

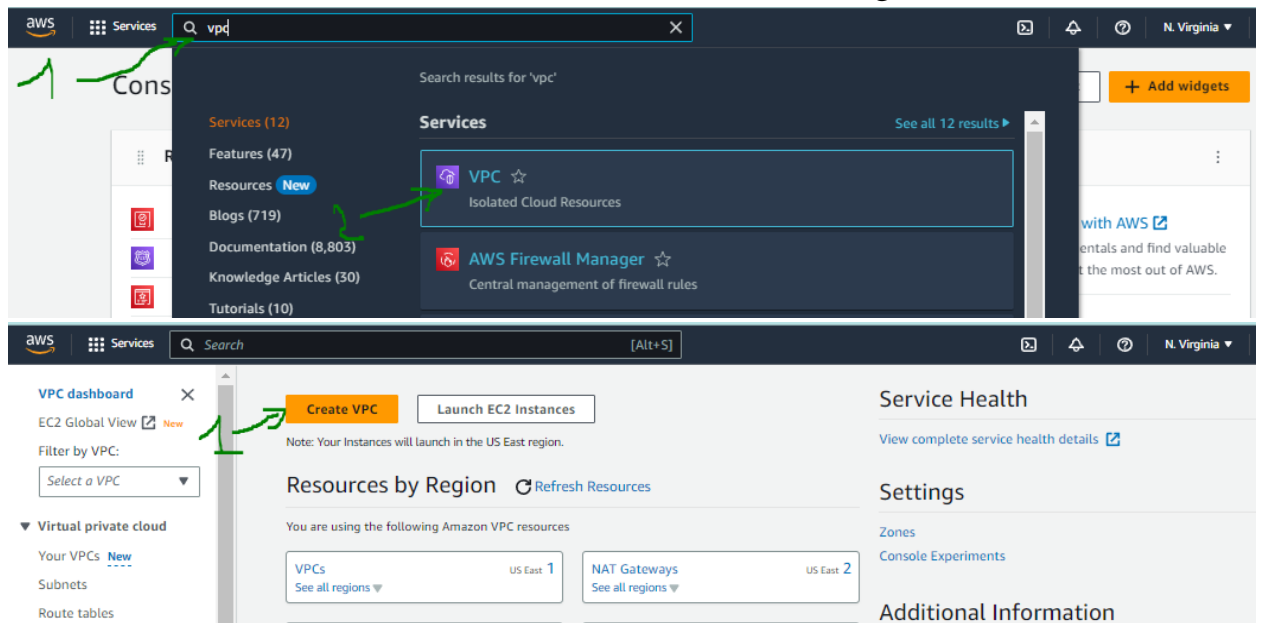
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## STEP 1: BUILD 3 TIER AWS NETWORK VPC

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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.

1 → ☒ VPC only ☐ VPC and more

Name tag - optional  
Creates a tag with a key of 'Name' and a value that you specify.  
jupiter-vpc

2 → IPv4 CIDR block [Info](#)  
☒ IPv4 CIDR manual input  
☐ IPAM-allocated IPv4 CIDR block

3 → 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](#)  
4 → 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

Q Name X Q jupiter-vpc X Remove

Add new tag

You can add 49 more tags.

