

# Introduction to Amazon Virtual Private Cloud (VPC)

Amazon **VPC** enables you to build a virtual network in the AWS cloud - no VPNs, hardware, or physical datacenters required. You can define your own network space, and control how your network and the Amazon EC2 resources inside your network are exposed to the Internet.

A virtual private cloud (VPC) is a virtual network dedicated to your AWS account. It is logically isolated from other virtual networks in the AWS Cloud. You can specify an IP address range for the VPC, add subnets, add gateways, and associate security groups.

## Getting started with Amazon VPC

Follow the steps below to get started with the lab.

1.Sign in to the AWS Management Console by copying the **Sign-in link**, **Username**, and **Password** provided below.

Or just click [AWS Console](#)

- Sign-in Link: <https://aws.amazon.com/console/>

- IAM Username:

- Password:



Sign in as IAM user

Account ID (12 digits) or account alias 1

IAM user name 2

Password 3

Remember this account 4

**Sign in**

[Sign in using root user email](#)  
[Forgot password?](#)



2.You will see a **AWS\_Console**

The screenshot shows the AWS Console Home page. The top navigation bar includes links for AWS Home, Services, Search, and a 'sumit' button. Below the navigation is a toolbar with icons for EC2, S3, IAM, CloudFront, and Route 53. The main content area is divided into several sections:

- Recently visited:** A list of recently used services including EC2, Systems Manager, CloudFormation, CloudFront, Elastic Container Service, IAM, Elastic Container Registry, Billing and Cost Management, Resource Groups & Tag Editor, Cloud9, and S3. A "View all services" link is at the bottom.
- Applications (0):** Shows the current region as US East (N. Virginia). It includes a "Create application" button and a search bar for finding applications. A message indicates "No applications" and provides a link to "Create application".
- Welcome to AWS:** A general welcome message.
- AWS Health:** A section for monitoring AWS system health.
- Cost and usage:** A section for managing costs and usage.

The bottom of the screen features the CloudShell icon, a Feedback link, and copyright information for 2024. It also includes standard browser controls like back, forward, and search, along with system status indicators for battery, signal, and network.

3. Go to **Search bar** and search for the service **VPC** and press **Enter**

The screenshot shows the AWS Console Home page. At the top, there's a navigation bar with the AWS logo, a 'Services' dropdown, a search bar containing 'Search [Alt+S]', and account information for 'N. Virginia'. Below the navigation bar is a row of service links: EC2, S3, IAM, CloudFront, Route 53, and CloudFormation. The main content area is titled 'Console Home' with an 'Info' link. It features several sections: 'Recently visited' (Support, Cloud9, Billing and Cost Management, IAM, EC2, S3, CloudFormation, Elastic Container Service), 'Applications (0)' (with a 'Create application' button and a note about the current region being US East (N. Virginia)), 'Welcome to AWS', 'AWS Health' (with an 'Info' link), and 'Cost and usage' (with an 'Info' link). There are also 'Reset to default layout' and '+ Add widgets' buttons.

The screenshot shows the AWS Services search results for 'VPC'. The 'VPC' service is highlighted with a red box. The search bar at the top contains the text 'VPC'. The left sidebar lists various services like EC2, S3, and CloudFront. The main search results show 'Services (12)' and 'Features (59)'. The 'VPC' service is described as 'Isolated Cloud Resources'. Other listed services include AWS Firewall Manager, Detective, and Managed Services.

4. After selecting **VPC** you will see **VPC dashboard**, now in top right corner select the **region** you want your VPC to be created

The screenshot shows the VPC dashboard. The 'Create VPC' button is highlighted with a red box. The top right corner shows the region 'N. Virginia' selected. The dashboard displays 'Resources by Region' for the US East region, showing counts for VPCs, Subnets, Route Tables, Internet Gateways, Security Groups, and Customer Gateways. It also includes sections for Service Health, Settings, Additional Information, and AWS Network Manager.

5. Now click on **Create VPC** button on the screen

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#Home:

**Create VPC**

**Resources by Region**

- VPCs: US East 1 (See all regions)
- NAT Gateways: US East 0 (See all regions)
- Subnets: US East 6 (See all regions)
- VPC Peering Connections: US East 0 (See all regions)
- Route Tables: US East 1 (See all regions)
- Network ACLs: US East 1 (See all regions)
- Internet Gateways: US East 1 (See all regions)
- Security Groups: US East 43 (See all regions)
- Egress-only Internet Gateways: US East 0 (See all regions)
- Customer Gateways: US East 0 (See all regions)

**Service Health**

**Settings**

**Additional Information**

**AWS Network Manager**

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6. You can also create **VPC** by selecting the **Your VPC** on left panel

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#Home:

**VPC dashboard**

**Resources by Region**

- VPCs: US East 1 (See all regions)
- NAT Gateways: US East 0 (See all regions)
- Subnets: US East 6 (See all regions)
- VPC Peering Connections: US East 0 (See all regions)
- Route Tables: US East 1 (See all regions)
- Network ACLs: US East 1 (See all regions)
- Internet Gateways: US East 1 (See all regions)
- Security Groups: US East 43 (See all regions)
- Egress-only Internet Gateways: US East 0 (See all regions)
- Customer Gateways: US East 0 (See all regions)

