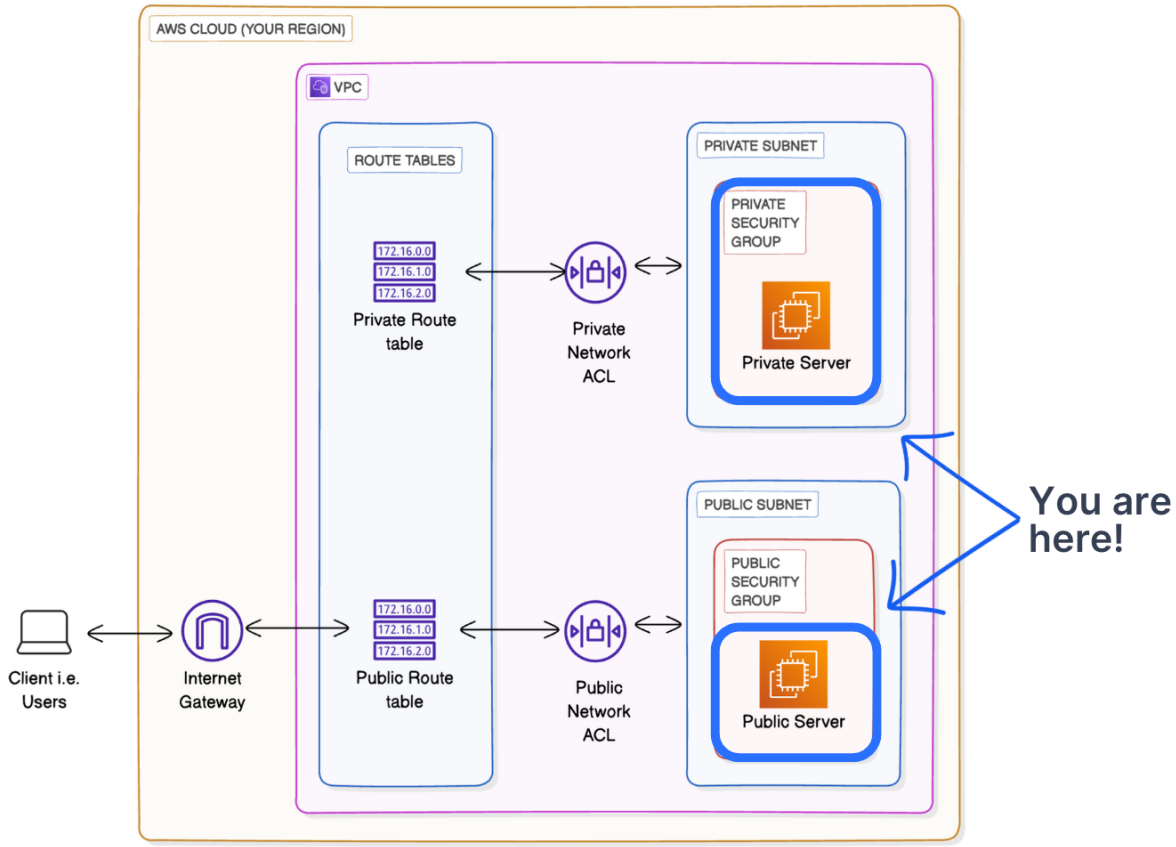
Launching VPC Resources



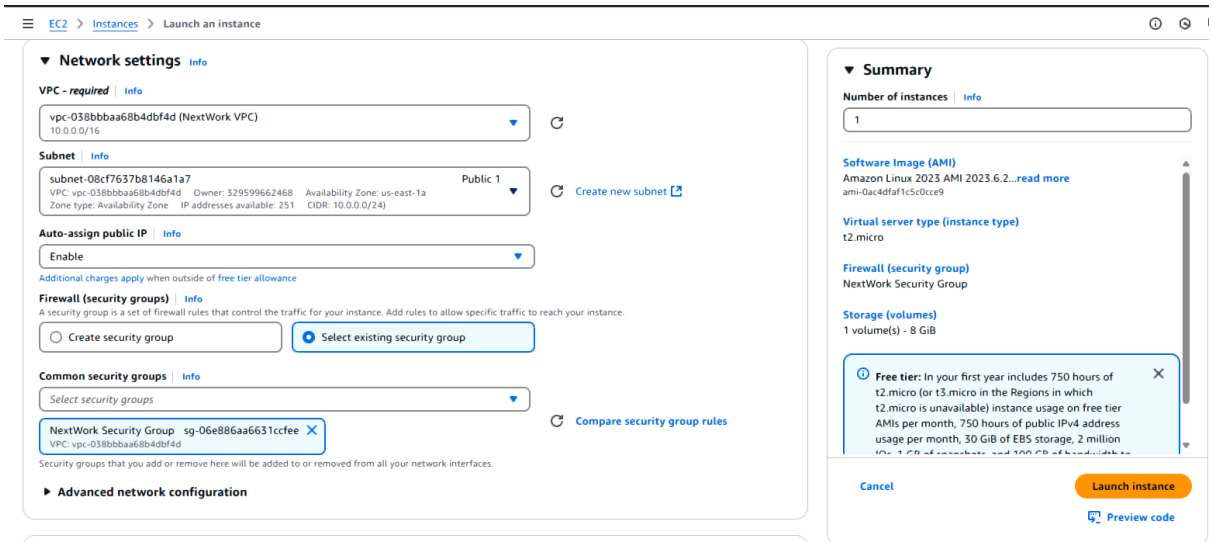
Launch a Public EC2 Instance

Head to the **EC2 console** - search for EC2 in the search bar at the top of screen.

Select **Instances** at the left hand navigation bar.

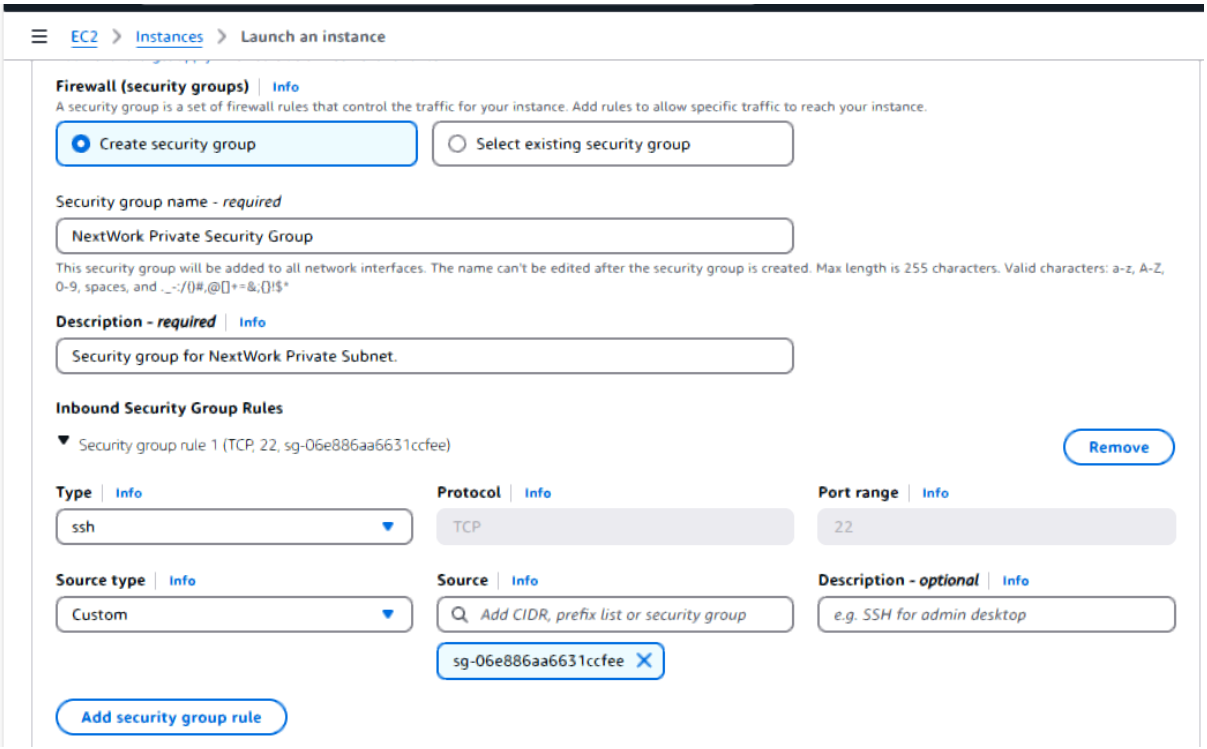
- Select **Launch instances**.
- Since your first EC2 instance will be launched in the public subnet, let's name it NextWork Public Server
- For the **Amazon Machine Image,** select **Amazon Linux 2023 AMI.**
- For the **Instance type,** select **t2.micro.**
- For the **Key pair (login)** panel, select **Create new key pair.**
- For the **Key pair name**, use NextWork key pair
- Keep the **Key pair type** as **RSA**, and the **Private key file format** as **.pem**
- Select **Create key pair**.
- At the **Network settings** panel, select **Edit** at the right-hand corner.
- Select **NextWork VPC** from the drop-down in the VPC list.
- Select your public subnet.
- For the **Firewall (security groups)**, we've already created the security group for your public subnet's resources. Choose **Select existing security group.**
- Select **NextWork Public Security Group.**
- Select **Launch instance.**