Cancel **Create VPC** 5 →

aws Services Search [Alt+S] N. Virginia Louisa @

VPC dashboard X

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

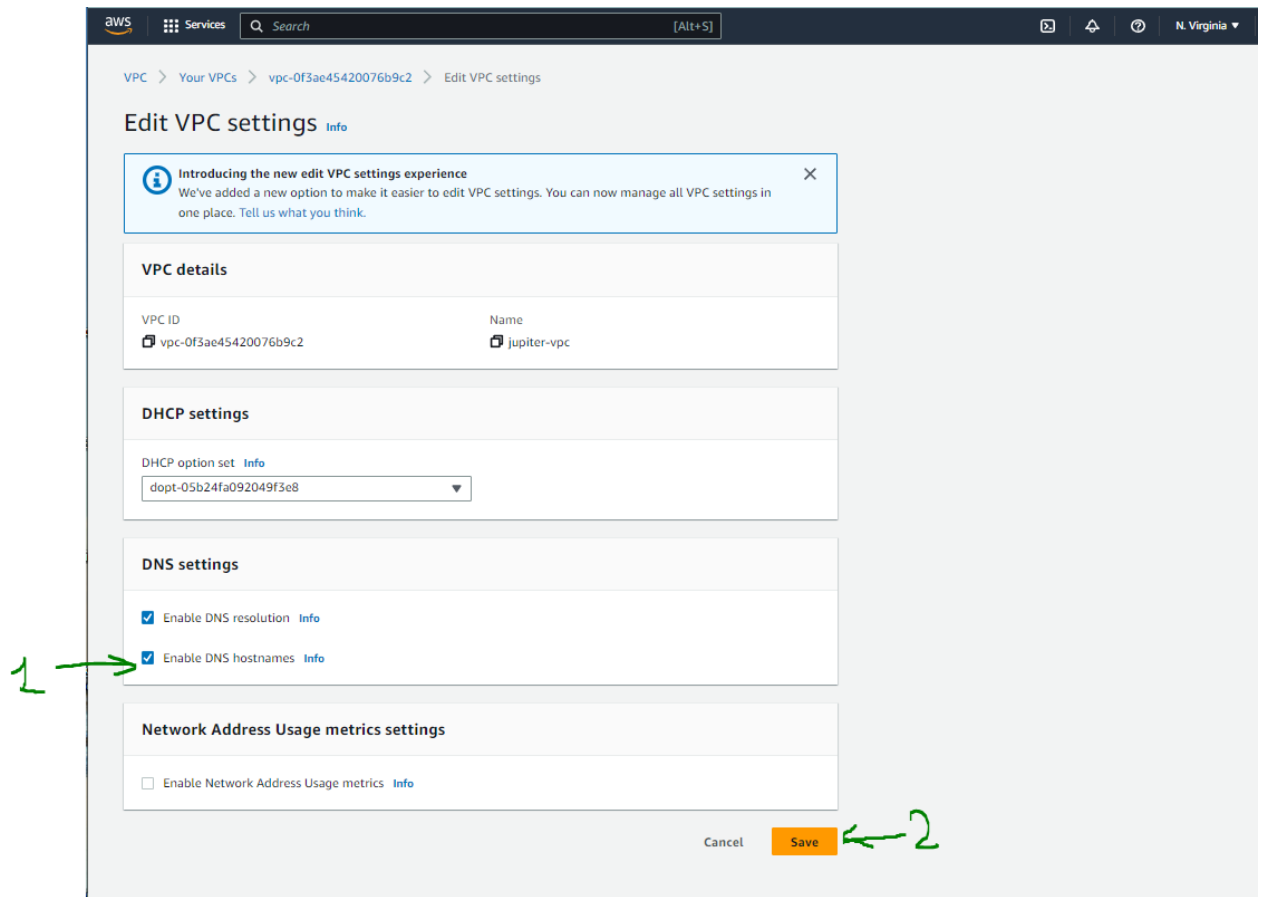
Details [Info](#)

VPC ID	State	DNS hostnames	DNS
vpc-0f3ae45420076b9c2	Available	Disabled	Enabled
Tenancy	DHCP option set	Main route table	Main
Default	dopt-05b24fa092049f3e8	rtb-006a984b5563b3f0a	acl-0
Default VPC	IPv4 CIDR	IPv6 pool	IPv6 CIDR (Network border group)
No	10.0.0.0/16	-	-
Network Address Usage metrics	Route 53 Resolver DNS Firewall rule groups	Owner ID	
Disabled	-	164359447775	

