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STEP 1: BUILD 3 TIER AWS NETWORK VPC

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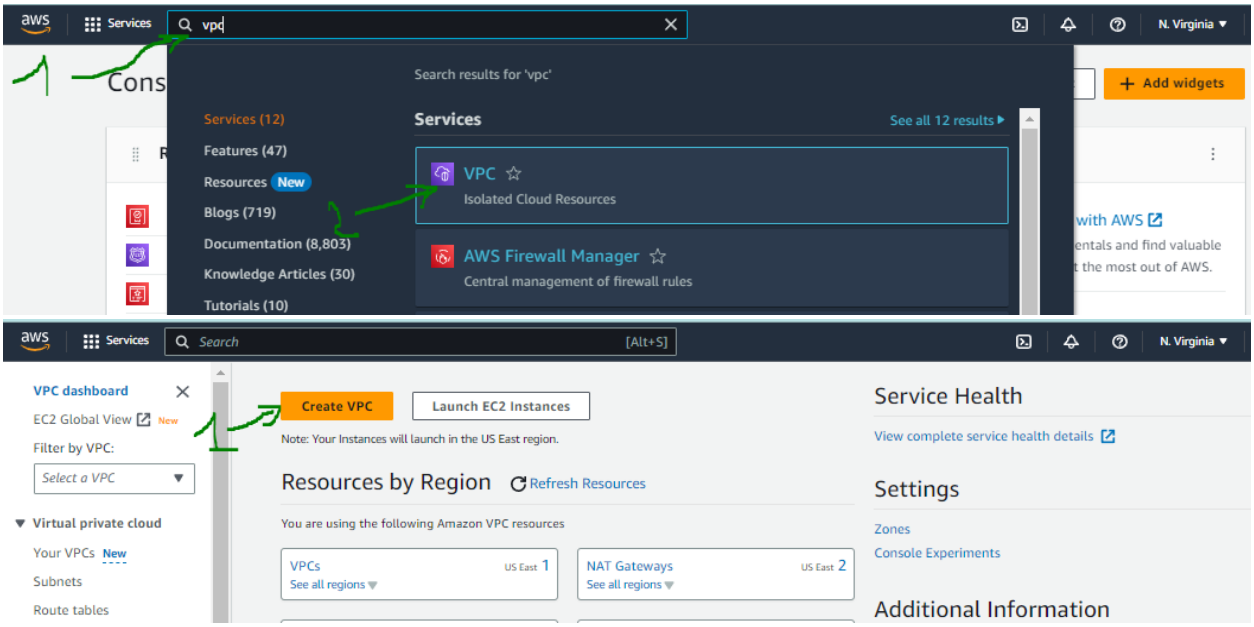