- Click into your instance once it's successfully launched.
- Head back to the **Instances** page.
- Select the checkbox next to your instance, and a **Details** panel pops up
- Switch the tab to **Networking**.
- Notice how your public server has a Public IPv4 address, a subnet it's associated with, an Availability zone it's launched in, and a VPC ID that links it with NextWork VPC too.



Launch a Private EC2 Instance

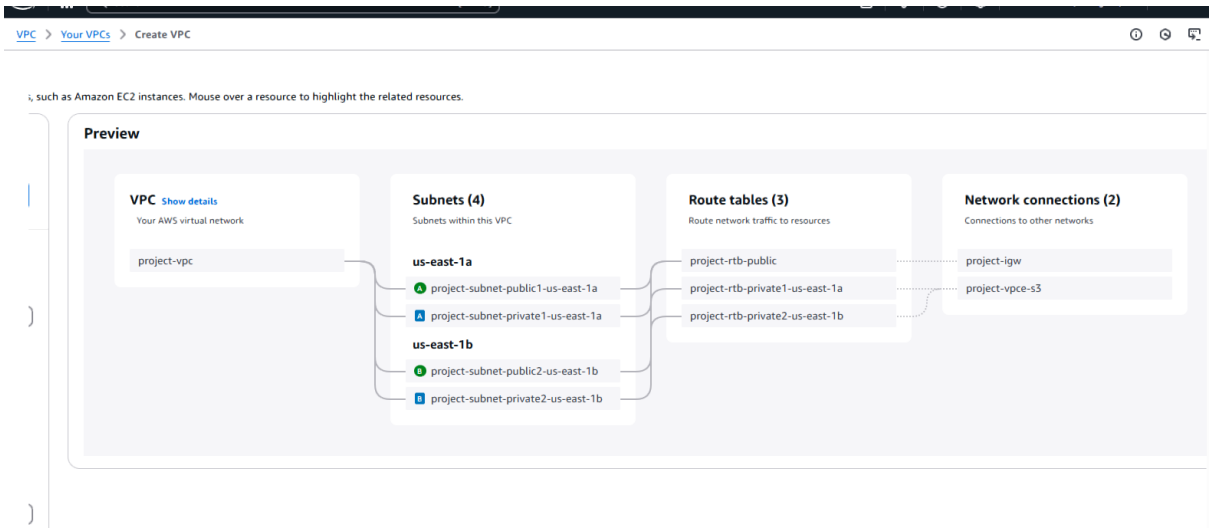
- **Select Launch instances again.**
- **Name: NextWork Private Server**
- **Amazon Machine Image (AMI): Amazon Linux 2023 AMI**
- **Instance type: t2.micro**
- **Key pair: NextWork key pair**
- At the **Network settings** panel, select **Edit** at the right hand corner.
- Network: **NextWork VPC**
- Subnet: **NextWork Private Subnet**
- **Firewall (security groups):** we said we'd use an alternative way to set up security groups for your private subnet's resources, and here we are!
    - Select **Create security group.**
    - For **Security group name,** let's use NextWork Private Security Group
    - For Description, we'll replace the default value with Security group for NextWork Private Subnet.
    - Notice the default Inbound Security Groups, the **Type** is set to **ssh**.
- Change the **Source type** from **Anywhere** to **Custom.**
- In the **Source** drop down, scroll down and select **NextWork Public Security Group.**
- Select **Launch instance.**