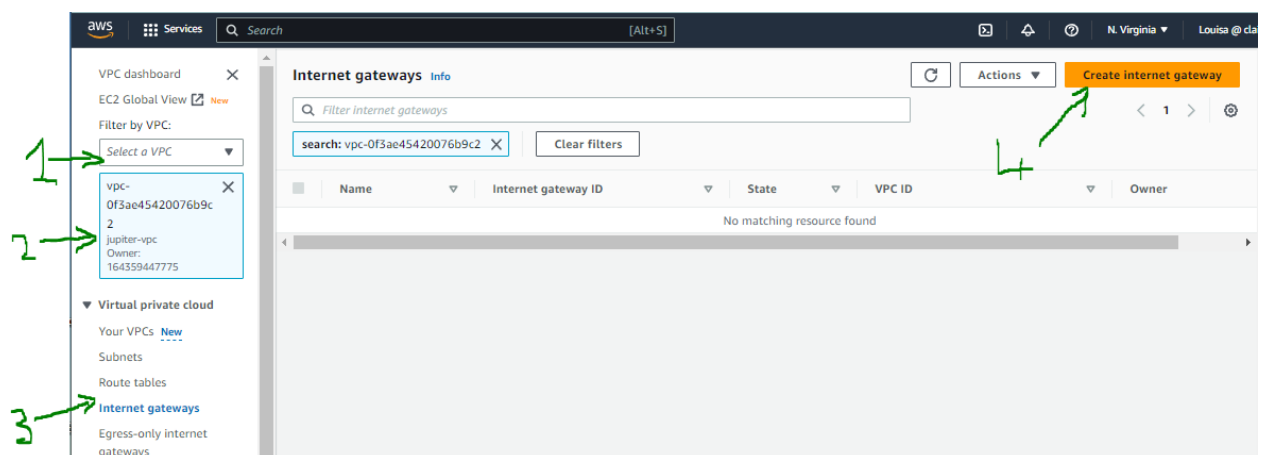
Actions

- Create flow log
- 2 → Edit VPC settings
- Edit CIDRs
- Manage middlebox routes
- Manage tags
- Delete VPC

1 →



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

### 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

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](#)

VPC > Internet gateways > igw-0beeacdea90418f14

## igw-0beeacdea90418f14 / jupiter-internet-gateway

Actions

### Details [Info](#)

Internet gateway ID	State	VPC ID	Owner
igw-0beeacdea90418f14	Detached	-	164359447775

### Tags

Search tags

Key	Value
Name	jupiter-internet-gateway

Manage tags

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.