**Service Health**

**Settings**

**Additional Information**

**AWS Network Manager**

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7. Once you start the VPC creation you will see a **default VPC** present in that window.  
Click to know more about [default VPC](#)

And on top right corner select the **create VPC** button to create it manually (will be doing the same in some time)

Now click on default **VPC Id** present on screen to explore more about that VPC

After clicking you will see the screen as shown below

The screenshot shows the AWS VPC dashboard for a Default VPC. The VPC ID is `vpc-02b1123de20177597`. Key details include:

Setting	Value	Setting	Value
VPC ID	<code>vpc-02b1123de20177597</code>	State	Available
Tenancy	Default	DNS hostnames	Enabled
Default VPC	Yes	Main route table	<code>rtb-01556f800f1a80ff5</code>
Network Address Usage metrics	Disabled	IPv6 pool	-
		Route 53 Resolver DNS Firewall rule groups	<code>590183997235</code>
		Owner ID	-

Below the details, there are tabs for Resource map, CIDRs, Flow logs, Tags, and Integrations. The Resource map tab is selected, showing a visual representation of the VPC structure.

Here you can see the details of Default VPC

Next Scroll down you will see a **resource map**

The screenshot shows the AWS VPC Resource map. It displays the following components and their connections:

- VPC**: Your AWS virtual network, ID `vpc-02b1123de20177597`.
- Subnets (6)**:
  - us-east-1a**: Subnet `subnet-06cb57a5cb44889b2` (labeled A)
  - us-east-1b**: Subnet `subnet-07404181aa8093983` (labeled B)
  - us-east-1c**: Subnet `subnet-036f2bc327239b4aa` (labeled C)
  - us-east-1d**: Subnet `subnet-005807dfa018ed1c2` (labeled D)
  - us-east-1e**: Subnet `subnet-0c9e69cd35626dc89` (labeled E)
- Route tables (1)**: Route network traffic to resources. One route table is listed: `rtb-01556f800f1a80ff5`.
- Network connections (1)**: Connections to other networks. One connection is listed: `igw-052bb00e18307b6a0`.

That Resource map contains

- **VPC**
- **Subnets**
- **Route Tables &**
- **Connection networks**

# Creating VPC

Now Go back to **your VPC** window to create the **VPC** of your own. Click on **create VPC**

Creation of VPC done in *Two ways*

- **VPC only** &
- **VPC and more**

## VPC Only

select **VPC only**

Follow the steps as shown below

The screenshot shows the 'Create VPC' wizard in the AWS Management Console. The current step is 'VPC settings'. The 'Resources to create' section has the 'VPC only' radio button selected. The 'Name tag - optional' field contains 'my-new-sample-vpc1'. The 'IPv4 CIDR block' section has 'IPv4 CIDR manual input' selected and the CIDR '192.168.1.0/24' entered. The 'Tenancy' dropdown is set to 'Default'. In the 'Tags' section, there is one tag: 'Name: my-new-sample-vpc'. At the bottom right of the wizard, the 'Create VPC' button is highlighted with a red box.

And **CIDR** to know more about it click on the link given below

## CIDR

create the vpc as shown in the picture

Once the creation done properly you will see the vpc created successfully

The screenshot shows the AWS VPC Details page for a VPC named 'my-new-sample-vpc1'. The VPC ID is 'vpc-092d6244e0b2ed4ac'. The state is 'Available'. The DHCP option set is 'dopt-03ea27566c6c63415'. The main route table is 'rtb-095f87c326a0c1bac'. The IPv4 CIDR is '192.168.1.0/24'. The Route 53 Resolver DNS Firewall rule groups are listed as '-' (empty). The DNS hostnames are disabled. The DNS resolution is enabled. The main network ACL is 'acl-0896b0c71e62f9476'. The IPv6 CIDR (Network border group) is also listed as '-'. The owner ID is '590183997235'. Below the details, there are tabs for 'Resource map', 'CIDRs', 'Flow logs', 'Tags', and 'Integrations'. The 'Resource map' tab is selected, showing a summary of resources: VPC (Show details), Subnets (0), Route tables (1), and Network connections (0).

*Successfully created VPC using VPC Only*

Now again back to **VPC dashboard** and *your VPC* you will see the vpc created by you.

But above process doesn't give you a complete VPC ie VPC with subnets,Route table and internet gateway.

Here subnets,Route table and internet gateway must be created manually

## Creating SUBNET

Now select **Subnets** from left panel and clik **create subnet** present on top right

Subnets (6) <a href="#">Info</a>						
	Name	Subnet ID	State	VPC	IPv4 CIDR	IP
<input type="checkbox"/>	-	<a href="#">subnet-07404181aa8093983</a>	<span>Available</span>	<a href="#">vpc-02b1123de20177597</a>	172.31.0.0/20	-
<input type="checkbox"/>	-	<a href="#">subnet-0c9e69cd35626dc89</a>	<span>Available</span>	<a href="#">vpc-02b1123de20177597</a>	172.31.48.0/20	-
<input type="checkbox"/>	-	<a href="#">subnet-0370a1571949ef4e1</a>	<span>Available</span>	<a href="#">vpc-02b1123de20177597</a>	172.31.64.0/20	-
<input type="checkbox"/>	-	<a href="#">subnet-06cb57a5cb44889b2</a>	<span>Available</span>	<a href="#">vpc-02b1123de20177597</a>	172.31.32.0/20	-
<input type="checkbox"/>	-	<a href="#">subnet-005807dfa018ed1c2</a>	<span>Available</span>	<a href="#">vpc-02b1123de20177597</a>	172.31.16.0/20	-
<input type="checkbox"/>	-	<a href="#">subnet-036f2bc327239b4aa</a>	<span>Available</span>	<a href="#">vpc-02b1123de20177597</a>	172.31.80.0/20	-

