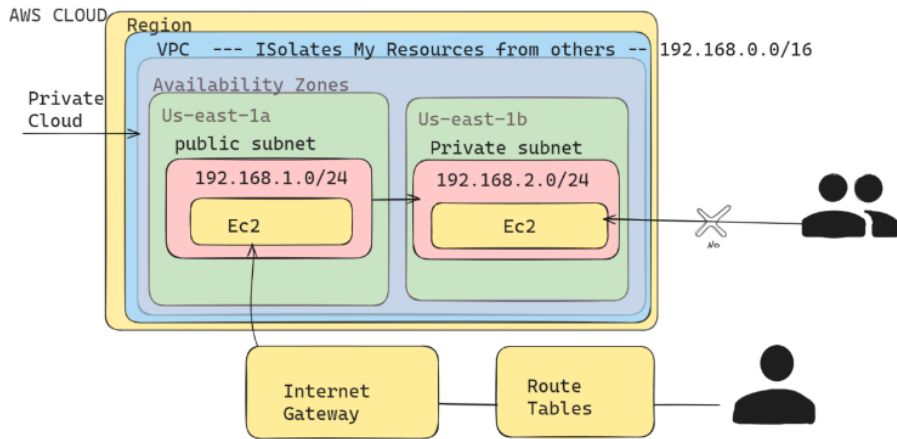


VPC



Create a VPC with IPv4 CIDR as 192.168.0.0/16

The screenshot shows the AWS Management Console for a VPC named "vpc-0bcbee32104e5488b" / "viishnu-vpc-sample". The console displays the following details:

- Details:**
 - VPC ID: vpc-0bcbee32104e5488b
 - State: Available
 - DNS resolution: Enabled
 - Main network ACL: acl-02995b771c55f0b6d
 - IPv6 CIDR (Network border group): -
 - Block Public Access: Off
 - DHCP option set: dhcp-055962aff0e64429
 - IPv4 CIDR: 192.168.0.0/16
 - Route 53 Resolver DNS Firewall rule groups: Failed to load rule groups
 - DNS hostnames: Disabled
 - Main route table: rtb-06d8ae927807f6177
 - IPv6 pool: -
 - Owner ID: 012334318258
- Resource map:**
 - VPC:** viishnu-vpc-sample
 - Subnets (2):** us-east-1a (viishnu-public-subnet, viishnu-private-subnet)
 - Route tables (2):** viishnu-route-table, rtb-06d8ae927807f6177
 - Network connections (1):** viishnu-internet-gateway

Create public and private subnets in the same region in two availability zones (us-east-1a and us-east-1b)

Subnets (1/8)

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR	IPv6 CIDR	IPv6 CIDR association ID	Available IPv4 addresses	Available
-	subnet-03c30a037165c6db	Available	vpc-08cbee32104e5488b	Off	172.31.64.0/20	-	-	4088	us-east-
viishnu-public-subnet	subnet-0b7d4c91745c8037	Available	vpc-08cbee32104e5488b viish...	Off	192.168.1.0/24	-	-	250	us-east-
-	subnet-08272e4140151d93a	Available	vpc-08cbee32104e5488b	Off	172.31.16.0/20	-	-	4084	us-east-
-	subnet-03c0825f6d7e175aa	Available	vpc-08cbee32104e5488b	Off	172.31.0.0/20	-	-	4090	us-east-
-	subnet-0d5c53f498a3935ba	Available	vpc-08cbee32104e5488b	Off	172.31.80.0/20	-	-	4090	us-east-
-	subnet-0c493bd102a08c40	Available	vpc-08cbee32104e5488b	Off	172.31.48.0/20	-	-	4091	us-east-
-	subnet-09f3b56c21c2a904f	Available	vpc-08cbee32104e5488b	Off	172.31.32.0/20	-	-	4089	us-east-
viishnu-private-subnet	subnet-09541886aaf0f5ab	Available	vpc-08cbee32104e5488b viish...	Off	192.168.2.0/24	-	-	250	us-east-

subnet-0b7d4c91745c8037 / viishnu-public-subnet

Details

Subnet ID: subnet-0b7d4c91745c8037

Subnet ARN: arn:aws:ec2:us-east-1:012334318258:subnet/subnet-0b7d4c91745c8037

Available IPv4 addresses: 250

Availability Zone ID: use1-az4

Network ACL: acl-02595b771c5f06d

Auto-assign customer-owned IPv4 address: No

IPv6 CIDR reservations: No

State: Available

IPv6 CIDR: -

Network border group: -

Default subnet: No

Customer-owned IPv4 pool: -

IPv6-only: No

Block Public Access: Off

IPv6 CIDR association ID: -

VPC: vpc-08cbee32104e5488b | viishnu-vpc-sample

Auto-assign public IPv4 address: No

Outpost ID: -

Hostname type: IP name

Create an Internet Gateway and attach it to the created VPC

Internet gateways (1/2)