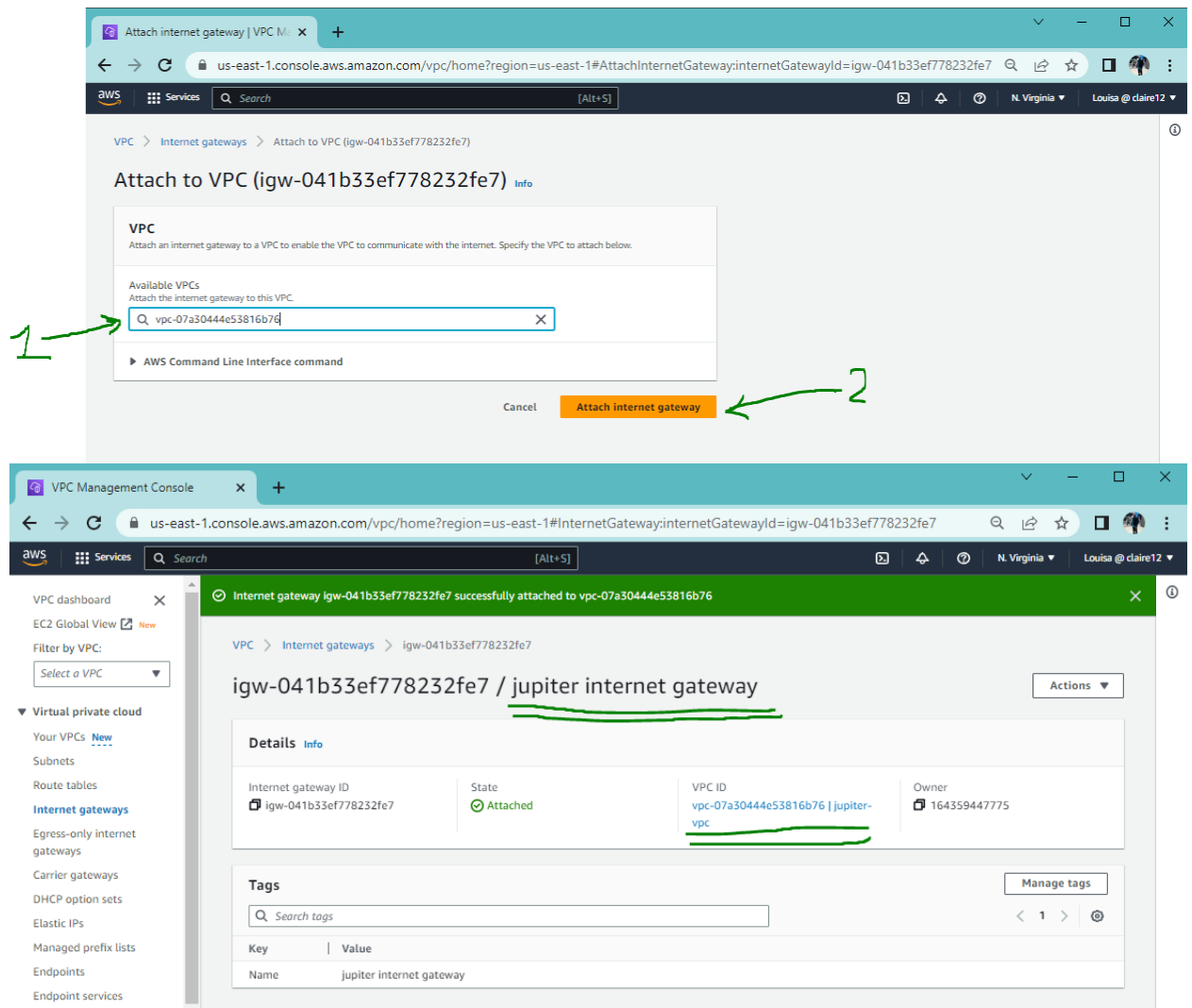
Available VPCs

Attach the internet gateway to this VPC.

vpc-0f3ae45420076b9c2

AWS Command Line Interface command

Cancel Attach internet gateway



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 @ clare

VPC dashboard  
EC2 Global View  
Filter by VPC:  
Select a VPC  
vpc-0f3ae45420076b9c2  
jupiter-vpc  
Owner: 164359447775

Virtual private cloud  
Your VPCs  
Subnets  
Route tables  
Internet gateways

Subnets Info  
Filter subnets  
search: vpc-0f3ae45420076b9c2  
Clear filters

Actions Create subnet

1 →

2 →

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 5 →

The image shows two screenshots from the AWS Management Console. The top screenshot displays the 'Subnets' page for a VPC. A green notification bar at the top states 'You have successfully created 1 subnet: subnet-069423b0b092fb8ae'. The 'Subnets (1/1) Info' table lists one subnet: 'jupiter-public-subn...' with ID 'subnet-069423b0b092fb8ae', state 'Available', and VPC 'vpc-0f3ae45420076b9c2'. A green arrow labeled '1' points to the 'Subnets' link in the left navigation pane. Another green arrow labeled '2' points to the 'jupiter-public-subn...' row. A third green arrow labeled '3' points to the 'Edit subnet settings' option in the 'Actions' dropdown menu. The bottom screenshot shows the 'Edit subnet settings' page for the same subnet. A green arrow labeled '1' points to the 'Enable auto-assign public IPv4 address' checkbox, which is checked. At the bottom right, there are 'Cancel' and 'Save' buttons, with a green arrow labeled '2' pointing to the 'Save' button.

1 → Subnets

2 → jupiter-public-subn...

3 → Edit subnet settings

1 → Enable auto-assign public IPv4 address

2 → Save

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

The screenshot shows the AWS Management Console interface. The top navigation bar includes the AWS logo, 'Services', a search bar, and the user's profile 'Louisa @ claire' in 'N. Virginia'.

**Route tables (1/1) Info**

Filter by VPC: **1** → Select a VPC

**2** → vpc-0f3ae45420076b9c2  
jupiter-vpc  
Owner: 164359447775

**3** → **Route tables**

**4** → **Create route table**

<input checked="" type="checkbox"/>	Name	Route table ID	Explicit subnet associat...	Edge associations	Main	VPC
<input checked="" type="checkbox"/>	-	rtb-006a984b5563b3f0a	-	-	Yes	vpc-0f3ae45420076b9c2   jupl...

