

Details of the resources we created:

VPC	vpc-05ca38fa9932048be
PUBLIC SUBNET	subnet-014b594d37f65b62a
PRIVATE SUBNET	subnet-04c0c1cc2f3d82b20
WEB APP INSTANCE : i-0086f53580f20ced6	63.32.152.192 (elastic PUBLIC IP)
DB INSTANCE:i-02ce4a964255c7104	10.0.2.196 (PRIVATE IP)
SECURITY GROUPS WEB APP	sg_appserver_group17
SECURITY GROUP DB	sg_dbserver_group17
ROUTING TABLE PUBLIC	rtb-01b14c60ae18bd95a
ROUTING TABLE PRIVATE	rtb-0ee8bfafec68903e6
IGW	igw-094069815fc509734
NAT	nat-055beb471041e55fb

1 Resource preparation

1.1 Creating a VPC and EC2

Create a VPC with network segment range 10.0.0.0/16, my id [vpc-05ca38fa9932048be]

Create two subnets, 10.0.1.0/24 for server, only server can directly access the public network, 10.0.2.0/24 for database

Create two EC2 instances and bind them to the two subnets.

1.2 Creating Internet Gateways

Create gateways and bind them to VPC

Internet gateways (1) Info						Refresh	Actions	Create internet gateway
<input type="text" value="Search"/>								
VPC ID : vpc-05ca38fa9932048be X						Clear filters		
						< 1 > Settings		
<input type="checkbox"/>	Name	Internet gateway ID	State	VPC ID	Owner			
<input type="checkbox"/>	ig_group17	igw-094069815fc509734	Attached	vpc-05ca38fa9932048be	5332671666			

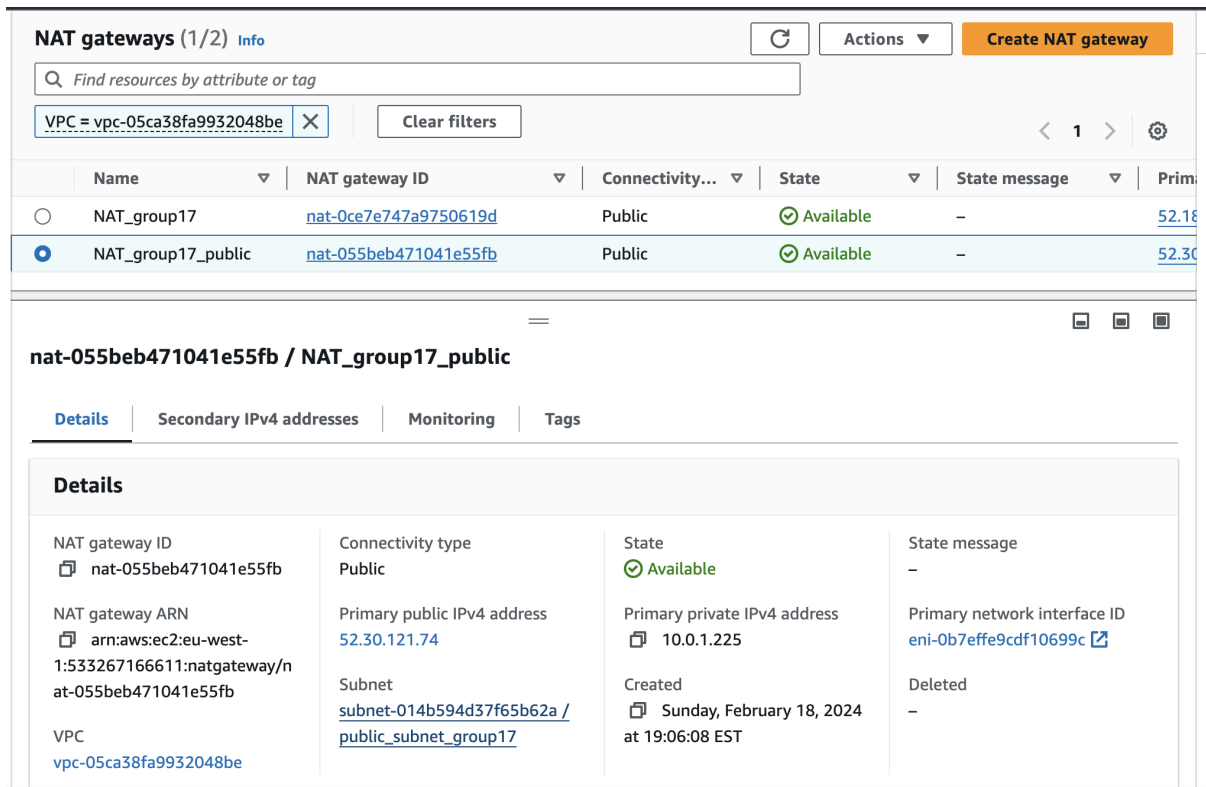
Supplementary:** Internet Gateway:**

- The Internet Gateway is a horizontally scalable, highly available VPC component that allows resources in the public subnet (e.g., EC2 instances) to communicate bi-directionally with the Internet.