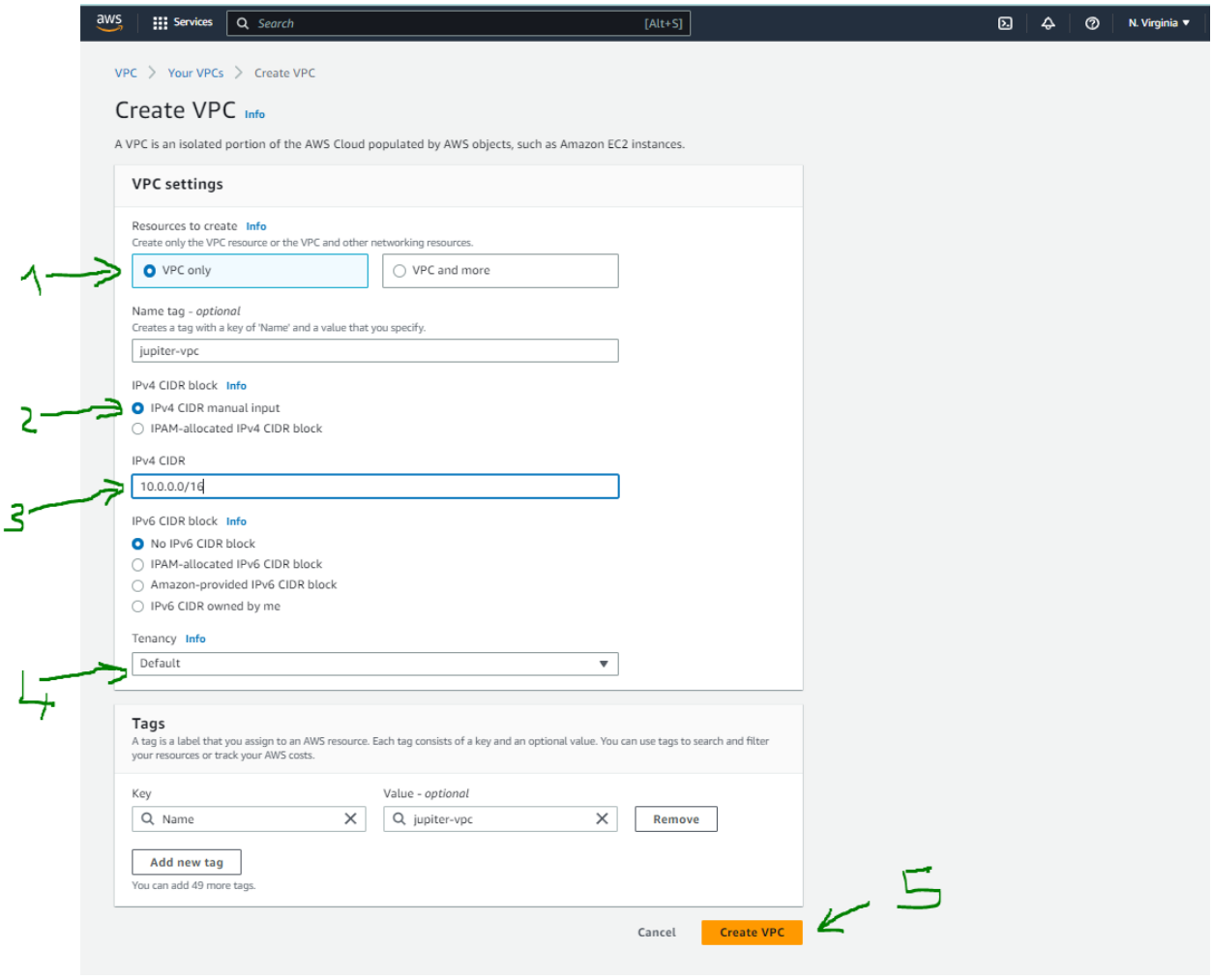
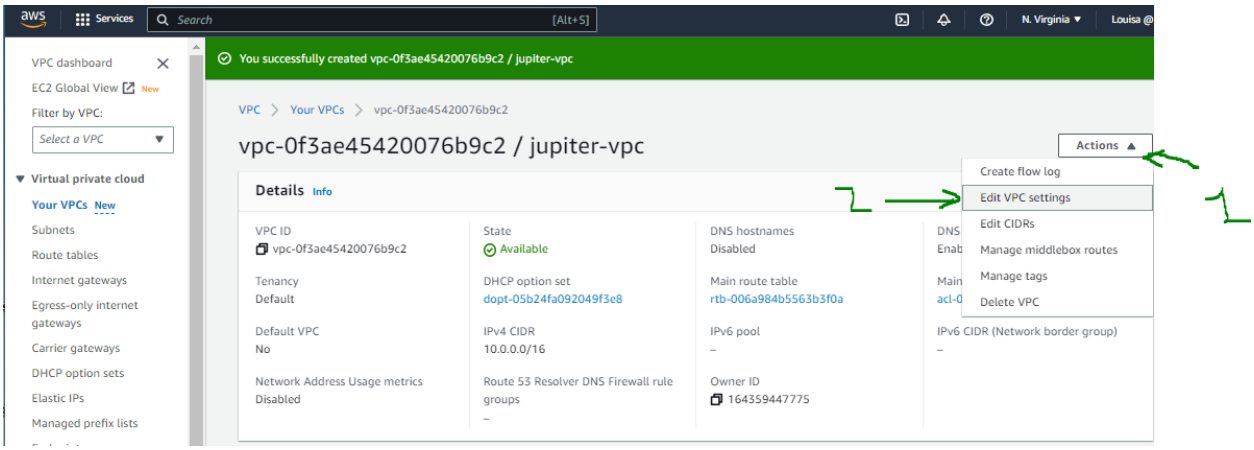
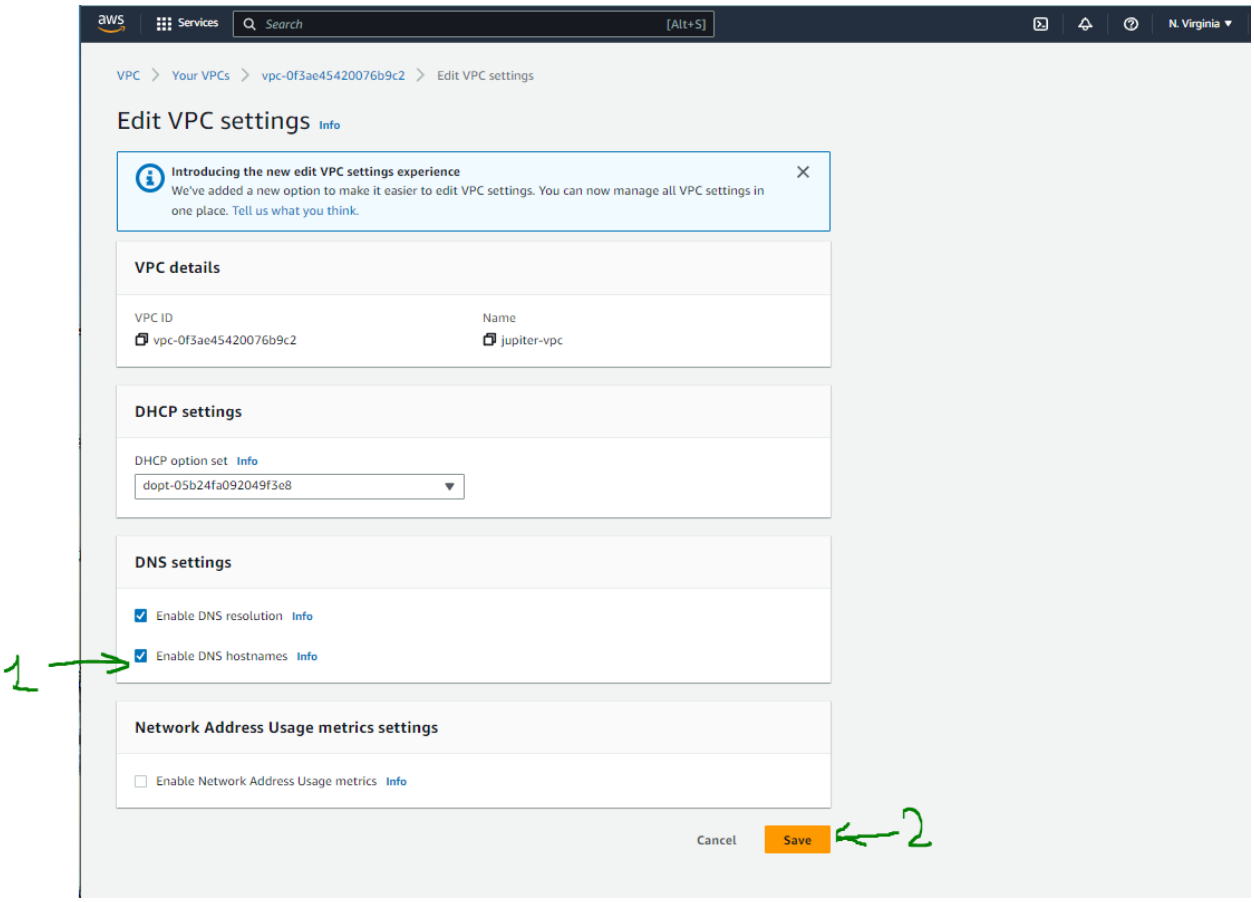
1. Create 01 VPC: **jupiter-vpc**