**Create route table** [Info](#)

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

**Route table settings**

Name - *optional*  
Create a tag with a key of 'Name' and a value that you specify.

**1** → jupiter-public-route-table

VPC  
The VPC to use for this route table.

**2** → vpc-0f3ae45420076b9c2 (jupiter-vpc)

**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*:  **Remove**

**Add new tag**  
You can add 49 more tags.

**3** → **Create 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 > Route tables > rtb-0e5b9a871241446f3

## rtb-0e5b9a871241446f3 / jupiter-public-route-table

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 (1)**

Filter routes Both < 1 > ⚙

Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No

[Edit routes](#)

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

[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-0beeacdea90418f14 (jupiter-internet-gateway)	-	No

[Add route](#)

[Cancel](#) [Preview](#) [Save changes](#)

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

The screenshot shows the AWS Management Console interface. At the top, a green banner indicates that routes for the route table `rtb-0e5b9a871241446f3` were updated successfully. The main content area displays the details for the route table `rtb-0e5b9a871241446f3 / jupiter-public-route-table`. The **Subnet associations** tab is selected, showing **Explicit subnet associations (0)**. Below this, a table lists **Subnets without explicit associations (2)**, which are `jupiter-public-subnet-az1` and `jupiter-public-subnet-az2`. A green arrow points to the **Edit subnet associations** button. The second screenshot shows the **Edit subnet associations** modal. It lists **Available subnets (2/2)** with checkboxes for `jupiter-public-subnet-az1` and `jupiter-public-subnet-az2` selected. A green arrow points to the **Save associations** button at the bottom right.

Updated routes for `rtb-0e5b9a871241446f3 / jupiter-public-route-table` successfully

VPC > Route tables > `rtb-0e5b9a871241446f3`

### `rtb-0e5b9a871241446f3 / jupiter-public-route-table`

You can now check network connectivity with Reachability Analyzer [Run Reachability Analyzer](#)

**Details** Info

Route table ID <code>rtb-0e5b9a871241446f3</code>	Main No	Explicit subnet associations -	Edge associations -
VPC <code>vpc-0f3ae45420076b9c2   jupiter-vpc</code>	Owner ID <code>164359447775</code>		

Routes Subnet associations Edge associations Route propagation Tags

**Explicit subnet associations (0)** [Edit subnet associations](#)

[Find subnet association](#)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
No subnet associations			
You do not have any subnet associations.			

**Subnets without explicit associations (2)** [Edit subnet associations](#)

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:

[Find subnet association](#)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
<code>jupiter-public-subnet-az1</code>	<code>subnet-069423b0b092fb8ae</code>	<code>10.0.0.0/24</code>	-
<code>jupiter-public-subnet-az2</code>	<code>subnet-02960239865f5d593</code>	<code>10.0.1.0/24</code>	-

### Edit subnet associations

Change which subnets are associated with this route table.

**Available subnets (2/2)**

[Filter subnet associations](#)

<input checked="" type="checkbox"/>	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input checked="" type="checkbox"/>	<code>jupiter-public-subnet-az1</code>	<code>subnet-069423b0b092fb8ae</code>	<code>10.0.0.0/24</code>	-	Main ( <code>rtb-006a984b5563b3f0a</code> )
<input checked="" type="checkbox"/>	<code>jupiter-public-subnet-az2</code>	<code>subnet-02960239865f5d593</code>	<code>10.0.1.0/24</code>	-	Main ( <code>rtb-006a984b5563b3f0a</code> )

**Selected subnets**

`subnet-069423b0b092fb8ae / jupiter-public-subnet-az1` `subnet-02960239865f5d593 / jupiter-public-subnet-az2`

[Cancel](#) [Save associations](#)

8. Create the Private Subnets:

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

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

1 →

2 →

1 →

2 →

3 →

4 →

5 →

**Subnets** Info

Filter subnets

search: vpc-0f3ae45420076b9c2 Clear filters

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