Select a subnet

<https://us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#SubnetDetail...>

## Now Follow the steps as shown below

VPC > Subnets > Create subnet

### Create subnet [Info](#)

**VPC**

VPC ID  
Create subnets in this VPC.  
 ▼

**Subnet settings**  
Specify the CIDR blocks and Availability Zone for the subnet.

Select a VPC first to create new subnets.

[Cancel](#) Create subnet

[CloudShell](#) [Feedback](#)

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AWS Services Search [Alt+S] N. Virginia sumit

VPC > Subnets > Create subnet

## Create subnet Info

**VPC**

VPC ID  
Create subnets in this VPC.  
vpc-092d6244e0b2ed4ac (my-new-sample-vpc1)

Associated VPC CIDRs  
IPv4 CIDRs  
192.168.1.0/24

**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.  
my-subnet-01

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EC2 S3 IAM CloudFront Route 53 CloudFormation

## 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.  
my-new-sample-subnet1

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.  
No preference

IPv4 VPC CIDR block Info  
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.  
192.168.1.0/24

IPv4 subnet CIDR block  
192.168.1.1/24 256 IPs  
< > ^ v

► Tags - optional  
Remove

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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.  
 ▼

**IPv4 VPC CIDR block** [Info](#)  
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.  
 ▼

**IPv4 subnet CIDR block**  
 256 IPs  
◀ ▶ ▲ ▼

**Tags - optional**  
**Key**  Value - optional  X Remove  
Add new tag  
 You can add 49 more tags.  
Remove  
Add new subnet

Cancel Create subnet

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Now back to dashboard to see the subnet that is created

**VPC dashboard** X

**Subnets (1/7) Info**

Name	Subnet ID	State	VPC	IPv4 CIDR
-	subnet-07404181aa8093983	Available	vpc-02b1123de20177597	172.31.0.0/20
-	subnet-09e69cd35626dc89	Available	vpc-02b1123de20177597	172.31.48.0/20
-	subnet-0370a1571949ef4e1	Available	vpc-02b1123de20177597	172.31.64.0/20
-	subnet-06cb57a5cb44889b2	Available	vpc-02b1123de20177597	172.31.32.0/20
-	subnet-005807dfa018ed1c2	Available	vpc-02b1123de20177597	172.31.16.0/20
-	subnet-036f2bc327239b4aa	Available	vpc-02b1123de20177597	172.31.80.0/20
<input checked="" type="checkbox"/> my-new-sample-subnet1	subnet-04d0fa8678ec2604c	Available	vpc-092d6244e0b2ed4ac   my-...	192.168.1.0/24

**subnet-04d0fa8678ec2604c / my-new-sample-subnet1**

Details Flow logs Route table Network ACL CIDR reservations Sharing Tags

**Details**

Subnet ID <input type="text" value="subnet-04d0fa8678ec2604c"/>	Subnet ARN <input type="text" value="arn:aws:ec2:us-east-1:590183997235:subnet/subnet-04d0fa8678ec2604c"/>	State <span style="color: green;">Available</span>	IPv4 CIDR <input type="text" value="192.168.1.0/24"/>
Available IPv4 addresses <input type="text" value="251"/>		Availability Zone <input type="text" value="us-east-1d"/>	Availability Zone ID <input type="text" value="use1-az4"/>

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## Creating Route Tables

Now select **Route Tables** from left panel and click **create Route Table** present on top right

Now Follow the steps as shown below

S | A | ? | O | N. Virginia | sumit |

EC2 S3 IAM CloudFront Route 53 CloudFormation

### VPC dashboard

EC2 Global View

Filter by VPC: Select a VPC

Virtual private cloud

Your VPCs

Subnets

**Route tables**

Internet gateways

Egress-only internet gateways

Carrier gateways

DHCP option sets

Elastic IPs

Managed prefix lists

Endpoints

Endpoint services

NAT gateways

Peering connections

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**Route tables (1) Info**

Find resources by attribute or tag

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
-	rtb-01556f800f1a80ff5	-	-	Yes	vpc-02b1123de20177597

Select a route table

S | A | ? | O | N. Virginia | sumit |

EC2 S3 IAM CloudFront Route 53 CloudFormation

VPC > Route tables > Create route table

### 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.

VPC  
The VPC to use for this route table.

**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*  
    
  
You can add 49 more tags.

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The screenshot shows the AWS VPC dashboard. A success message at the top states: "Route table rtb-081d05d89f264f5cd | my-new-sample-routetable was created successfully." Below this, the route table details are shown:

Route table ID	Main	Explicit subnet associations	Edge associations
<a href="#">rtb-081d05d89f264f5cd</a>	<input type="checkbox"/> No	-	-
VPC	Owner ID		
<a href="#">vpc-092d6244e0b2ed4ac   my-new-sample-vpc1</a>	<a href="#">590183997235</a>		

Below the details, there are tabs for Routes, Subnet associations, Edge associations, Route propagation, and Tags. The Routes tab shows one route entry:

Destination	Target	Status	Propagated
192.168.1.0/24	local	<span>Active</span>	No

At the bottom of the page, the URL is https://us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#igws, and the footer includes links for 2024, Amazon Web Services, Inc. or its affiliates, Privacy, Terms, and Cookie preferences.

