



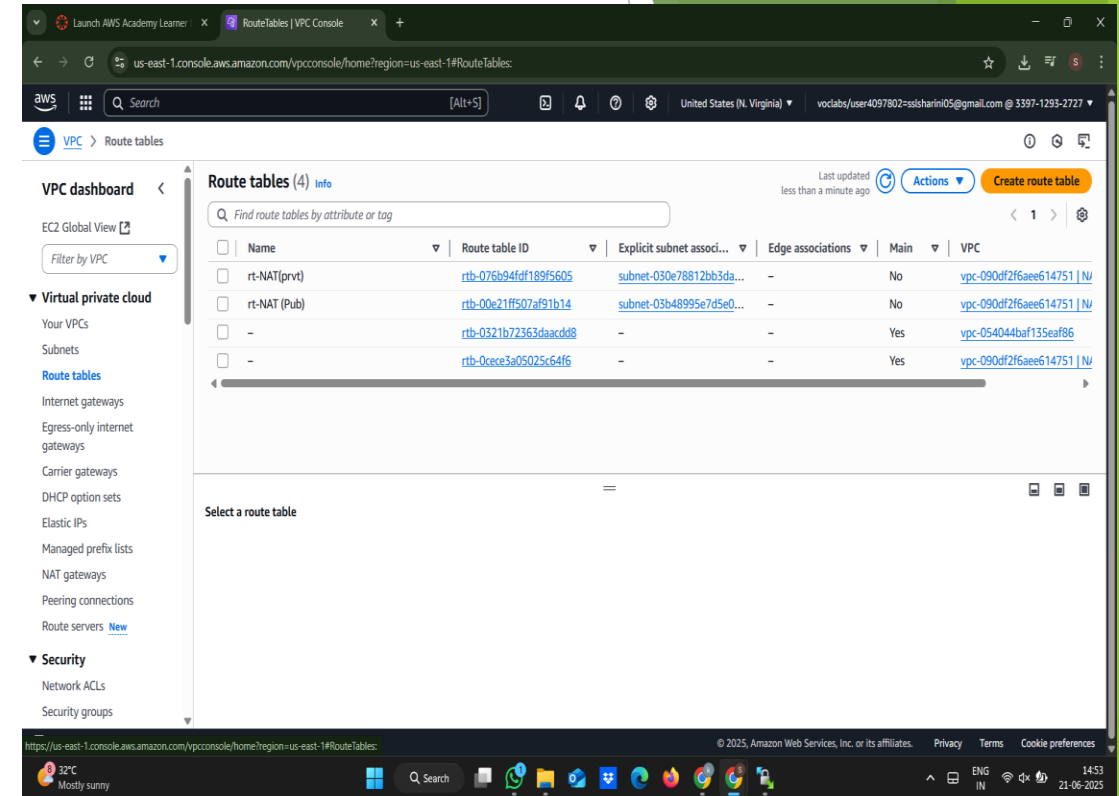
SECURE VPC ARCHITECTURE WITH NAT GATEWAY & WEBHOSTING

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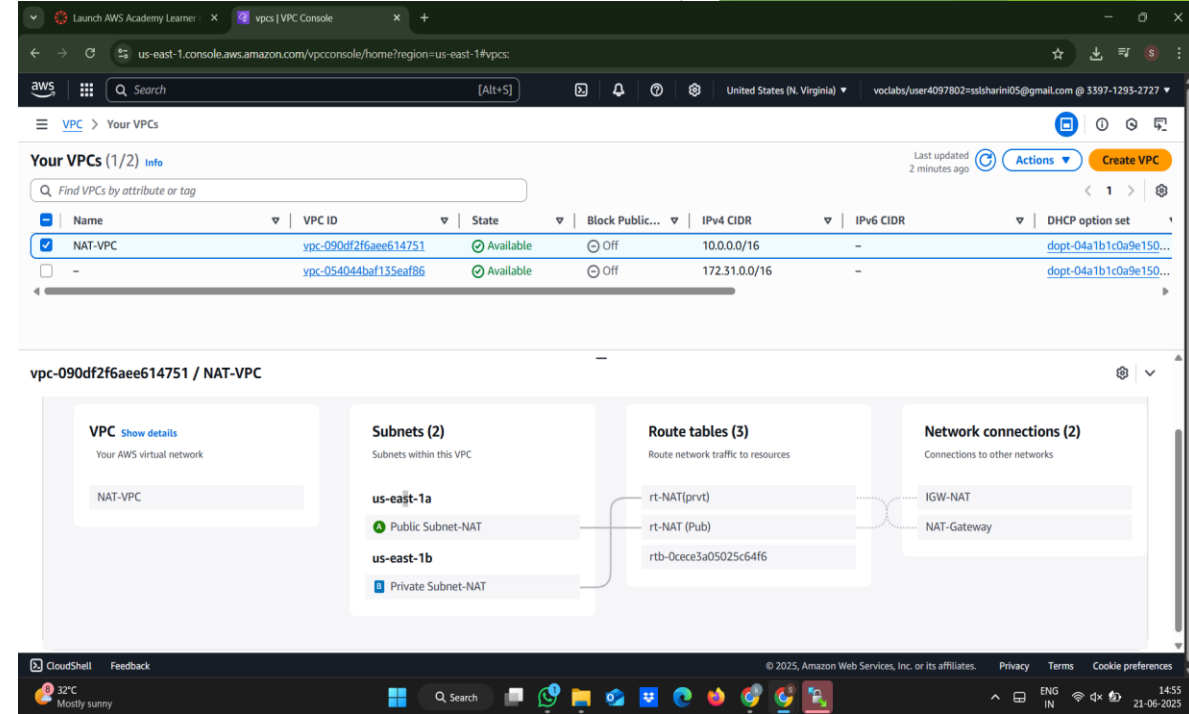
➤ CREATE ROUTE TABLE

- ❖ **Create a VPC** with public and private subnets.
- ❖ **Attach an Internet Gateway** to the VPC for public internet access.
- ❖ **Launch a NAT Gateway** in the public subnet with an Elastic IP.
- ❖ **Public Route Table:** Add 0.0.0.0/0 → Internet Gateway; associate with public subnet.
- ❖ **Private Route Table:** Add 0.0.0.0/0 → NAT Gateway; associate with private subnet.



➤ CREATE VPC

- ❖ Create a VPC with public subnet and a private subnet..
- ❖ Attach an internet gateway to the VPC and route from the public subnet to it...
- ❖ Create a NAT Gateway in the public subnet with an elastic IP and route from the private subnet to it...
- ❖ Launch a web server EC2 in the public subnet (with public IP) & an EC2 in the private subnet(no public IP)...
- ❖ Use security groups to allow HTTP to web server and restrict private ec2 access to internal traffic only...



The screenshot displays the AWS VPC console. At the top, there's a navigation bar with the AWS logo, a search bar, and user information. Below this, the 'Your VPCs' section shows a table with two VPCs. The first VPC, 'NAT-VPC', is selected. Below the table, the 'vpc-090df2f6aee614751 / NAT-VPC' details are shown, including subnets, route tables, and network connections.