We have selected IPV4 CIDR to be **10.0.0.0/16** and the region is **us-east-1**

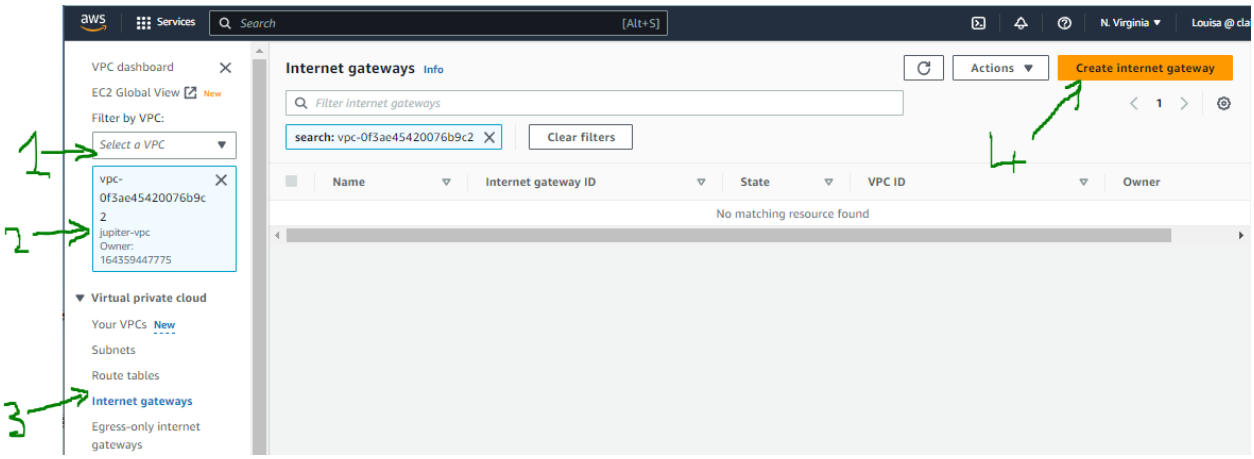


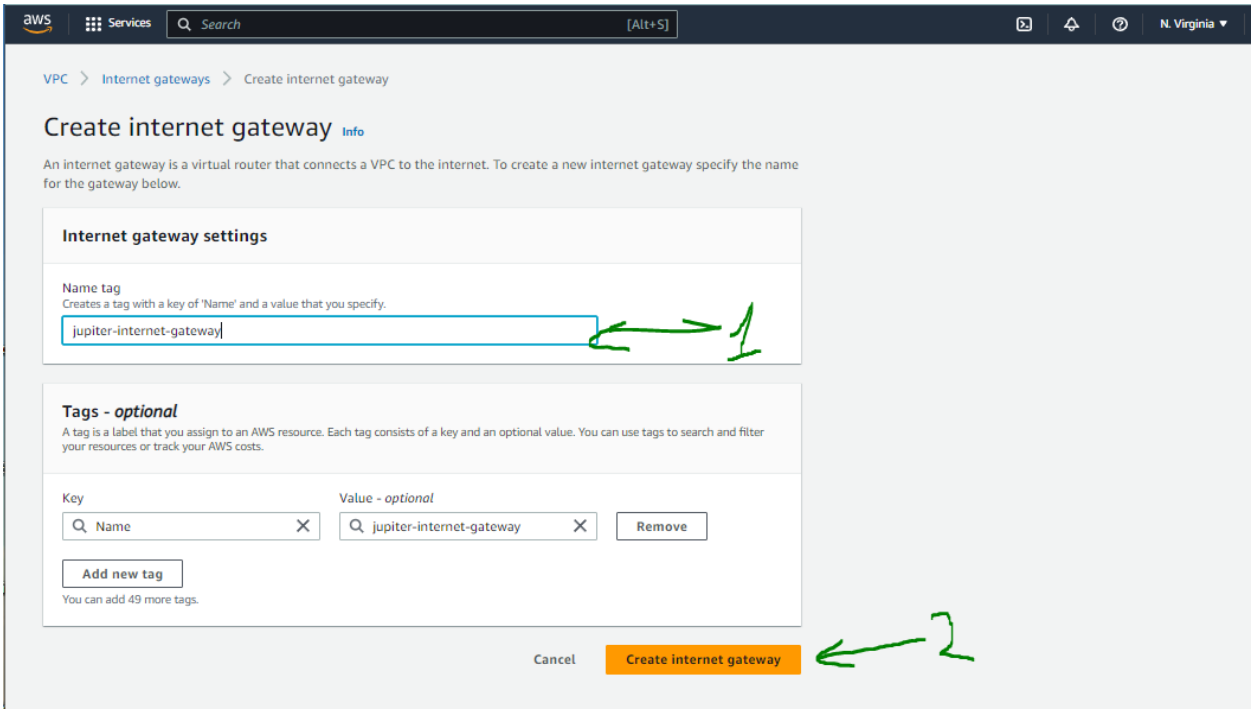

aws
Services
Search
[Alt+S]
N. Virginia
VPC > Your VPCs > Create VPC
Create VPC Info
A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.
VPC settings
Resources to create Info
Create only the VPC resource or the VPC and other networking resources.
VPC only
VPC and more
Name tag - optional
Creates a tag with a key of 'Name' and a value that you specify.
jupiter-vpc
IPv4 CIDR block Info
IPv4 CIDR manual input
IPAM-allocated IPv4 CIDR block
IPv4 CIDR
10.0.0.0/16
IPv6 CIDR block Info
No IPv6 CIDR block
IPAM-allocated IPv6 CIDR block
Amazon-provided IPv6 CIDR block
IPv6 CIDR owned by me
Tenancy Info
Default
Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.
Key
Value - optional
Name
jupiter-vpc
Remove
Add new tag
You can add 49 more tags.
Cancel
Create VPC
1
2
3
4
5

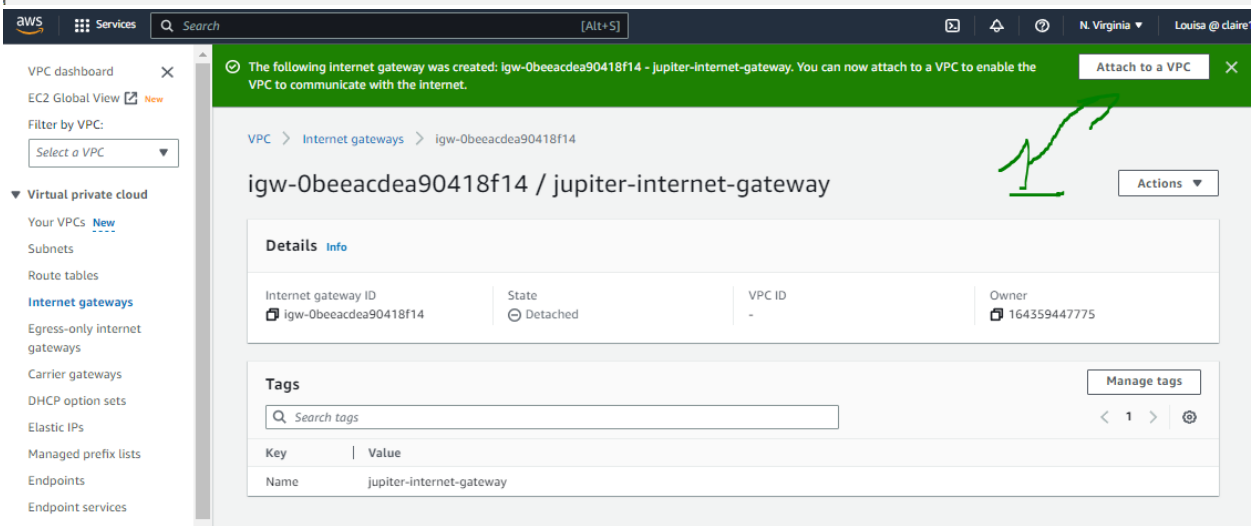

aws
Services
Search
[Alt+S]
N. Virginia
Louisa @
VPC dashboard
EC2 Global View New
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs New
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
You successfully created vpc-0f3ae45420076b9c2 / jupiter-vpc
VPC > Your VPCs > vpc-0f3ae45420076b9c2
vpc-0f3ae45420076b9c2 / jupiter-vpc
Actions
Create flow log
Edit VPC settings
Edit CIDRs
Manage middlebox routes
Manage tags
Delete VPC
Details Info
VPC ID
vpc-0f3ae45420076b9c2
State
Available
DNS hostnames
Disabled
Tenancy
Default
DHCP option set
dopt-05b24fa092049f3e8
Main route table
rtb-006a984b5563b3f0a
Default VPC
No
IPv4 CIDR
10.0.0.0/16
IPv6 pool
IPv6 CIDR (Network border group)
Network Address Usage metrics
Disabled
Route 53 Resolver DNS Firewall rule groups
Owner ID
164359447775
6
7