You will see the Route table in dashboard

## Creating Internet Gateway

Now select **Internet Gateway** from left panel and click **Create Internet Gateway** present on top right

Now Follow the steps as shown below

The screenshot shows the AWS VPC dashboard. A success message at the top states: "Route table rtb-081d05d89f264f5cd | my-new-sample-routetable was created successfully." Below this, the Internet gateway list is shown:

Name	Internet gateway ID	State	VPC ID	Owner
-	<a href="#">igw-052bb00e18307b6a0</a>	<span>Attached</span>	<a href="#">vpc-02b1123de20177597</a>	590183997235

A red box highlights the "Create internet gateway" button in the top right corner. Below the table, a message says "Select an internet gateway above". At the bottom of the page, the URL is https://us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#igws, and the footer includes links for 2024, Amazon Web Services, Inc. or its affiliates, Privacy, Terms, and Cookie preferences.



## 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.

My-new-sample-igw

#### 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

My-new-sample-igw

You can add 49 more tags.

Feedback

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Once the creation is done attach *internet gateway* to VPC that you have created

Now Follow the steps as shown below

The following internet gateway was created: igw-03d025699abcb7c67 - My-new-sample-igw. You can now attach to a VPC to enable the VPC to communicate with the internet.

[VPC dashboard](#)

[EC2](#) [S3](#) [IAM](#) [CloudFront](#) [Route 53](#) [CloudFormation](#)

[VPC](#) > [Internet gateways](#) > igw-03d025699abcb7c67

**igw-03d025699abcb7c67 / My-new-sample-igw**

[Actions](#)

Details		Info	
Internet gateway ID	igw-03d025699abcb7c67	State	Detached
VPC ID	-	Owner	590183997235

**Tags**

Search tags	
Key	Value
Name	My-new-sample-igw

[Manage tags](#)

[CloudShell](#) [Feedback](#)

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The following internet gateway was created: igw-03d025699abcb7c67 - My-new-sample-igw. You can now attach to a VPC to enable the VPC to communicate with the internet.

Attach to a VPC



VPC > Internet gateways > Attach to VPC (igw-03d025699abcb7c67)

## Attach to VPC (igw-03d025699abcb7c67) 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.

 Select a VPC

AWS Command Line Interface command

Cancel

Attach internet gateway

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The following internet gateway was created: igw-03d025699abcb7c67 - My-new-sample-igw. You can now attach to a VPC to enable the VPC to communicate with the internet.

Attach to a VPC



VPC > Internet gateways > Attach to VPC (igw-03d025699abcb7c67)

## Attach to VPC (igw-03d025699abcb7c67) 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.

 Select a VPC

vpc-092d6244e0b2ed4ac - my-new-sample-vpc1

AWS Command Line Interface command

Cancel

Attach internet gateway

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## Edit Routes

Now back to **Route Table** and select **Routes** and perform the action as shown

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VPC dashboard EC2 Global View Filter by VPC: Select a VPC Virtual private cloud Your VPCs Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections

**Route tables (1/3) Info**

Find resources by attribute or tag

Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
-	rtb-01556f800f1a80ff5	-	-	Yes	vpc-02b1123de20177597
my-new-sample-routetable	rtb-081d05d89f264f5cd	subnet-04d0fa8678ec26...	-	No	vpc-092d6244e0b2ed4ac   m
-	rtb-095f87c326a0c1bac	-	-	Yes	vpc-092d6244e0b2ed4ac   m

**rtb-081d05d89f264f5cd / my-new-sample-routetable**

Details Routes Subnet associations Edge associations Route propagation Tags

**Routes (1)**

Filter routes

Destination	Target	Status	Propagated
192.168.1.0/24	local	Active	No

Both Edit routes

https://us-east-1.console.aws.amazon.com/console/home?region=us-east-1 © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

AWS Services Search [Alt+S] N. Virginia sumit

VPC > Route tables > rtb-081d05d89f264f5cd > Edit routes

## Edit routes

Destination	Target	Status	Propagated
192.168.1.0/24	local	Active	No

Add route

Cancel Preview Save changes

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Screenshot of the AWS VPC Route Tables 'Edit routes' page. A route entry for destination 192.168.1.0/24 is selected and highlighted with a red box. The target dropdown shows 'local' and 'Internet Gateway'. The 'Internet Gateway' option is also highlighted with a red box. The status is 'Active'. The 'Propagated' field is set to 'No'. A 'Remove' button is visible. Below the table is an 'Add route' button. At the bottom right are 'Cancel', 'Preview', and a prominent 'Save changes' button.

Click on **Save changes**

## Subnet Association

And in that window itself select **Subnet Association** and perform the action as shown

Screenshot of the AWS VPC Route Tables 'Subnet associations' section. The 'rtb-081d05d89f264f5cd / my-new-sample-routetable' route table is selected. The 'Subnet associations' tab is active and highlighted with a red box. A large red box surrounds the 'Edit subnet associations' button. Below it, a message states 'No subnet associations' and 'You do not have any subnet associations.' At the bottom, a section for 'Subnets without explicit associations' is shown with one item, also with an 'Edit subnet associations' button.