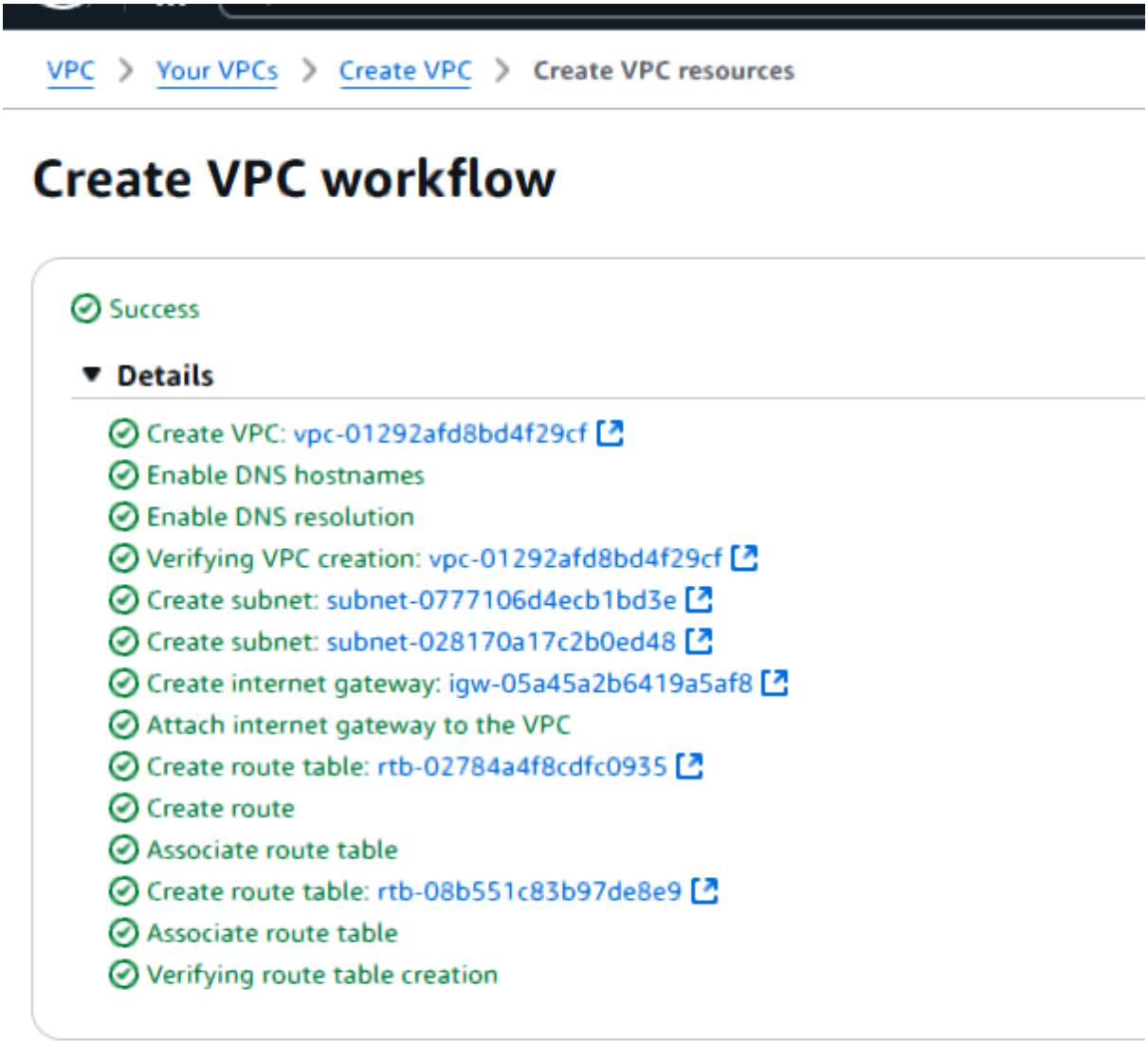
Launch your VPC setup in minutes

In this step, you're going to:

- Try a new way to create your entire VPC setup
- Head back to your VPC console.
- From the left-hand navigation bar, select Your VPCs.
- Select Create VPC.
- We previously stuck to creating a VPC only, but this time select VPC and more.
- A visual flow diagram pops up that shows us other VPC resources. This is called a VPC resource map!