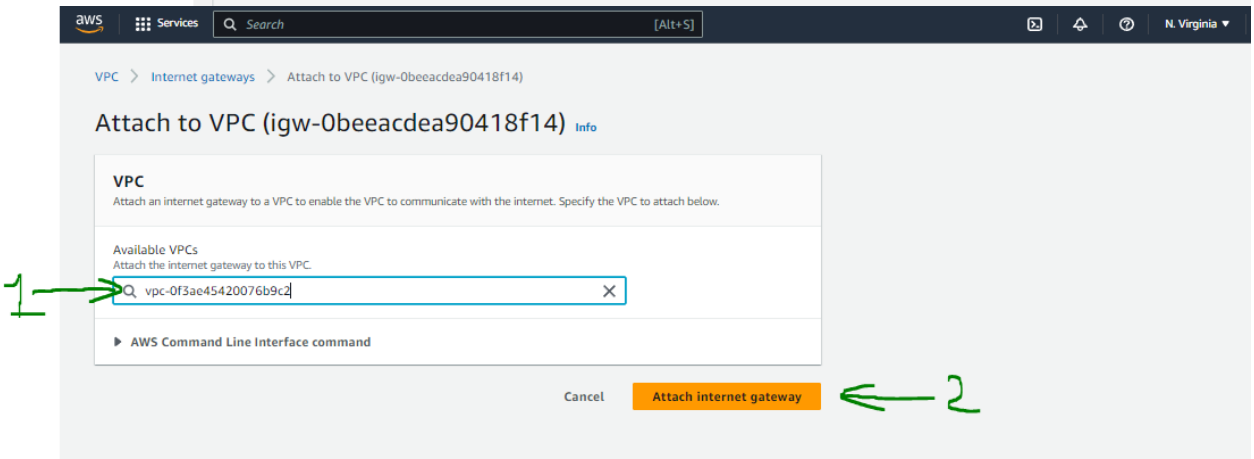


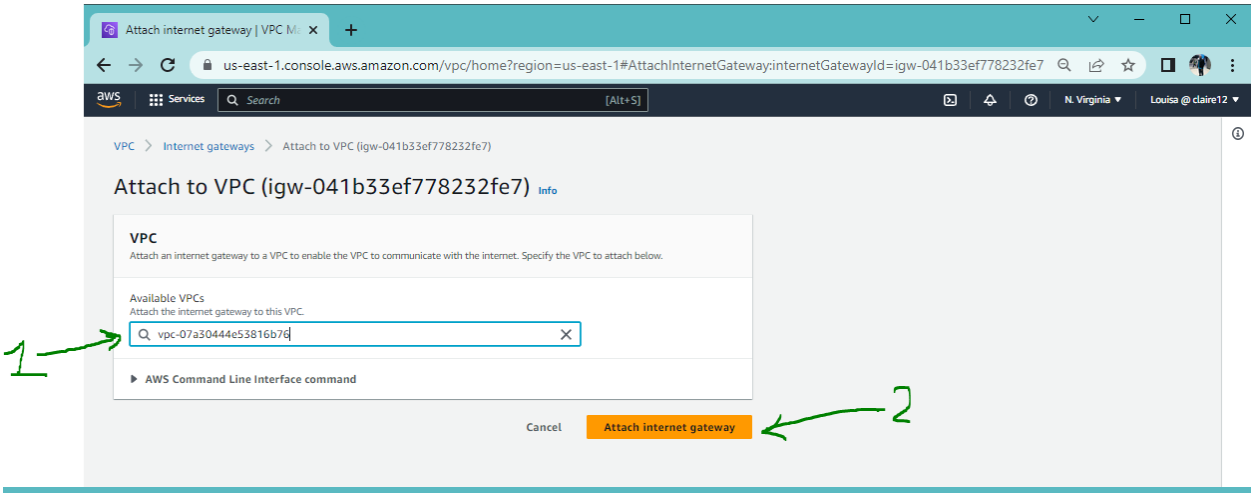
2. Create Internet Gateway: **jupiter-internet-gateway**
3. Attach the Internet Gateway **jupiter-internet-gateway** to the VPC **jupiter-vpc**

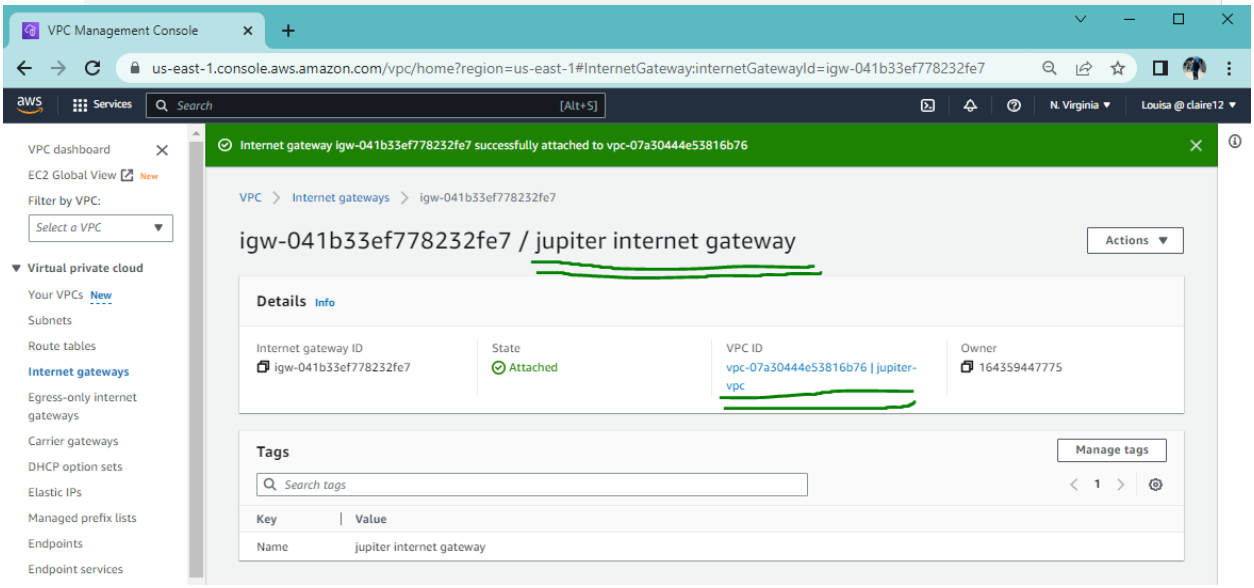



aws
Services
Search
[Alt+S]
N. Virginia
VPC > Internet gateways > Create internet gateway
Create internet gateway Info
An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.
Internet gateway settings
Name tag
Creates a tag with a key of 'Name' and a value that you specify.
jupiter-internet-gateway
1
Tags - optional
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.
Key
Value - optional
Name
jupiter-internet-gateway
Remove
Add new tag
You can add 49 more tags.
Cancel
Create internet gateway
2


aws
Services
Search
[Alt+S]
N. Virginia
Louisa @ claire
VPC dashboard
EC2 Global View New
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs New
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
The following Internet gateway was created: igw-0beeacdea90418f14 - jupiter-internet-gateway. You can now attach to a VPC to enable the VPC to communicate with the internet.
Attach to a VPC
1
VPC > Internet gateways > igw-0beeacdea90418f14
igw-0beeacdea90418f14 / jupiter-internet-gateway
Actions
Details Info
Internet gateway ID
igw-0beeacdea90418f14
State
Detached
VPC ID
-
Owner
164359447775
Tags
Manage tags
Search tags
1
Key
Value
Name
jupiter-internet-gateway


aws
Services
Search
[Alt+S]
N. Virginia
VPC > Internet gateways > Attach to VPC (igw-0beeacdea90418f14)
Attach to VPC (igw-0beeacdea90418f14) Info
VPC
Attach an internet gateway to a VPC to enable the VPC to communicate with the internet. Specify the VPC to attach below.
Available VPCs
Attach the internet gateway to this VPC.
1
vpc-0f3ae45420076b9c2
AWS Command Line Interface command
Cancel
Attach internet gateway
2