- It is used to provide direct Internet access to instances in the public subnet, meaning that these instances can receive traffic directly from the Internet (if allowed by security groups and network ACLs) and send traffic directly to the Internet.
- The Internet gateway does not perform address translation (NAT) on incoming or outgoing traffic.

1.3 Creating a NAT Gateway

To select a public subnet for placement of a NAT gateway



NAT gateways (1/2) Info

Find resources by attribute or tag

VPC = vpc-05ca38fa9932048be X Clear filters

	Name	NAT gateway ID	Connectivity...	State	State message	Prim
<input type="radio"/>	NAT_group17	nat-0ce7e747a9750619d	Public	Available	-	52.18
<input checked="" type="radio"/>	NAT_group17_public	nat-055beb471041e55fb	Public	Available	-	52.30

nat-055beb471041e55fb / NAT_group17_public

Details Secondary IPv4 addresses Monitoring Tags

Details

NAT gateway ID nat-055beb471041e55fb	Connectivity type Public	State Available	State message -
NAT gateway ARN arn:aws:ec2:eu-west-1:533267166611:natgateway/nat-055beb471041e55fb	Primary public IPv4 address 52.30.121.74	Primary private IPv4 address 10.0.1.225	Primary network interface ID eni-0b7effe9cdf10699c
VPC vpc-05ca38fa9932048be	Subnet subnet-014b594d37f65b62a / public_subnet_group17	Created Sunday, February 18, 2024 at 19:06:08 EST	Deleted -

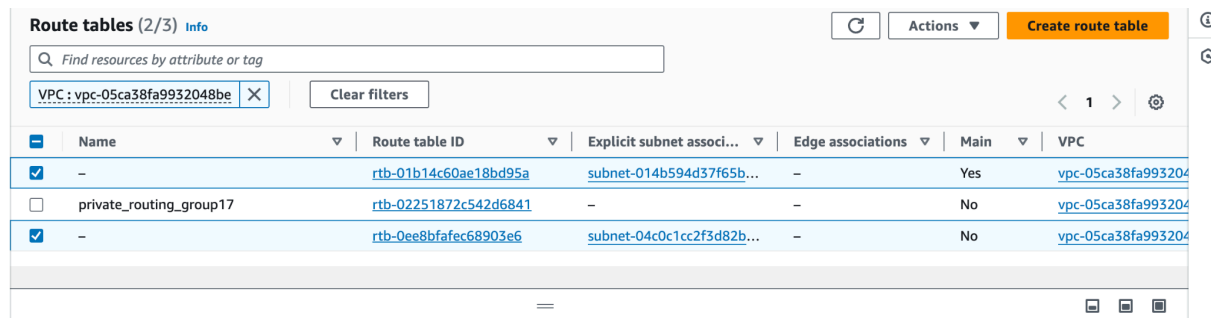
Supplementary:** NAT Gateway (NAT Gateway):**

- A NAT gateway is a service that allows instances in a private subnet to access the Internet or other AWS services while preventing the Internet from directly accessing those instances.
- It is used to provide instances in a private subnet with the ability to egress traffic to the Internet while keeping those instances from having direct access to the Internet.
- The NAT gateway performs address translation (NAT), which means that instances in the private subnet use the IP address of the NAT gateway to communicate with the Internet.

1.4 Configuring the Routing Table

1. for the public subnet, add a routing rule with destination 0.0.0.0/0, targeting an Internet gateway
2. for the private subnet, add a routing rule with destination 0.0.0.0/0, targeting the NAT gateway
- On the Routing Table page, select the Subnet Associations tab.

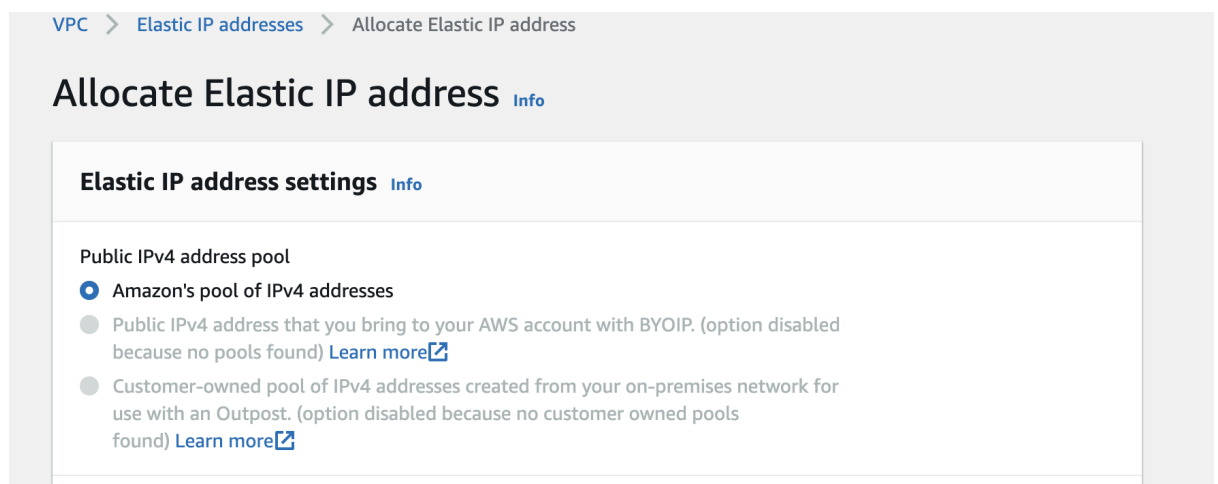
3. Associate the routing table to subnets



