.0.1.252: icmp_seq=5 ttl=127 time=1.69 ms
64 bytes from 10.0.1.252: icmp_seq=6 ttl=127 time=1.06 ms
^C

```

Below the terminal output, the instance ID **i-0702f75f1d8dbfe49** (vpc2_instance) is displayed. At the bottom, the public IP is **18.143.143.83** and the private IP is **10.0.1.82**.