

## AWS Task 2

### 1- First we create a VPC

The screenshot shows the AWS Management Console interface for VPCs. The left sidebar contains navigation links for VPC Dashboard, EC2 Global View, and various VPC-related services. The main content area displays a list of VPCs under the heading 'Your VPCs (1/2)'. The 'my-demo-vpc' is selected, and its details are shown in the 'Details' tab. The details include VPC ID, State, DNS hostnames, DNS resolution, DHCP options set, Main route table, Main network ACL, IPv4 CIDR, IPv6 pool, and Owner ID.

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	IPv6 pool
my-demo-vpc	vpc-077de58648241d61a	Available	10.0.0.0/16	-	-

**Details for vpc-077de58648241d61a / my-demo-vpc**

Property	Value
VPC ID	vpc-077de58648241d61a
State	Available
DNS hostnames	Disabled
DNS resolution	Enabled
DHCP options set	dopt-9f7f30f4
Main route table	rtb-0dcee9f24a437bc4c
Main network ACL	acl-018f6d579916b9a91
IPv4 CIDR	10.0.0.0/16
IPv6 pool	-
Owner ID	-

### 2- Then we create 2 subnets

#### One public

The screenshot shows the AWS Management Console interface for Subnets. The left sidebar contains navigation links for Subnets, Route Tables, Internet Gateways, Egress Only Internet Gateways, DHCP Options Sets, Elastic IPs, Managed Prefix Lists, Endpoints, Endpoint Services, NAT Gateways, Peering, and Connections. The main content area displays a list of subnets under the heading 'Subnets (1/5)'. The 'mypublicsubnet' is selected, and its details are shown in the 'Details' tab. The details include Subnet ID, Subnet ARN, State, Availability Zone, IPv4 CIDR, and IPv6 CIDR.

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR
myprivatesubnet	subnet-0f6cc5e0d49e9385d	Available	vpc-077de58648241d61a   my...	10.0.2.0/24	-
mypublicsubnet	subnet-0b0c33adb1aa8661e	Available	vpc-077de58648241d61a   my...	10.0.1.0/24	-

**Details for subnet-0b0c33adb1aa8661e / mypublicsubnet**

Property	Value
Subnet ID	subnet-0b0c33adb1aa8661e
Subnet ARN	arn:aws:ec2:us-east-2:697054457294:subnet/subnet-0b0c33adb1aa8661e
State	Available
Availability Zone	us-east-2b
IPv4 CIDR	10.0.1.0/24
IPv6 CIDR	-

## And one private

The screenshot shows the AWS Management Console 'Subnets' page. A table lists five subnets, with 'myprivatesubnet' (subnet-0f6cc5e0d49e9385d) selected. Below the table, the 'Details' tab is active, showing information for the selected subnet.

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR
-	subnet-82d0e3ce	Available	vpc-c4d0baaf	172.31.32.0/20	-
myprivatesubnet	subnet-0f6cc5e0d49e9385d	Available	vpc-077de58648241d61a   my...	10.0.2.0/24	-
-	subnet-9ac04e7	Available	vpc-c4d0baaf	172.31.16.0/20	-
-	subnet-59db4632	Available	vpc-c4d0baaf	172.31.0.0/20	-
mypubsubnet	subnet-0b0c33adb1aa8661e	Available	vpc-077de58648241d61a   my...	10.0.1.0/24	-

  

Details			
Subnet ID subnet-0f6cc5e0d49e9385d	Subnet ARN arn:aws:ec2:us-east-2:697054457294:subnet/subnet-0f6cc5e0d49e9385d	State Available	IPv4 CIDR 10.0.2.0/24
Available IPv4 addresses 248	IPV6 CIDR -	Availability Zone us-east-2b	Availability Zone ID use2-az2
VPC vpc-077de58648241d61a   my-demo-vpc	Route table	Network ACL acl-018fd579916b9a91	Default subnet No

## 3- Then we create 2 instances

## One in public subnet

The screenshot shows the AWS Management Console 'Instances' page. A table lists three instances, with 'Public\_App' (i-0a66e017255315664) selected. Below the table, the 'Instance summary' tab is active, showing information for the selected instance.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
-	i-00047159c21654d16	Running	t2.micro	2/2 checks passed	No alarms	us-east-2b	ec2-18-222-207-1
Public_App	i-0a66e017255315664	Running	t2.micro	2/2 checks passed	No alarms	us-east-2b	-
Private_Database	i-0d9050d6da9e5755d	Running	t2.micro	2/2 checks passed	No alarms	us-east-2b	-
EC2PrivateSubnet	i-04727599457441d0d	Running	t2.micro	2/2 checks passed	No alarms	us-east-2b	-