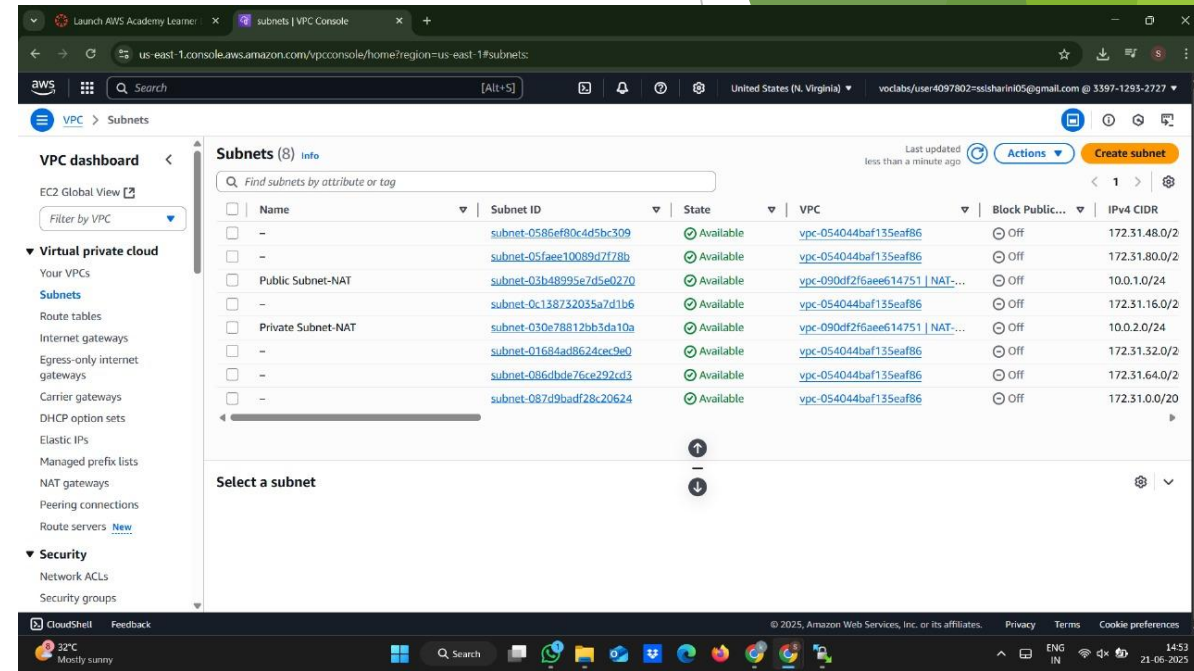
Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR	DHCP option set
NAT-VPC	vpc-090df2f6aee614751	Available	Off	10.0.0.0/16	-	dopt-04a1b1c0a9e150...
-	vpc-054044baf135eaf86	Available	Off	172.31.0.0/16	-	dopt-04a1b1c0a9e150...

vpc-090df2f6aee614751 / NAT-VPC

- VPC** Show details
Your AWS virtual network
NAT-VPC
- Subnets (2)**
Subnets within this VPC
 - us-east-1a
 - Public Subnet-NAT
 - us-east-1b
 - Private Subnet-NAT
- Route tables (3)**
Route network traffic to resources
 - rt-NAT(prvt)
 - rt-NAT (Pub)
 - rtb-0cece3a05025c64f6
- Network connections (2)**
Connections to other networks
 - IGW-NAT
 - NAT-Gateway