## Edit subnet associations

Change which subnets are associated with this route table.

**Available subnets (1/1)**

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
my-new-sample-subnet1	subnet-04d0fa8678ec2604c	192.168.1.0/24	-	Main (rtb-095f87c326a0c1bac)

**Selected subnets**

subnet-04d0fa8678ec2604c / my-new-sample-subnet1 X
--

Cancel **Save associations**

Click on **Save Association**

Now Again back to **your VPC** and select the VPC that you have created and panel that appears at bottom shows the **Resource Map**

**VPC dashboard**

**Your VPCs (1/2) Info**

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP opt
-	vpc-02b1123de20177597	Available	172.31.0.0/16	-	dopt-03ea
<b>my-new-sample-vpc1</b>	vpc-092d6244e0b2ed4ac	Available	192.168.1.0/24	-	dopt-03ea

**Virtual private cloud**

**Your VPCs** (highlighted with a red box)

**Resource map** (highlighted with a red box)

**Resource map** details:

- VPC** Show details: Your AWS virtual network my-new-sample-vpc1
- Subnets (1)**: Subnets within this VPC us-east-1d my-new-sample-subnet1
- Route tables (2)**: Route network traffic to resources my-new-sample-routetable rtb-095f87c326a0c1bac
- Network interface**: Connection My-new-sample-subnet1

The screenshot shows the AWS VPC console with the 'Your VPCs' page. A red arrow points to the checkbox next to 'my-new-sample-vpc1'. Below the table, the 'Resource map' tab is selected, displaying a network diagram. The diagram includes a 'VPC' node, a 'Subnets (1)' node containing 'us-east-1d' and 'my-new-sample-subnet1', a 'Route tables (2)' node containing 'my-new-sample-routetable' and 'rtb-095f87c326a0c1bac', and a 'Network connections (1)' node containing 'My-new-sample-igw'.

You have Successfully created the complete **VPC** with subnets,Route Table and Internet gateway which were not present before.

## VPC and more

Now Go back to **your VPC** window to create the **VPC** of your own. Click on **create VPC**

This time select **VPC and more**

Follow the steps shown below to perform the same

The screenshot shows the 'Create VPC' wizard. In the 'VPC settings' tab, the 'VPC and more' option is selected. Other settings include 'Auto-generate' name tag ('project') and an IPv4 CIDR block of '10.0.0.16'. The 'Preview' tab displays a network diagram with 6 subnets ('project-subnet-public1-us-east-1a', 'project-subnet-private1-us-east-1a', 'project-subnet-public2-us-east-1b', 'project-subnet-private2-us-east-1b', 'project-subnet-public3-us-east-1c') and 4 route tables ('project-rtb-public', 'project-rtb-private1', 'project-rtb-private2', 'project-rtb-private3').

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IPv6 CIDR block [Info](#)  
 No IPv6 CIDR block  
 Amazon-provided IPv6 CIDR block

Tenancy [Info](#)  
Default

Number of Availability Zones (AZs) [Info](#)  
Choose the number of AZs in which to provision subnets. We recommend at least two AZs for high availability.  
**1 2 3**

