Experiment 4 Output

Aim: This experiment focuses on configuring and managing cloud networking services, such as creating Virtual Private Clouds (VPCs) and subnets. It involves using cloud platforms like AWS, Google Cloud, or Azure to set up and manage cloud networking environments.

Starting VPC

```
C:\Users\rawat>aws ec2 create-vpc --cidr-block 10.0.0.0/16 -
-------------------------------------------------------------
|                        CreateVpc                          |
+-----------------------------------------------------------+
||                          Vpc                            ||
|+----------------------+----------------------------------+|
||  CidrBlock           |  10.0.0.0/16                     ||
||  DhcpOptionsId       |  default                         ||
||  InstanceTenancy     |  default                         ||
||  OwnerId             |  000000000000                    ||
||  State               |  pending                         ||
||  VpcId               |  vpc-e57c31c086cb3ba0c           ||
|+----------------------+----------------------------------+|
|||              CidrBlockAssociationSet                  |||
||+---------------+-------------------------------------+||
|||  AssociationId |  vpc-cidr-assoc-f48b6c421c5fe1c29   |||
|||  CidrBlock     |  10.0.0.0/16                        |||
||+---------------+-------------------------------------+||
|||                CidrBlockState                         |||
|||+------------------+-----------------------------+|||
||||  State           |  associated                 ||||
|||+------------------+-----------------------------+|||
```

Fig 1: VPC Setup

Creating Subnet and API Gateway

```
C:\Users\rawat>aws ec2 create-subnet --vpc-id vpc-e57c31c
-------------------------------------------------------
|                                            CreateSubnet
+-----------------------------------------------------+
||                                              Subnet
|+-------------------------------+---------------------
||  AssignIpv6AddressOnCreation  |  False
||  AvailabilityZone             |  us-east-1a
||  AvailabilityZoneId           |  use1-az6
||  AvailableIpAddressCount      |  251
||  CidrBlock                    |  10.0.1.0/24
||  DefaultForAz                 |  False
||  Ipv6Native                   |  False
||  MapPublicIpOnLaunch          |  False
||  OwnerId                      |  000000000000
||  State                        |  pending
||  SubnetArn                    |  arn:aws:ec2:us-east-1:
||  SubnetId                     |  subnet-13df13c5c1296a64
||  VpcId                        |  vpc-e57c31c086cb3ba0c
|+-------------------------------+---------------------

C:\Users\rawat>aws ec2 create-internet-gateway --endpoint-
-----------------------------------------------
|           CreateInternetGateway             |
+---------------------------------------------+
|             InternetGateway                 ||
|+-------------------------+-----------------+|
|    InternetGatewayId     |    OwnerId      ||
|+-------------------------+-----------------+|
|  igw-095e7ce5a8f8472d1   |  000000000000   ||
|+-------------------------+-----------------+|
```

Fig 2: Subnet and API Gateway Setup

Creating a Route Table

```
C:\Users\rawat>aws ec2 create-route-table --vpc-id vpc-e57c31c086cb3ba0c -
---------------------------------------------------------------------
|                       CreateRouteTable                            |
+-------------------------------------------------------------------+
||                         RouteTable                              ||
|+--------------+-----------------------+-------------------------+|
||    OwnerId   |      RouteTableId     |          VpcId          ||
|+--------------+-----------------------+-------------------------+|
||  000000000000|  rtb-b16c035cb996d1c2a |  vpc-e57c31c086cb3ba0c  ||
|+--------------+-----------------------+-------------------------+|
|||                          Routes                               |||
||+--------------------------------+----------------+------------+||
|||     DestinationCidrBlock       |    GatewayId   |   State    |||
||+--------------------------------+----------------+------------+||
|||  10.0.0.0/16                   |  local         |  active    |||
||+--------------------------------+----------------+------------+||

C:\Users\rawat>aws ec2 create-route --route-table-id rtb-b16c035cb996d1c2a
T_URL%
--------------------
|   CreateRoute    |
+---------+--------+
|  Return |  True  |
+---------+--------+
```

Fig 3: Route Table and Creating new Routes

Listing Subnets and Connections

```
C:\Users\rawat>aws ec2 describe-subnets --endpoint-url=%AWS_ENDPOINT_URL%
-------------------------------------------------------------------------
|                           DescribeSubnets                             |
+-----------------------------------------------------------------------+
||                             Subnets                                 ||
|+-------------------------------+---------------------------------------+
||  AssignIpv6AddressOnCreation  |  False
||  AvailabilityZone             |  us-east-1a
||  AvailabilityZoneId           |  use1-az6
||  AvailableIpAddressCount      |  4091
||  CidrBlock                    |  172.31.0.0/20
||  DefaultForAz                 |  True
||  Ipv6Native                   |  False
||  MapPublicIpOnLaunch          |  True
||  OwnerId                      |  000000000000
||  State                        |  available
||  SubnetArn                    |  arn:aws:ec2:us-east-1:000000000000:subne
||  SubnetId                     |  subnet-0e07399449d53791e
||  VpcId                        |  vpc-71f925ef3211ce7cf
|+-------------------------------+---------------------------------------+
||                             Subnets                                 ||
|+-------------------------------+---------------------------------------+
||  AssignIpv6AddressOnCreation  |  False
||  AvailabilityZone             |  us-east-1a
||  AvailabilityZoneId           |  use1-az6
||  AvailableIpAddressCount      |  251
||  CidrBlock                    |  10.0.1.0/24
||  DefaultForAz                 |  False
||  Ipv6Native                   |  False
||  MapPublicIpOnLaunch          |  False
||  OwnerId                      |  000000000000
||  State                        |  available
```

Fig 4: List of Subnets

Madhurima Rawat DS 42