  

Instance: i-0a66e017255315664 (Public_App)		
Instance ID i-0a66e017255315664 (Public_App)	Public IPv4 address 18.117.117.109   open address	Private IPv4 addresses 10.0.1.42
IPv6 address -	Instance state Running	Public IPv4 DNS -
Private IPv4 DNS ip-10-0-1-42.us-east-2.compute.internal	Instance type t2.micro	Elastic IP addresses -
VPC ID vpc-077de58648241d61a (my-demo-vpc)	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations.   Learn more	IAM Role -
Subnet ID		

## And other in private subnet

The screenshot displays the AWS Management Console's 'Instances' page. The left sidebar shows navigation options like 'EC2 Dashboard', 'Events', 'Tags', 'Limits', 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity Reservations', 'Images', 'AMIs', 'Elastic Block Store', 'Volumes', and 'Snapshots'. The main content area shows a list of instances. The instance 'EC2PrivateSubnet2' with ID 'i-08d5d8886036e62fd' is selected. Below the list, the details for this instance are shown, including its state (Running), type (t2.micro), status checks (2/2 checks passed), alarm status (No alarms), availability zone (us-east-2b), and public IPv4 DNS (ec2-18-222-207-1). The instance is associated with the VPC 'vpc-077de58648241d61a' and the subnet 'subnet-0f6cc5e0d49e9385d'.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
-	i-00047159c21654d16	Running	t2.micro	2/2 checks passed	No alarms	us-east-2b	ec2-18-222-207-1
Public_App	i-0a66e017255315664	Running	t2.micro	2/2 checks passed	No alarms	us-east-2b	-
Private_Database	i-0d9050d6da9e5755d	Running	t2.micro	2/2 checks passed	No alarms	us-east-2b	-
EC2PrivateSubnet	i-04723599457441d0d	Running	t2.micro	2/2 checks passed	No alarms	us-east-2b	-
EC2PrivateSubnet2	i-08d5d8886036e62fd	Running	t2.micro	2/2 checks passed	No alarms	us-east-2b	-

**Instance: i-08d5d8886036e62fd (EC2PrivateSubnet2)**

Property	Value
Instance state	Running
Instance type	t2.micro
Public IPv4 DNS	10.0.2.181
Elastic IP addresses	-
IAM Role	SSMRole
AWS Compute Optimizer finding	Opt-in to AWS Compute Optimizer for recommendations.   Learn more
Subnet ID	subnet-0f6cc5e0d49e9385d (myprivatesubnet)
VPC ID	vpc-077de58648241d61a (my-demo-vpc)
Private IPv4 DNS	ip-10-0-2-181.us-east-2.compute.internal
IPv6 address	-

## 4- Then we create Internet Gateway, Route table , Nat Gateway

### IGW

The screenshot displays the AWS Management Console's 'Internet gateways' page. The left sidebar shows navigation options like 'VPC Dashboard', 'EC2 Global View', 'Filter by VPC', 'VIRTUAL PRIVATE CLOUD', 'Your VPCs', 'Subnets', 'Route Tables', 'Internet Gateways', 'Egress Only Internet Gateways', 'DHCP Options Sets', 'Elastic IPs', 'Managed Prefix Lists', 'Endpoints', 'Endpoint Services', 'NAT Gateways', 'Peering Connections', and 'SECURITY'. The main content area shows a list of internet gateways. The gateway 'mydemoIGW' with ID 'igw-01120c7f18e0f5d90' is selected. Below the list, the details for this gateway are shown, including its state (Attached), VPC ID (vpc-077de58648241d61a), and owner (697054457294).