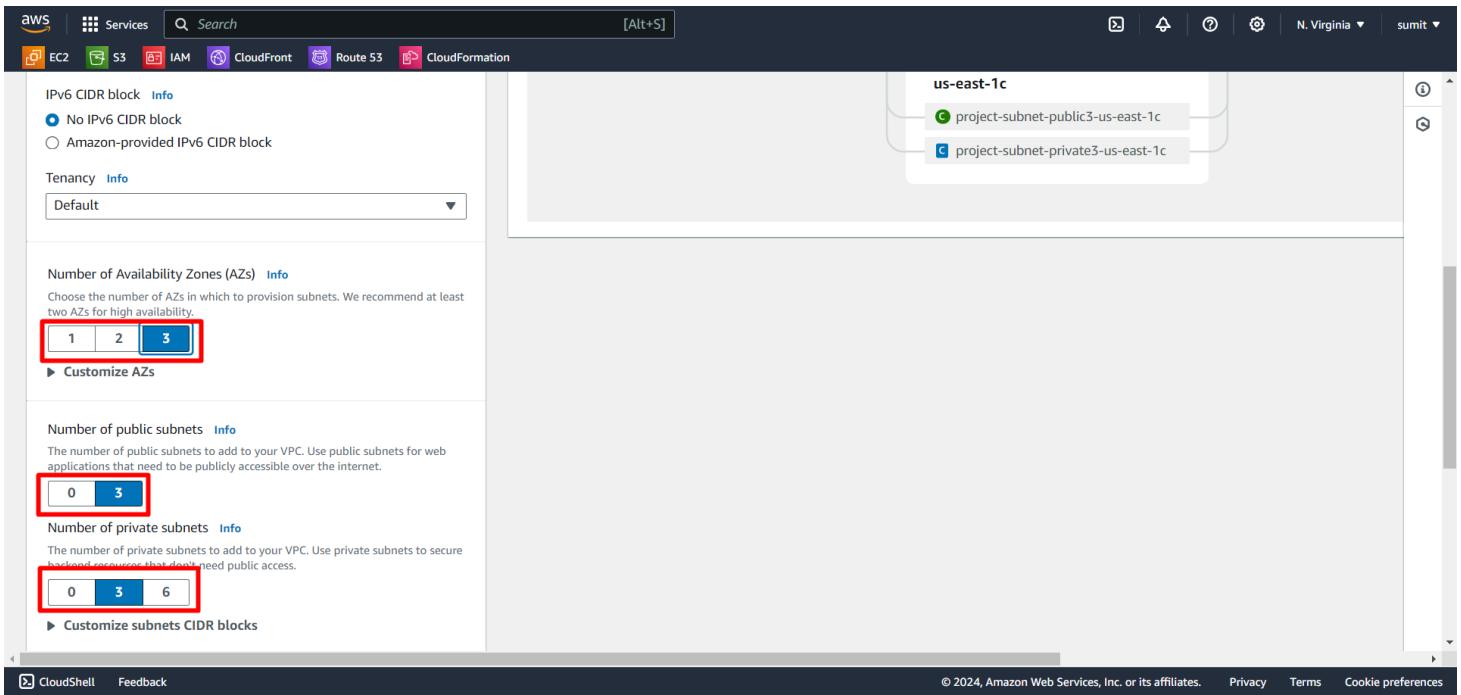
▶ Customize AZs

Number of public subnets [Info](#)  
The number of public subnets to add to your VPC. Use public subnets for web applications that need to be publicly accessible over the internet.  
**0 3**

Number of private subnets [Info](#)  
The number of private subnets to add to your VPC. Use private subnets to secure backend resources that don't need public access.  
**0 3 6**

▶ Customize subnets CIDR blocks

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This screenshot shows the configuration step of the AWS VPC creation wizard. It includes settings for IPv6 CIDR block, tenancy (Default), and the number of Availability Zones (AZs). The 'Number of AZs' field is set to 3, highlighted with a red box. Below it, the 'Number of public subnets' is set to 3, also highlighted with a red box. The 'Number of private subnets' section shows 3 public and 6 private subnets, with the private subnet count highlighted with a red box. A preview window on the right shows the VPC structure with three subnets: 'project-subnet-public3-us-east-1c' and 'project-subnet-private3-us-east-1c' in the 'us-east-1c' region.

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The number of private subnets to add to your VPC. Use private subnets to secure backend resources that don't need public access.  
**0 3 6**

▶ Customize subnets CIDR blocks

NAT gateways (\$) [Info](#)  
Choose the number of Availability Zones (AZs) in which to create NAT gateways.  
Note that there is a charge for each NAT gateway.  
**None In 1 AZ 1 per AZ**

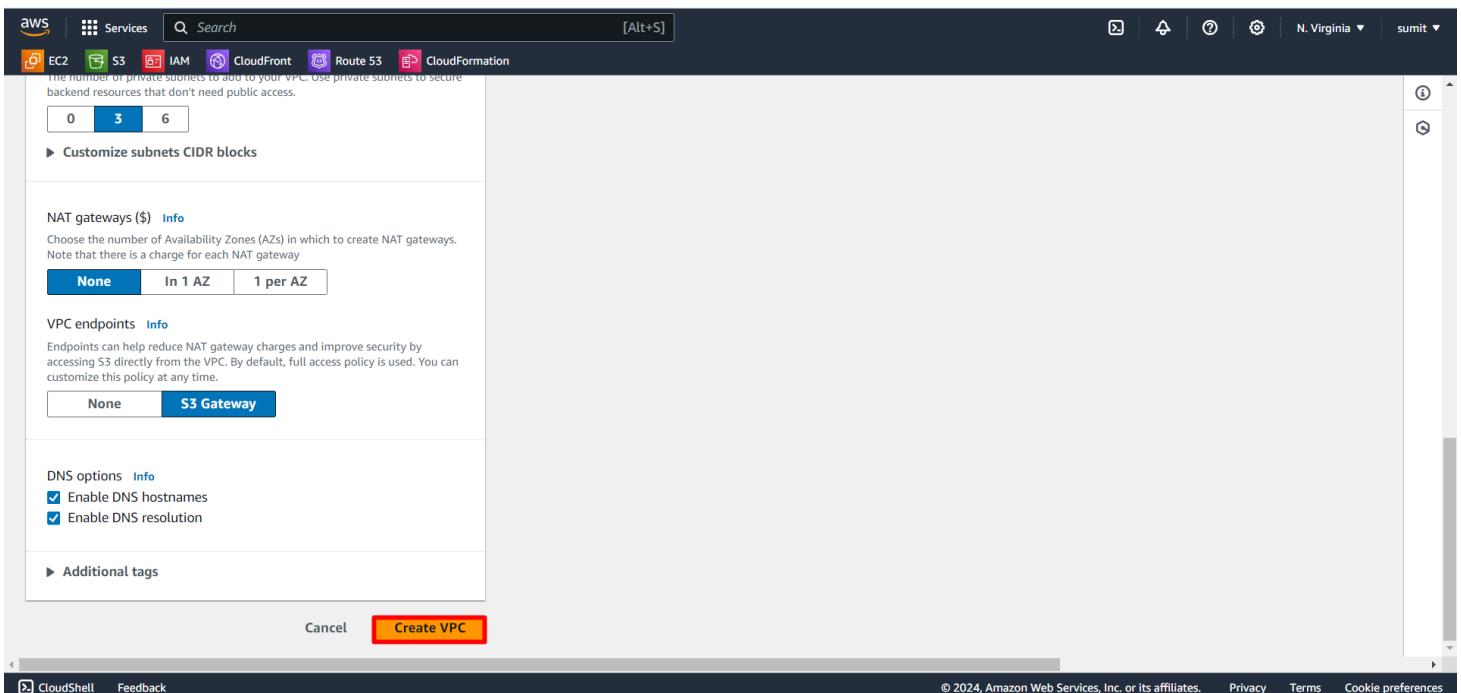
VPC endpoints [Info](#)  
Endpoints can help reduce NAT gateway charges and improve security by accessing S3 directly from the VPC. By default, full access policy is used. You can customize this policy at any time.  
**None S3 Gateway**