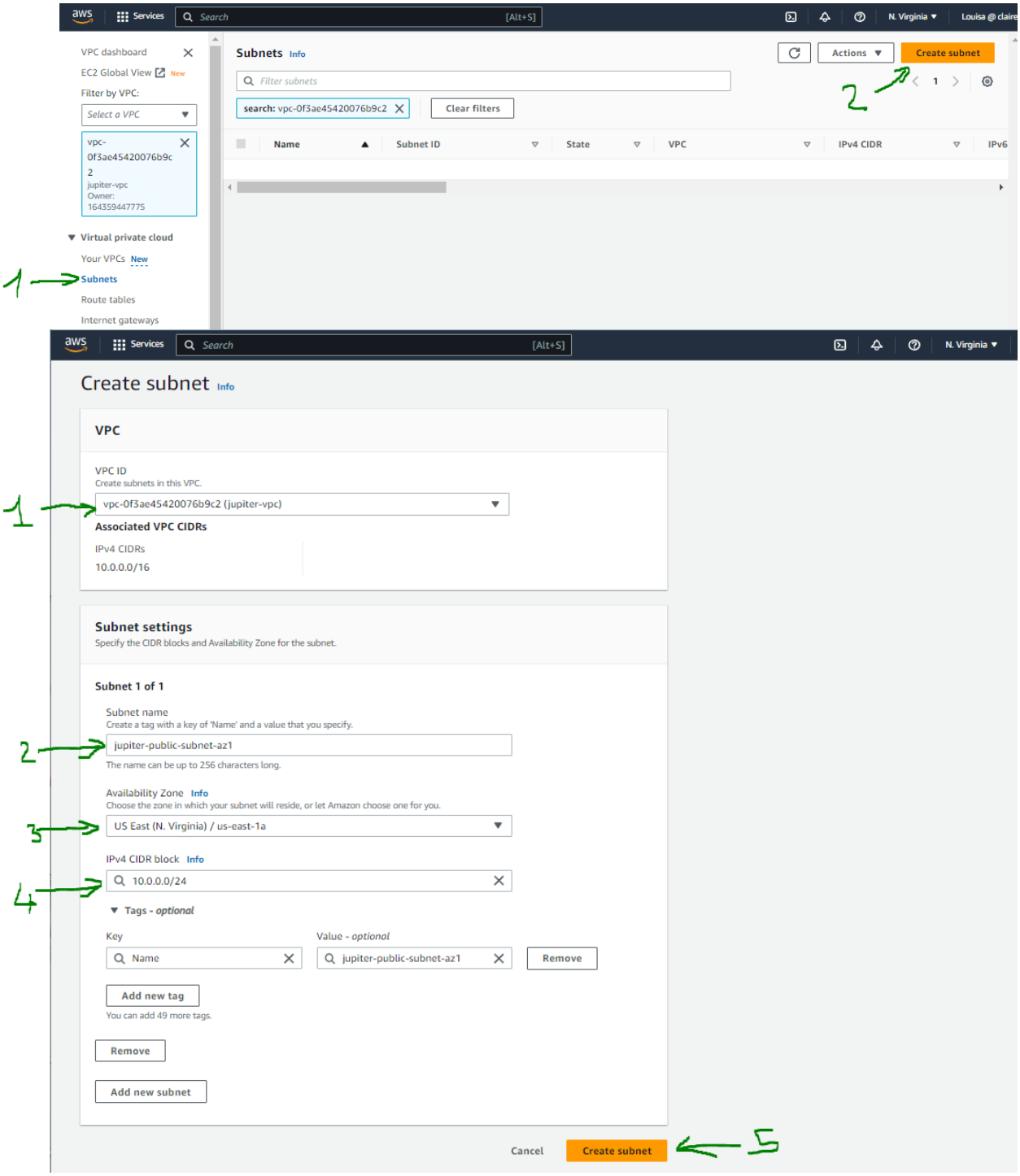


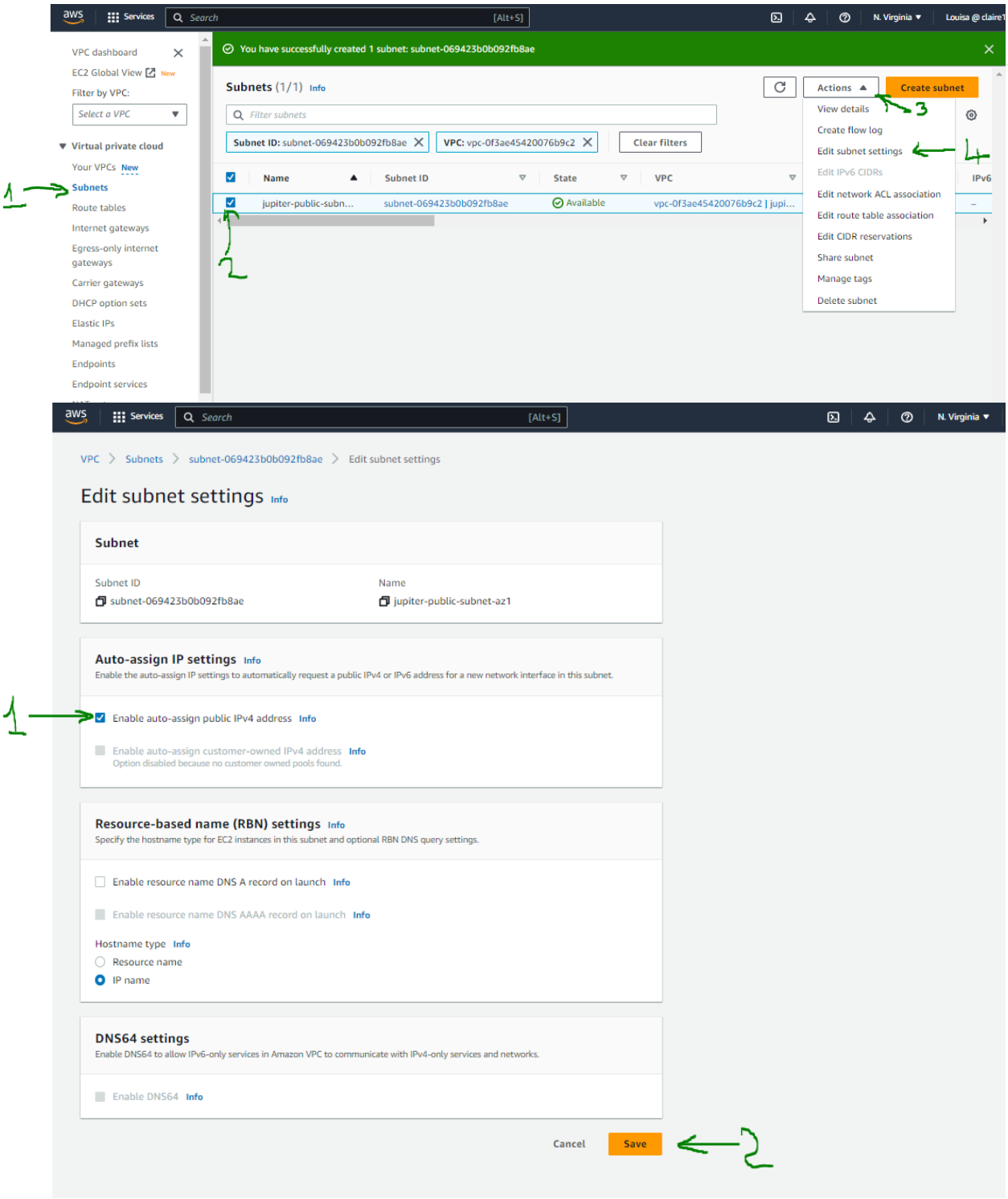


4. Create 02 public Subnets: **jupiter-public-subnet-az1** and **jupiter-public-subnet-az2**

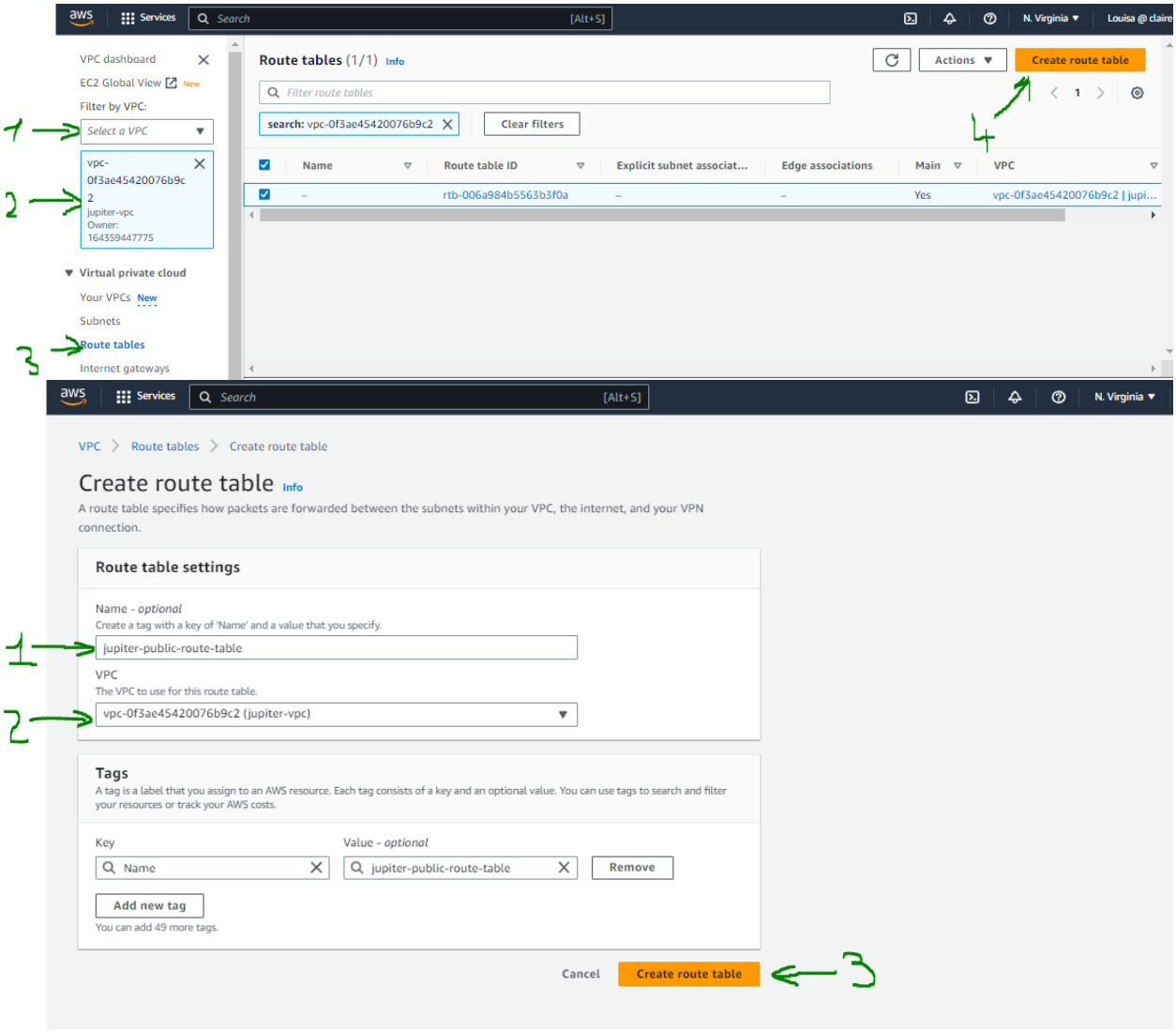
In the screenshots below you can see how we created **jupiter-public-subnet-az1** and assigned the subnet IPV4 CIDR **10.0.0.0/24.**
You can use this as example to create your 02 subnets:

jupiter-public-subnet-az1	**us-east-1a**	**10.0.0.0/24**
jupiter-public-subnet-az2	**us-east-1b**	**10.0.1.0/24**

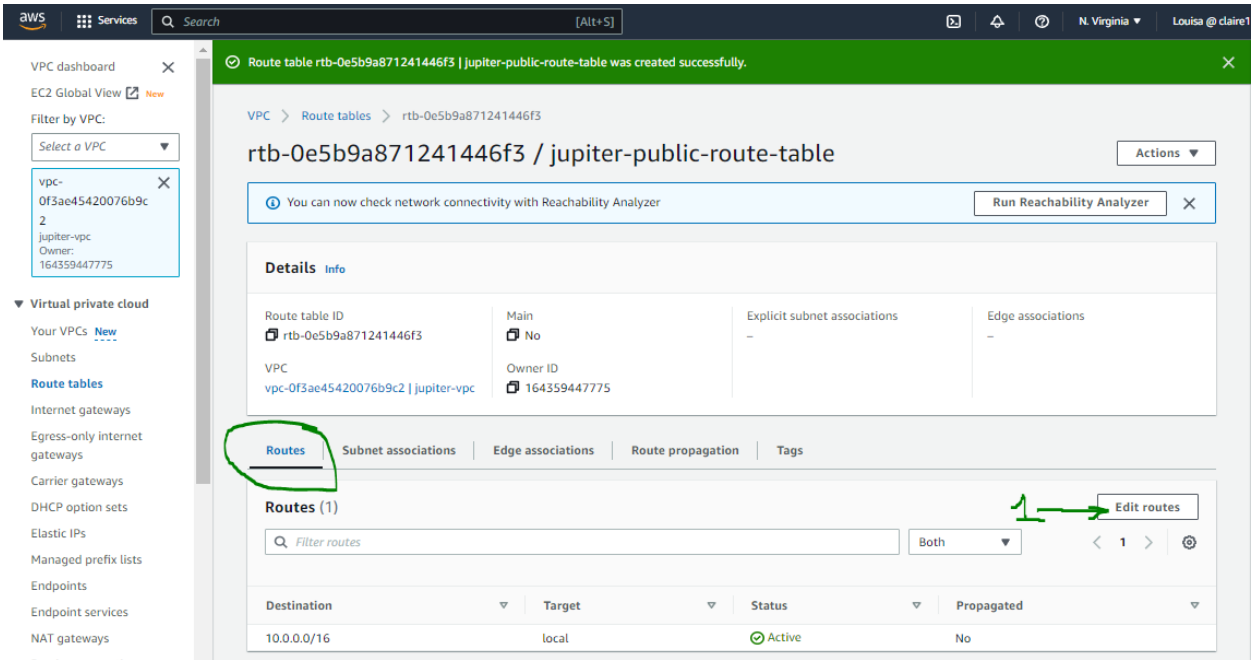

aws
Services
Search
[Alt+S]
N. Virginia
Louisa @ claire
VPC dashboard
EC2 Global View
New
Filter by VPC:
Select a VPC
vpc-0f3ae45420076b9c2
jupiter-vpc
Owner: 164359447775
Virtual private cloud
Your VPCs New
Subnets
Route tables
Internet gateways
1
Subnets Info
Filter subnets
search: vpc-0f3ae45420076b9c2
Clear filters
Actions
Create subnet
2
Name
Subnet ID
State
VPC
IPv4 CIDR
IPv6
Create subnet Info
VPC
VPC ID
Create subnets in this VPC.
vpc-0f3ae45420076b9c2 (jupiter-vpc)
Associated VPC CIDRs
IPv4 CIDRs
10.0.0.0/16
Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.
Subnet 1 of 1
Subnet name
Create a tag with a key of 'Name' and a value that you specify.
jupiter-public-subnet-az1
The name can be up to 256 characters long.
Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
US East (N. Virginia) / us-east-1a
IPv4 CIDR block Info
10.0.0.0/24
Tags - optional
Key
Value - optional
Name
jupiter-public-subnet-az1
Remove
Add new tag
You can add 49 more tags.
Remove
Add new subnet
Cancel
Create subnet
1
2
3
4
5