Name	Internet gateway ID	State	VPC ID	Owner
-	igw-0725d4b921ba29b7	Attached	vpc-08cbee32104e5488b	012334318258
viishnu-internet-gateway	igw-0cd7d4b9199592efa	Attached	vpc-08cbee32104e5488b viishnu-vpc...	012334318258

igw-0cd7d4b9199592efa / viishnu-internet-gateway

Details

Internet gateway ID: igw-0cd7d4b9199592efa

State: Attached

VPC ID: vpc-08cbee32104e5488b | viishnu-vpc-sample

Owner: 012334318258

Create a Route Table and add a route for the VPC with CIDR 192.168.0.0/16

VPC dashboard < **Route tables (1/3)** info

Find resources by attribute or tag

Name	Route table ID	Explicit subnet assoc...	Edge associations	Main	VPC	Owner ID
-	rtb-5edf8fab22b70478e	-	-	Yes	vpc-8bcaae53deaf956b	012354318258
viishnu-route-table	rtb-07848ca59cd9ab3f	subnet-0b7d74c91745cd...	-	No	vpc-8bcaae53deaf956b viish...	012354318258
-	rtb-5db86c9278075d177	-	-	Yes	vpc-8bcaae53deaf956b viish...	012354318258

rtb-07848ca59cd9ab3f / viishnu-route-table

Details | Routes | Subnet associations | Edge associations | Route propagation | Tags

Details

Route table ID: rtb-07848ca59cd9ab3f

Main: No

Owner ID: 012354318258

Explicit subnet associations: subnet-0b7d74c91745cd037 / viishnu-public-subnet

Edge associations: -

VPC: vpc-8bcaae53deaf956b | viishnu-vpc-sample

Create two instances with Windows AMI and two instances with Linux/Ubuntu AMI, each configured with a public and private subnet

EC2 > **Instances**

Instances (4) info

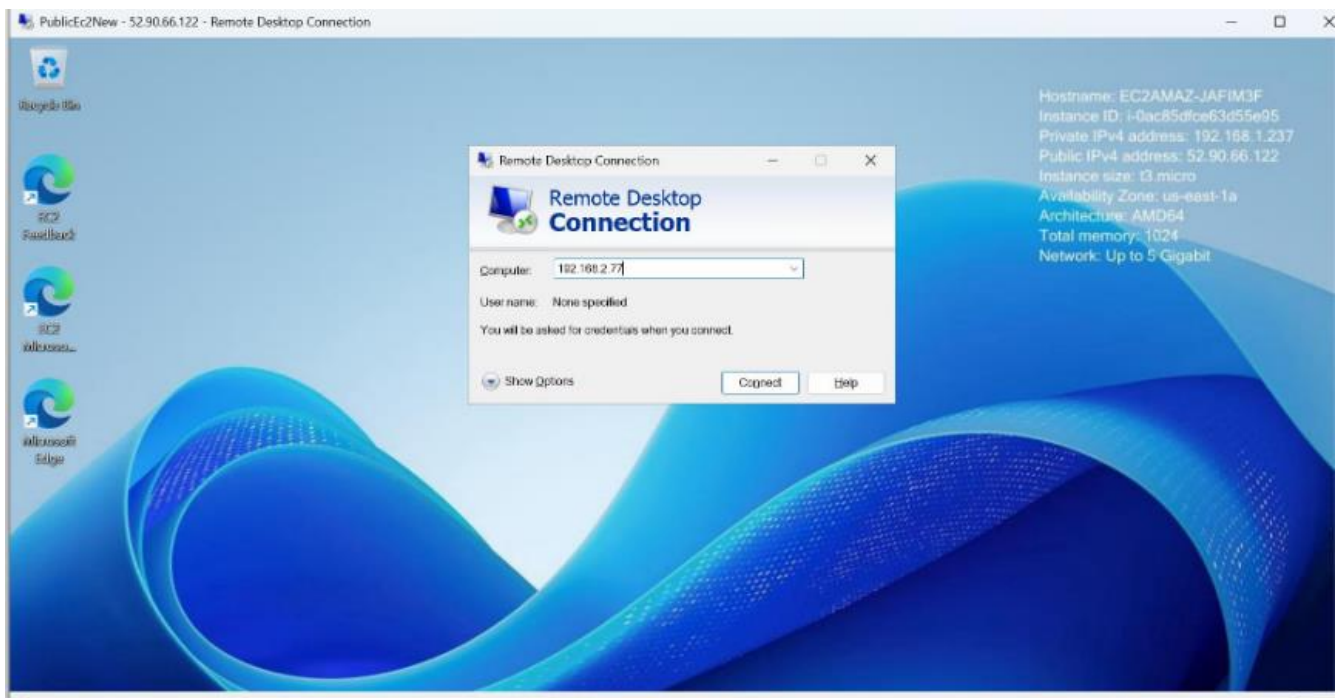
Find instance by attribute or tag (case-sensitive)