DNS options [Info](#)  
 Enable DNS hostnames  
 Enable DNS resolution

▶ Additional tags

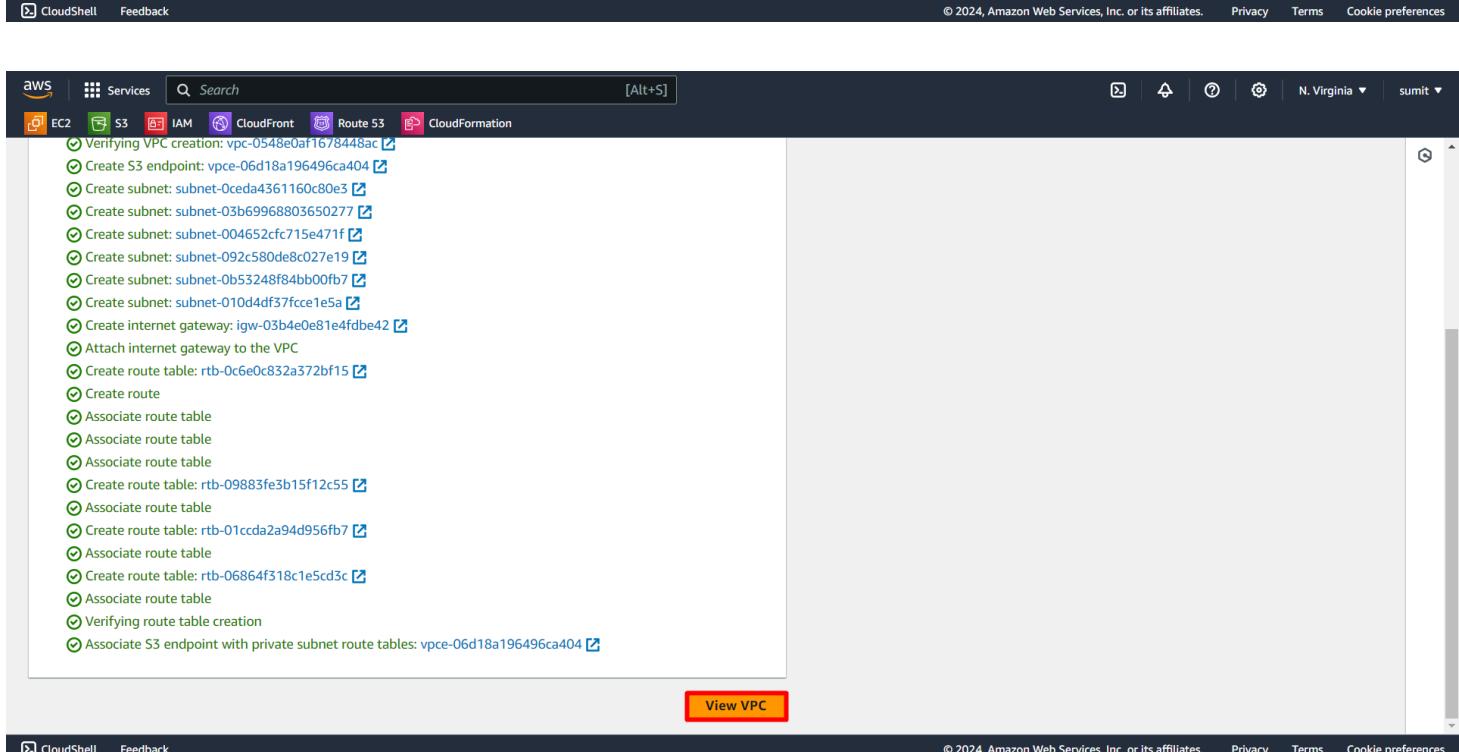
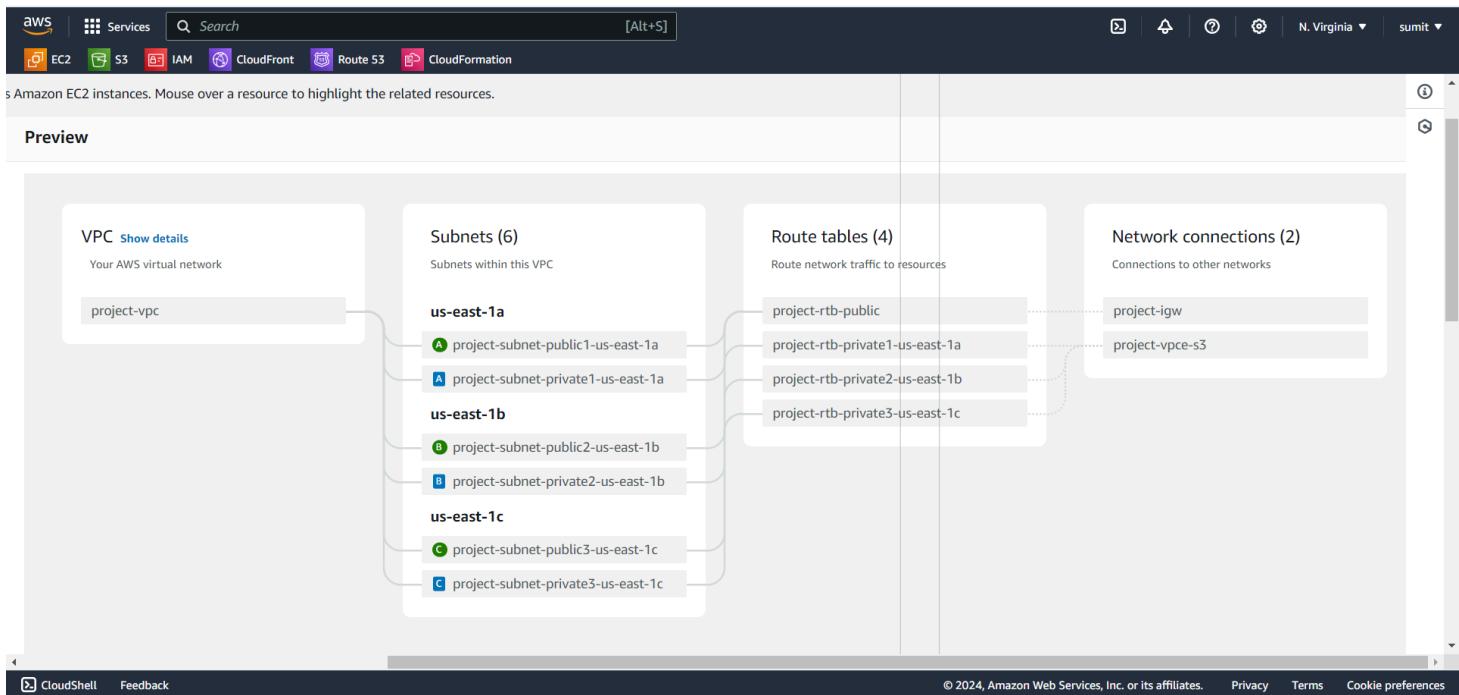
Cancel **Create VPC**