- Scroll back to the left-hand side of the screen to see the VPC's set up.
- Under **Name tag auto-generation**, enter nextwork
- The VPC's **IPv4 CIDR block** is already pre-filled to 10.0.0.0/16
- For **IPv6 CIDR block**, we'll leave in the default option of **No IPv6 CIDR block.**
- For **Tenancy**, we'll keep the selection of **Default.**
- For **Tenancy**, we'll keep the selection of **Default.**
- For **Number of Availability Zones (AZs)**, we'll leave the default value of **2** for now and come back to this soon.
- Expand the **Customize AZs** arrow. You can even configure which two Availability Zones you'd like to set up for this VPC!
- Next, notice that **Number of public subnets** only gives you two options **- 0** or **2.**
- Similar to this, **Number of private subnets** only gives you three options **- 0**, **2** or **4.**
- Change the **Number of private subnets** from **2** to **1**. Now we have just two subnets total - one public and one private subnet!
- Update your public and private subnets' CIDR blocks:
    - Update your public subnet CIDR block to 10.0.0.0/24
    - Update your private subnet CIDR block to 10.0.1.0/24
- Next, for the **NAT gateways ($)** option, make sure you've selected **None.** As the dollar sign suggests, NAT gateways cost money!
- Next, for the **VPC endpoints** option, select **None.**
- You can leave the **DNS options** checked.
- Select **Create VPC.**
- Super satisfying to see this loading bar of your VPC and its resources getting created



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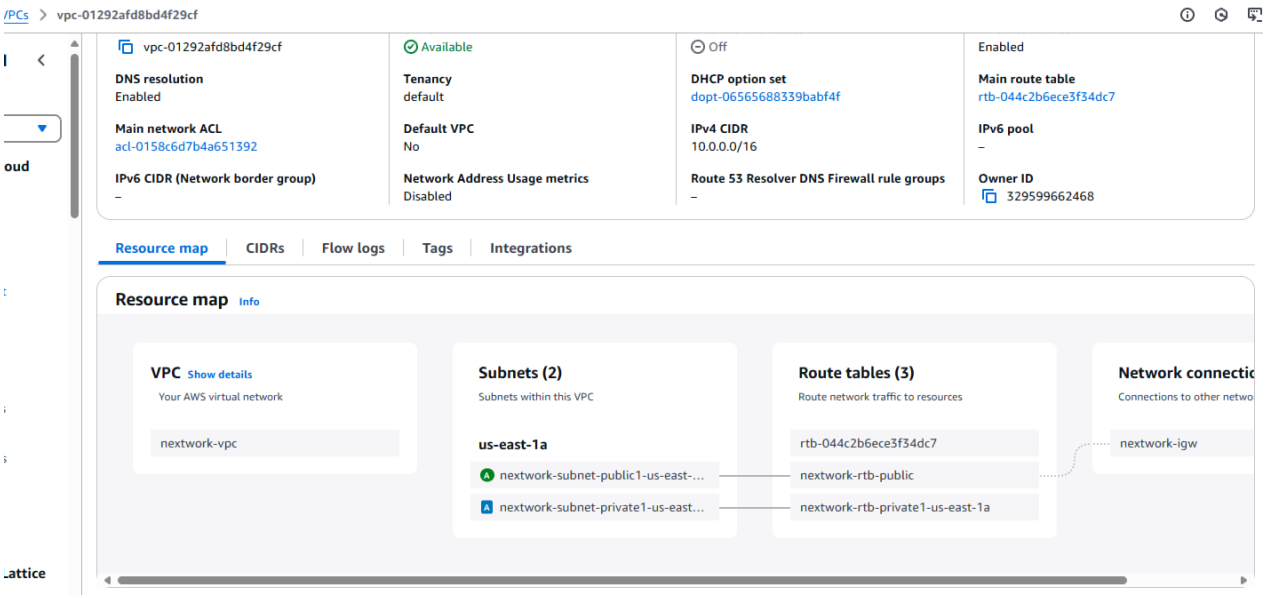
- Select **View VPC**.
- Select the checkbox next to **nextwork-vpc**.
- Select the **Resource map** tab.
- Now uncheck **nextwork-vpc,** and select your original **NextWork VPC.**
- Select the **Resource map** tab again.
- There's a resource map for VPCs we create from scratch too.


/PCs > vpc-01292afd8bd4f29cf
vpc-01292afd8bd4f29cf
Available
Off
Enabled
DNS resolution
Enabled
Tenancy
default
DHCP option set
dopt-06565688339babf4f
Main route table
rtb-044c2b6ece3f34dc7
Main network ACL
acl-0158c6d7b4a651392
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
329599662468
Resource map
CIDRs
Flow logs
Tags
Integrations
Resource map Info
VPC Show details
Your AWS virtual network
nextwork-vpc
Subnets (2)
Subnets within this VPC
us-east-1a
nextwork-subnet-public1-us-east-...
nextwork-subnet-private1-us-east...
Route tables (3)
Route network traffic to resources
rtb-044c2b6ece3f34dc7
nextwork-rtb-public
nextwork-rtb-private1-us-east-1a
Network connectic
Connections to other netwo
nextwork-igw