Running

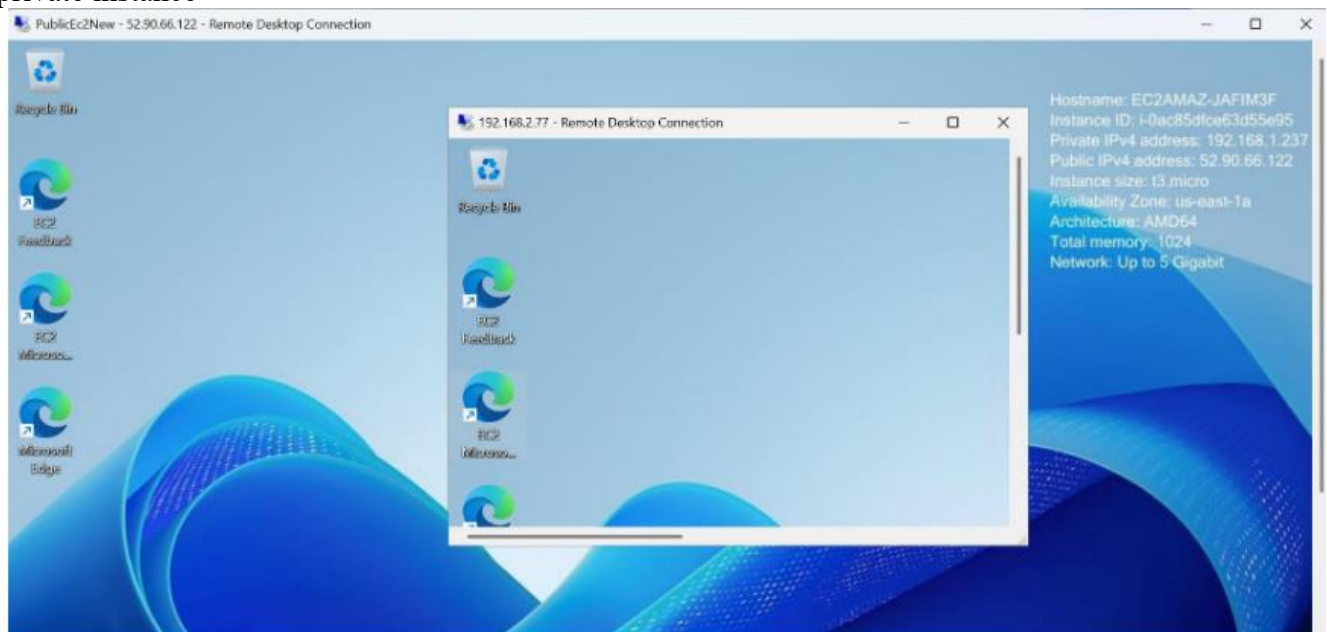
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
PrivateUbuntu...	i-0153f45c6d032f00c	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b	-	-	-
PrivateEc2	i-071d135493f2e6e77	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1b	-	-	-
PublicUbuntu...	i-00a89f4d8224a0c20	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	-	34.239.103.47	-
PublicEc2New	i-0ac85d6fc63d55e95	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1a	-	52.90.66.122	-

Select an instance

Connect to the public Windows Ec2 instance using RDP client and enter the private IP of the private EC2 instance



Upon successful connection, a new window opens displaying the desktop connection of the private instance



The same process is followed to connect two Ubuntu instances using SSH client. The .pem file is copied into the public instance using scp command and later access the private instance using the .pem file

```
ubuntu@ip-192-168-2-247: ~  
PowerShell  
ubuntu@ip-192-168-1-193:~$ ls  
Windows.pem  
ubuntu@ip-192-168-1-193:~$ ssh -i "Windows.pem" ubuntu@192.168.2.247  
The authenticity of host '192.168.2.247 (192.168.2.247)' can't be established.  
ED25519 key fingerprint is SHA256:a78X25HcHJMryWwF4K5VBNQfn+FQ2Ia7P4eIohyQVY.  
This key is not known by any other names.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added '192.168.2.247' (ED25519) to the list of known hosts.  
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@  
@ WARNING: UNPROTECTED PRIVATE KEY FILE! @  
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@  
Permissions 0664 for 'Windows.pem' are too open.  
It is required that your private key files are NOT accessible by others.  
This private key will be ignored.  
Load key "Windows.pem": bad permissions  
ubuntu@192.168.2.247: Permission denied (publickey).  
ubuntu@ip-192-168-1-193:~$ sudo !!  
sudo ssh -i "Windows.pem" ubuntu@192.168.2.247  
The authenticity of host '192.168.2.247 (192.168.2.247)' can't be established.  
ED25519 key fingerprint is SHA256:a78X25HcHJMryWwF4K5VBNQfn+FQ2Ia7P4eIohyQVY.  
This key is not known by any other names.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added '192.168.2.247' (ED25519) to the list of known hosts.  
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1021-aws x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/pro  
  
System information as of Mon Mar 17 05:13:40 UTC 2025  
  
System load:  0.13          Processes:            107  
Usage of /:   24.9% of 6.71GB Users logged in:        0
```