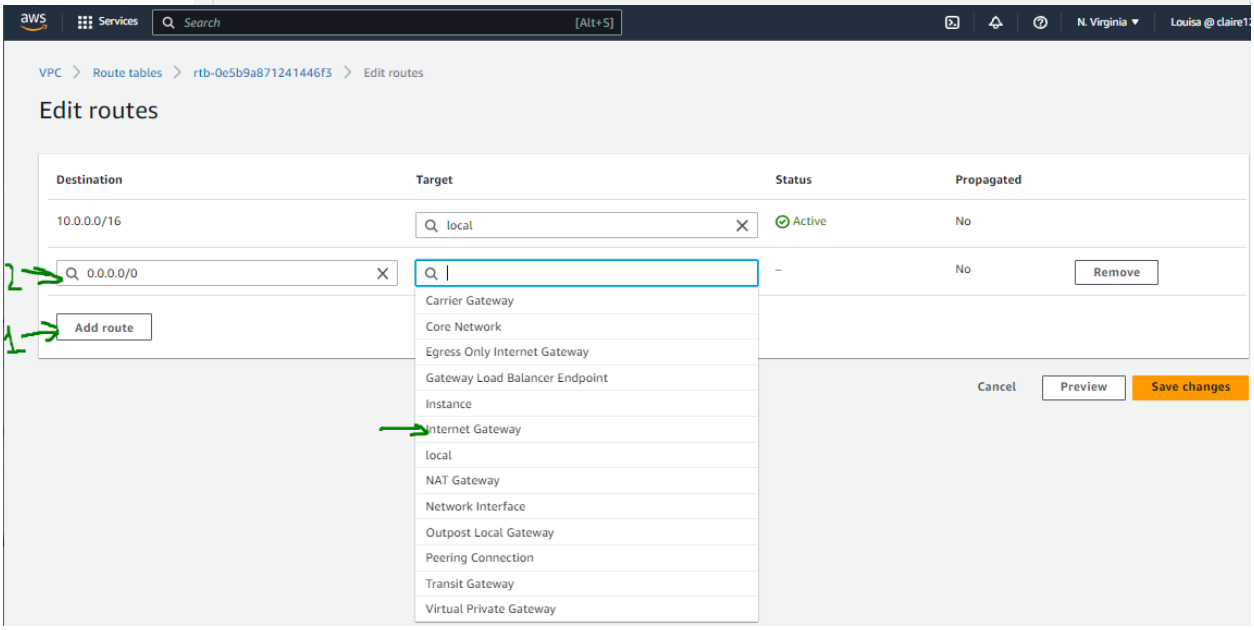


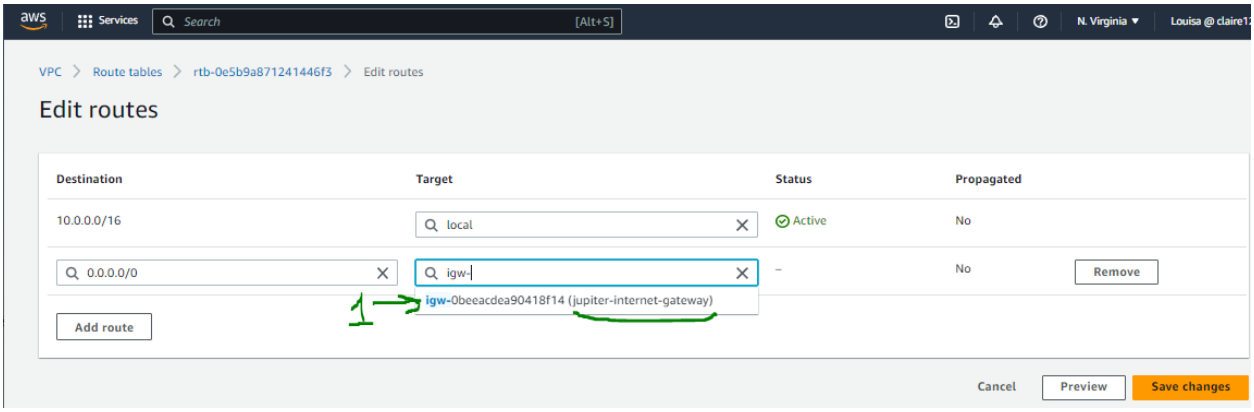
5. Create 01 Public Route Table: **jupiter-public-route-table**



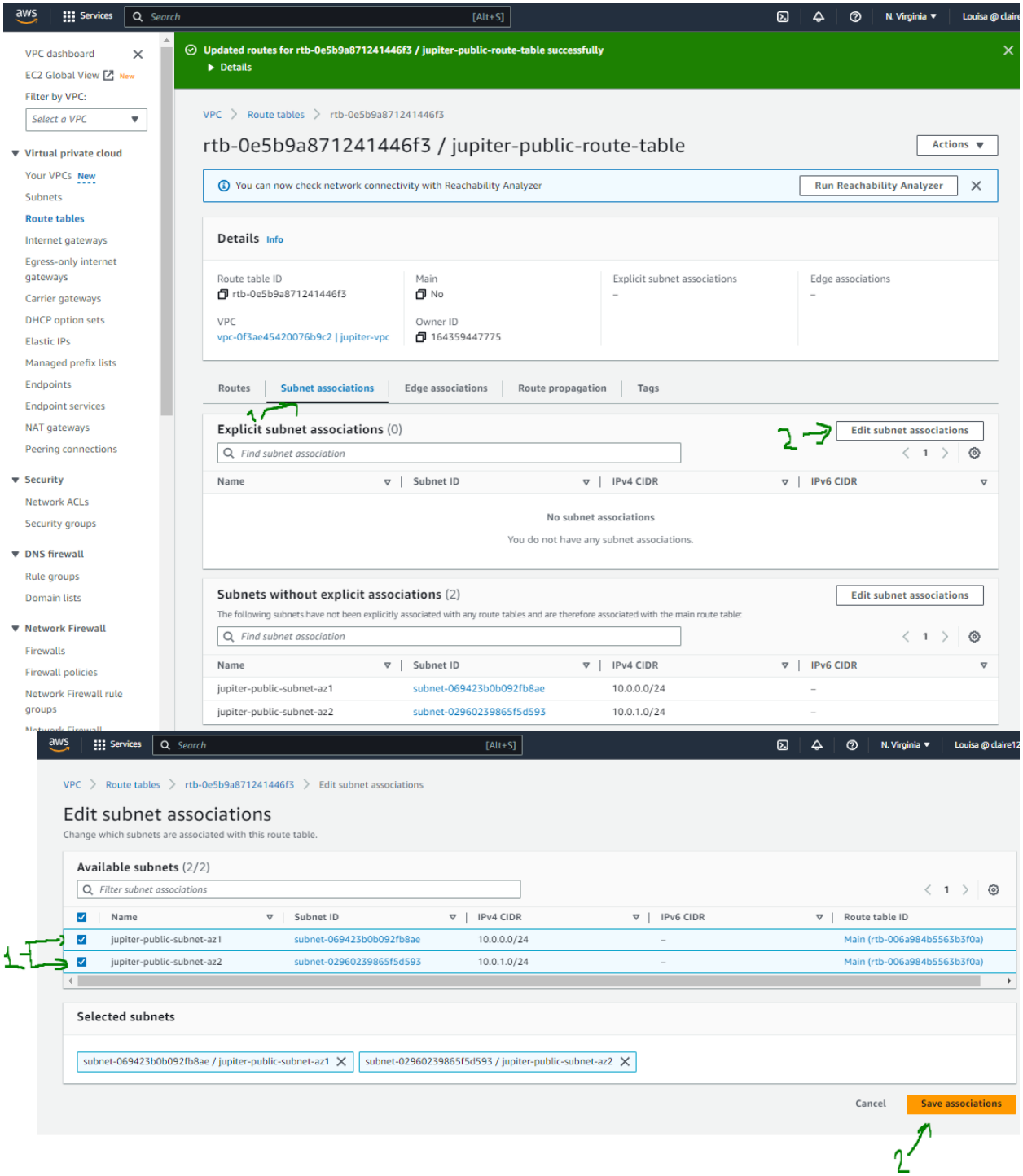
6. Add Public Route to the Public Route Table **jupiter-public-route-table**