Name	Internet gateway ID	State	VPC ID	Owner
mydemoIGW	igw-01120c7f18e0f5d90	Attached	vpc-077de58648241d61a   my-demo-...	697054457294
-	igw-05796e6d	Attached	vpc-c4d0baaf	697054457294

**igw-01120c7f18e0f5d90 / mydemoIGW**

**Details**

Property	Value
Internet gateway ID	igw-01120c7f18e0f5d90
State	Attached
VPC ID	vpc-077de58648241d61a   my-demo-vpc
Owner	697054457294

AWS
Servers ▼
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Aya Kamal ▼
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New VPC Experience  
Tell us what you think

VPC Dashboard

EC2 Global View New

Filter by VPC:

Select a VPC

### Route tables (1/4) Info

Actions ▼
Create route table

	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC	Owner ID
<input checked="" type="checkbox"/>	RTPublic	rtb-0b9bf30bdc51897d6	subnet-0b0c33adb1aa8661e / mypublicsubnet	-	No	vpc-077de58648241d61a   my-dev-vpc	697054457294
<input type="checkbox"/>	-	rtb-0dcee9f24a437bc4c	-	-	Yes	vpc-077de58648241d61a   my-dev-vpc	697054457294
<input type="checkbox"/>	-	rtb-fa4a7891	-	-	Yes	vpc-c4d0baaf	697054457294
<input type="checkbox"/>	RTPrivate	rtb-006170ee0c2cb6231	subnet-0f6cc5e0d49e93...	-	No	vpc-077de58648241d61a   my-dev-vpc	697054457294

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**rtb-0b9bf30bdc51897d6 / RTPublic**

Details
Routes
Subnet associations
Edge associations
Route propagation
Tags

#### Details

<p>Route table ID</p> <p> rtb-0b9bf30bdc51897d6</p> <p>VPC</p> <p><a href="#">vpc-077de58648241d61a</a> / my-dev-vpc</p>	<p>Main</p> <p> No</p> <p>Owner ID</p> <p> 697054457294</p>	<p>Explicit subnet associations</p> <p><a href="#">subnet-0b0c33adb1aa8661e / mypublicsubnet</a></p>	<p>Edge associations</p> <p>-</p>
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# NAT

The screenshot shows the AWS Management Console interface for NAT gateways. The left sidebar contains navigation links for VPC services and NAT Gateways. The main content area shows a table of NAT gateways with columns for Name, NAT gateway ID, Connectivity type, State, State message, Elastic IP address, and Private IP address. A single gateway named 'mynat' is listed with ID 'nat-0d30f56476148123c' and is in an 'Available' state. Below the table, the details for this gateway are expanded, showing its connectivity type as 'Public', state as 'Available', and associated VPC and subnets.

Name	NAT gateway ID	Connectivity...	State	State message	Elastic IP address	Private IP address
mynat	nat-0d30f56476148123c	Public	Available	-	3.136.64.225	10.0.1.29

**Details**

NAT gateway ID	nat-0d30f56476148123c	Connectivity type	Public	State	Available	State message	-
Elastic IP address	3.136.64.225	Private IP address	10.0.1.29	Network interface ID	eni-0f0e36b4cc9e07fc5	VPC	vpc-077de58648241d61a / my-demo-vpc
Subnet	subnet-0b0c33adb1aa8661e / mypublicsubnet	Created	2021/09/26 17:55 GMT+2	Deleted	-		

## 5- Connecting to public server

```
Last login: Mon Oct 4 10:19:30 2021 from ec2-3-16-146-2.us-east-2.compute.amazonaws.com

 _ _ | _ | _ |
 _ _ | _ | _ | Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
12 package(s) needed for security, out of 36 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-10-0-1-42 ~]$
```

i-0a66e017255315664 (Public\_App)

Public IPs: 18.117.117.109 Private IPs: 10.0.1.42

## Then connecting from public to private

```
Last login: Mon Oct  4 23:31:22 2021 from ec2-3-16-146-0.us-east-2.compute.amazonaws.com
```

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

```
https://aws.amazon.com/amazon-linux-2/  
12 package(s) needed for security, out of 36 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-10-0-1-42 ~]$ sudo su  
[root@ip-10-0-1-42 ec2-user]# ls  
PrivateSSH  
[root@ip-10-0-1-42 ec2-user]# cd PrivateSSH  
[root@ip-10-0-1-42 PrivateSSH]# ls  
Database_Server.pem PrivateIP README.md  
[root@ip-10-0-1-42 PrivateSSH]# chmod 400 Database_Server.pem  
[root@ip-10-0-1-42 PrivateSSH]# ssh -i "Database_Server.pem" ec2-user@10.0.2.181  
Last login: Mon Oct  4 10:21:31 2021 from 10.0.1.42
```

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

```
https://aws.amazon.com/amazon-linux-2/  
1 package(s) needed for security, out of 1 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-10-0-2-181 ~]$ █
```

i-0a66e017255315664 (Public\_App)

Public IPs: 18.117.117.109    Private IPs: 10.0.1.42