	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
<input checked="" type="checkbox"/>	-	rtb-01b14c60ae18bd95a	subnet-014b594d37f65b...	-	Yes	vpc-05ca38fa993204
<input type="checkbox"/>	private_routing_group17	rtb-02251872c542d6841	-	-	No	vpc-05ca38fa993204
<input checked="" type="checkbox"/>	-	rtb-0ee8bfafe68903e6	subnet-04c0c1cc2f3d82b...	-	No	vpc-05ca38fa993204

1.5 Configuring public ip

Bind to the server's public ip, so that you can access the server instance from the outside world, and access the database through the server.



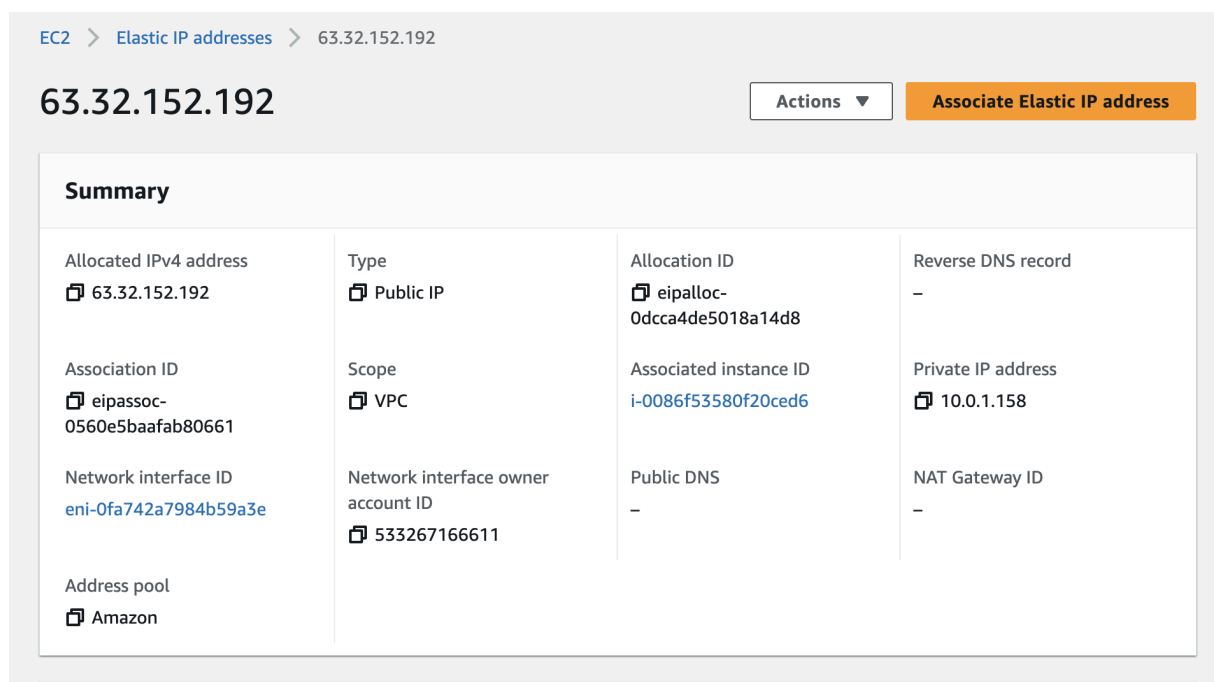
VPC > Elastic IP addresses > Allocate Elastic IP address

Allocate Elastic IP address Info

Elastic IP address settings Info

Public IPv4 address pool

- ☒ Amazon's pool of IPv4 addresses
- ☐ Public IPv4 address that you bring to your AWS account with BYOIP. (option disabled because no pools found) [Learn more](#)
- ☐ Customer-owned pool of IPv4 addresses created from your on-premises network for use with an Outpost. (option disabled because no customer owned pools found) [Learn more](#)



EC2 > Elastic IP addresses > 63.32.152.192

63.32.152.192

Actions Associate Elastic IP address

Summary

Allocated IPv4 address 63.32.152.192	Type Public IP	Allocation ID eipalloc-0dcca4de5018a14d8	Reverse DNS record -
Association ID eipassoc-0560e5baafab80661	Scope VPC	Associated instance ID i-0086f53580f20ced6	Private IP address 10.0.1.158
Network interface ID eni-0fa742a7984b59a3e	Network interface owner account ID 533267166611	Public DNS -	NAT Gateway ID -
Address pool Amazon			

Commands for MYSQL:

```
sudo wget https://dev.mysql.com/get/mysql80-community-release-el9-5.noarch.rpm  
sudo yum localinstall mysql80-community-release-el9-5.noarch.rpm  
sudo yum install mysql-community-server  
systemctl start mysqld.service
```