Route table rtb-0e5b9a871241446f3 | jupiter-public-route-table was created successfully.
VPC dashboard
EC2 Global View
Filter by VPC:
Select a VPC
vpc-0f3ae45420076b9c2
jupiter-vpc
Owner: 164359447775
Virtual private cloud
Your VPCs New
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
Endpoints
Endpoint services
NAT gateways
VPC > Route tables > rtb-0e5b9a871241446f3
rtb-0e5b9a871241446f3 / jupiter-public-route-table
Actions
You can now check network connectivity with Reachability Analyzer
Run Reachability Analyzer
Details Info
Route table ID
rtb-0e5b9a871241446f3
Main
No
Explicit subnet associations
Edge associations
VPC
vpc-0f3ae45420076b9c2 | jupiter-vpc
Owner ID
164359447775
Routes
Subnet associations
Edge associations
Route propagation
Tags
Routes (1)
Edit routes
Filter routes
Both
Destination
Target
Status
Propagated
10.0.0.0/16
local
Active
No


VPC > Route tables > rtb-0e5b9a871241446f3 > Edit routes
Edit routes
Destination
Target
Status
Propagated
10.0.0.0/16
local
Active
No
0.0.0.0/0
No
Remove
Add route
Carrier Gateway
Core Network
Egress Only Internet Gateway
Gateway Load Balancer Endpoint
Instance
Internet Gateway
local
NAT Gateway
Network Interface
Outpost Local Gateway
Peering Connection
Transit Gateway
Virtual Private Gateway
Cancel
Preview
Save changes


VPC > Route tables > rtb-0e5b9a871241446f3 > Edit routes
Edit routes
Destination
Target
Status
Propagated
10.0.0.0/16
local
Active
No
0.0.0.0/0
igw-
No
Remove
igw-0beeacdea90418f14 (jupiter-internet-gateway)
Add route
Cancel
Preview
Save changes

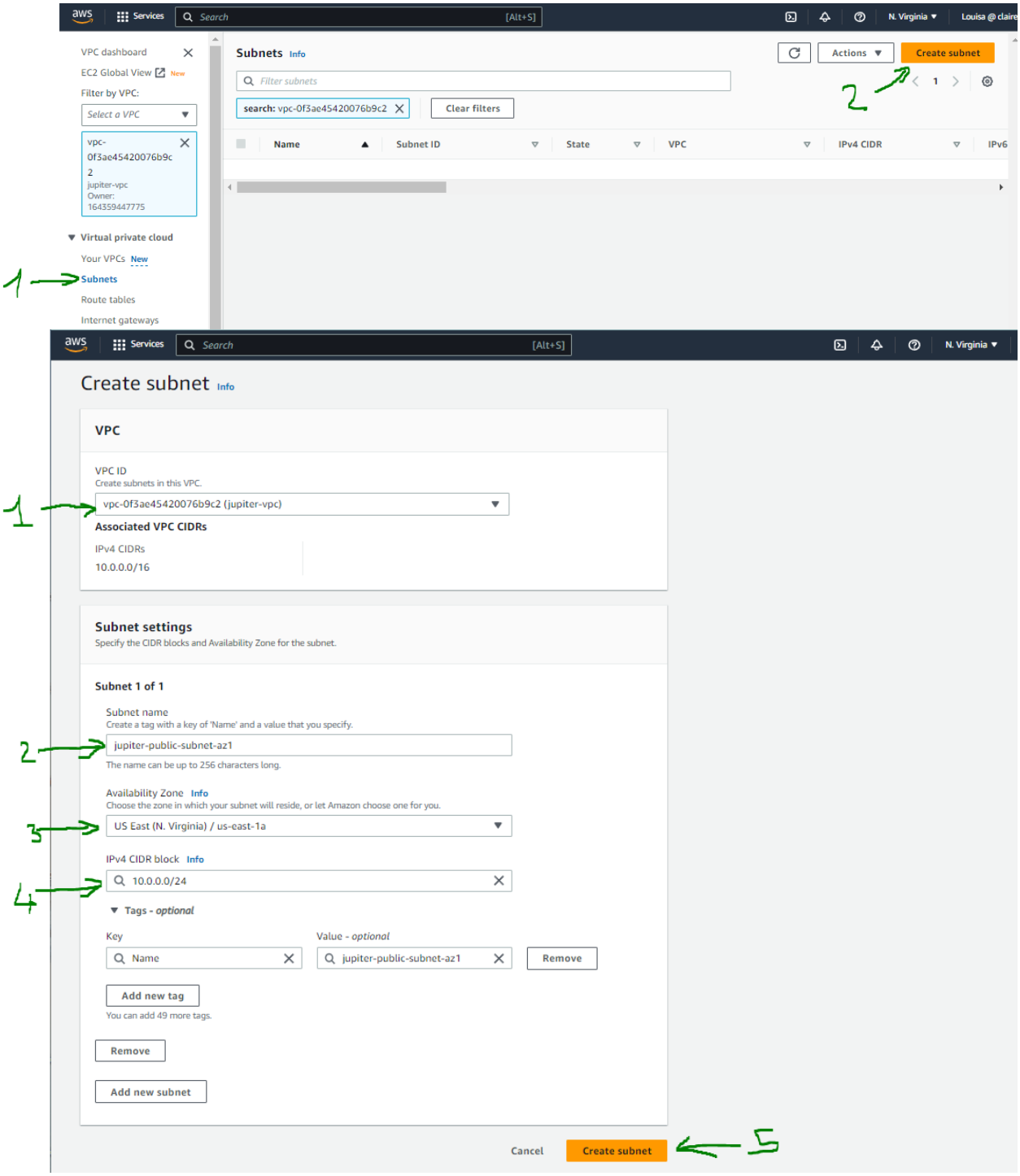
7. Associate the Public Subnets: **jupiter-public-subnet-az1** and **jupiter-public-subnet-az2** with the Public Route Table **jupiter-public-route-table**.



8. Create the Private Subnets:

jupiter-private-app-subnet-az1	**us-east-1a**	**10.0.2.0/24**
jupiter-private-app-subnet-az2	**us-east-1b**	**10.0.3.0/24**
jupiter-private-data-subnet-az1	**us-east-1a**	**10.0.4.0/24**
jupiter-private-data-subnet-az2	**us-east-1b**	**10.0.5.0/24**

Using the example of the screenshots below create all 04 private subnets in each az.


Services
Search
[Alt+S]
N. Virginia
Louisa @ claire
VPC dashboard
EC2 Global View
New
Filter by VPC:
Select a VPC
vpc-0f3ae45420076b9c2
jupiter-vpc
Owner: 164359447775
Virtual private cloud
Your VPCs New
Subnets
Route tables
Internet gateways
1
Subnets Info
Filter subnets
search: vpc-0f3ae45420076b9c2
Clear filters
Actions
Create subnet
2
Name
Subnet ID
State
VPC
IPv4 CIDR
IPv6
Create subnet Info
VPC
VPC ID
Create subnets in this VPC.
vpc-0f3ae45420076b9c2 (jupiter-vpc)
Associated VPC CIDRs
IPv4 CIDRs
10.0.0.0/16
Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.
Subnet 1 of 1
Subnet name
Create a tag with a key of 'Name' and a value that you specify.
jupiter-public-subnet-az1
The name can be up to 256 characters long.
Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
US East (N. Virginia) / us-east-1a
IPv4 CIDR block Info
10.0.0.0/24
Tags - optional
Key
Value - optional
Name
jupiter-public-subnet-az1
Remove
Add new tag
You can add 49 more tags.
Remove
Add new subnet
Cancel
Create subnet
1
2
3
4
5