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This screenshot continues the VPC configuration process. It shows options for NAT gateways (None, In 1 AZ, 1 per AZ) and VPC endpoints (None, S3 Gateway). The 'S3 Gateway' option is highlighted with a red box. The 'Create VPC' button is prominently displayed at the bottom, also highlighted with a red box.

A **preview** that shows the flow and connections



VPC ID: vpc-0548e0af1678448ac

State: Available

Tenancy: Default

Default VPC: No

Network Address Usage metrics: Disabled

DNS hostnames: Enabled

DNS resolution: Enabled

Main route table: rtb-003bb2455294842fd

Main network ACL: acl-01bd6b87a4e9519ea

IPv4 CIDR: 10.0.0.0/16

IPv6 pool: -

Route 53 Resolver DNS Firewall rule groups: -

Owner ID: 590183997235

Once you complete the process and clicks *create VPC* & then *View VPC* a window will be opened stating the successfully creation of **VPC**

Successfully created the **VPC**.

**YOU HAVE SUCCESSFULLY COMPLETED THE LAB**

## What is Default VPC?

A default VPC comes with a public subnet in each Availability Zone, an internet gateway, and settings to enable DNS resolution. Therefore, you can immediately start launching Amazon EC2 instances into a default VPC. You can also use services such as Elastic Load Balancing, Amazon RDS, and Amazon EMR in your default VPC.

A default VPC is suitable for getting started quickly and for launching public instances such as a blog or simple website. You can modify the components of your default VPC as needed.

## SUBNET

A subnet is a range of IP addresses in your VPC. You can create AWS resources, such as EC2 instances, in specific subnets.

### Subnet types

The subnet type is determined by how you configure routing for your subnets. For example:

**Public subnet** – A subnet that can access the Internet is a public subnet. It is the subnet that has a route table entry that points to an internet gateway. Resources that are required to face or receive Internet traffic can be added to a public subnet

**Private subnet** – A subnet that cannot access the Internet is a private subnet. It is the subnet that does not have a route table entry that points to an internet gateway. Resources that are not required to be publicly available are within a private subnet.

To Know more Click [Subnets](#)

## Route Tables

Route tables are essentially a set of rules. These rules help us determine where to direct the network traffic from a subnet or gateway. We can assign a specific route table to a subnet.

To Know more Click [Route Tables](#)

## Connection networks

A gateway essentially connects a VPC to another network. For instance, if we want to connect a VPC to the internet then we will use an Internet Gateway. The default VPC includes an internet gateway by default.

The default VPC has a public subnet in each availability zone along with an internet gateway.

To Know more Click [Internet Gateway](#)

## **CONGRATULATIONS!**