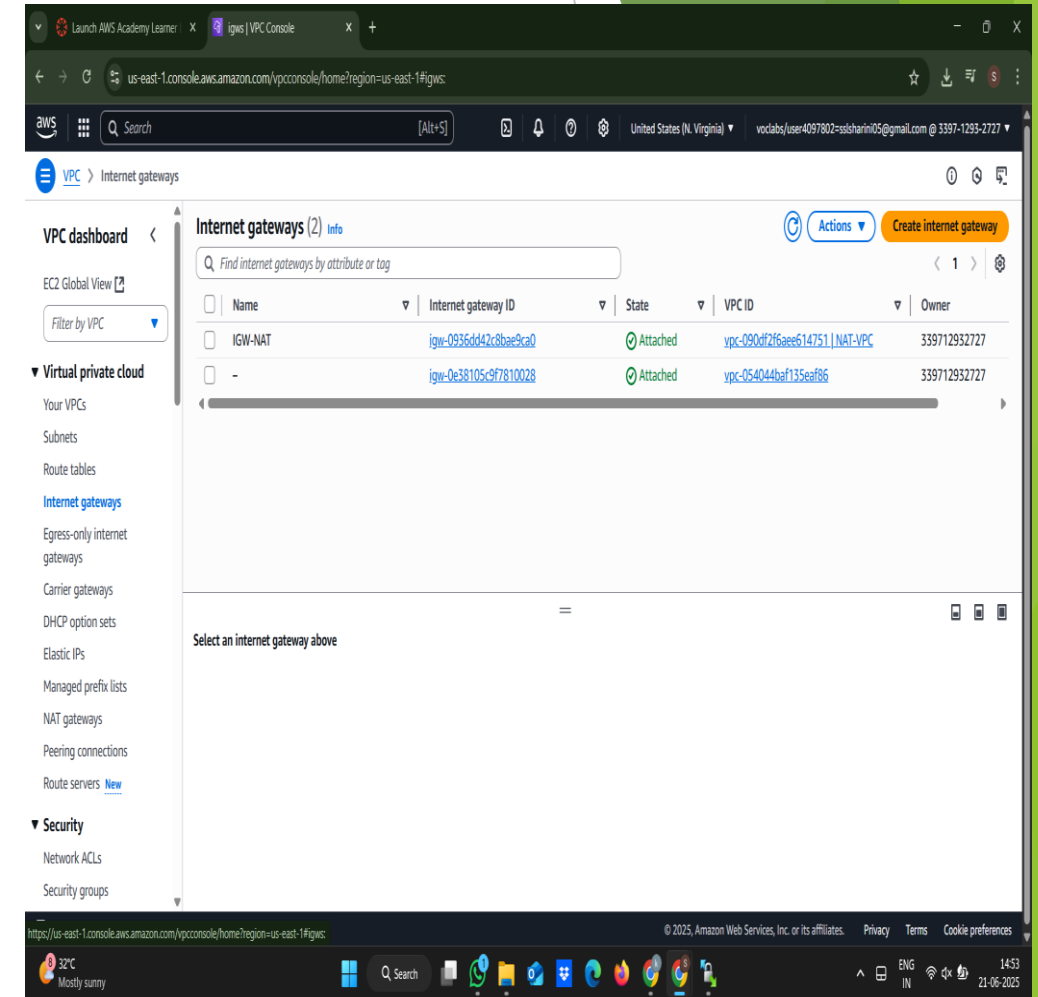
➤ CREATE SUBNETS

- ❖ Create a **Public Subnet** for web server and NAT Gateway.
- ❖ Create a **Private Subnet** for app/database instances.
- ❖ Enable **auto-assign public IP** for the public subnet; disable it for the private one.
- ❖ Enable **auto-assign public IP** for the public subnet; disable it for the private one.
- ❖ Place **web server EC2** in the public subnet and **private EC2/RDS** in the private subnet.



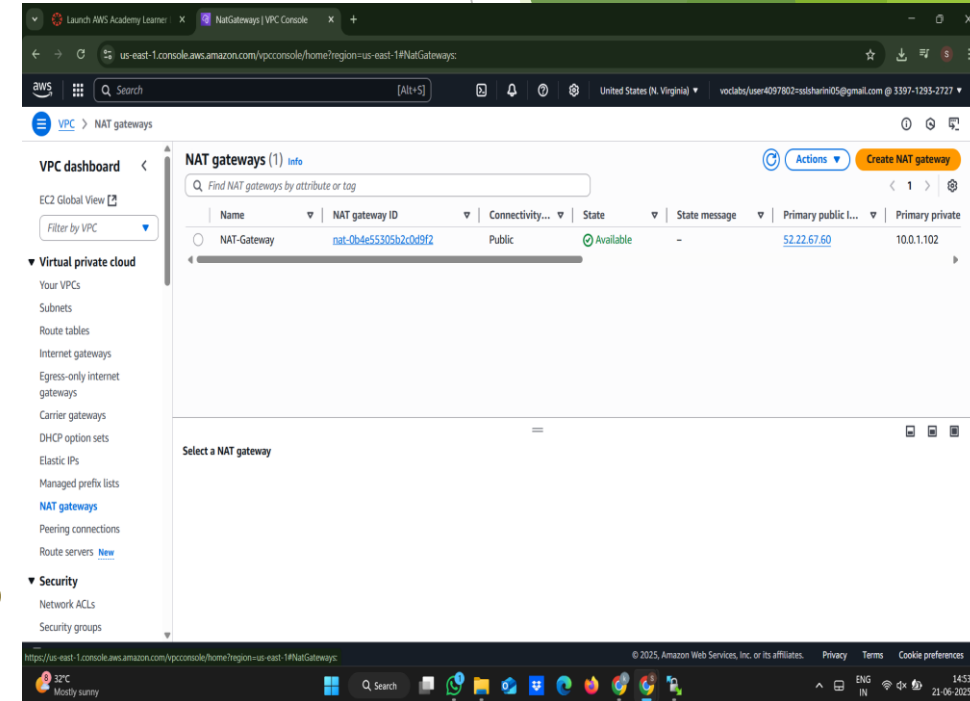
➤ ATTACH INTERNET GATEWAYS

- ❖ Go to VPC Dashboard > Internet Gateways > Create Internet Gateway.
- ❖ Name it and create it.
- ❖ Select the IGW and click Attach to VPC, then choose your VPC.
- ❖ Go to Route Tables, select the public route table, and click Edit routes.
- ❖ Add route: Destination → Target: your Internet Gateway.



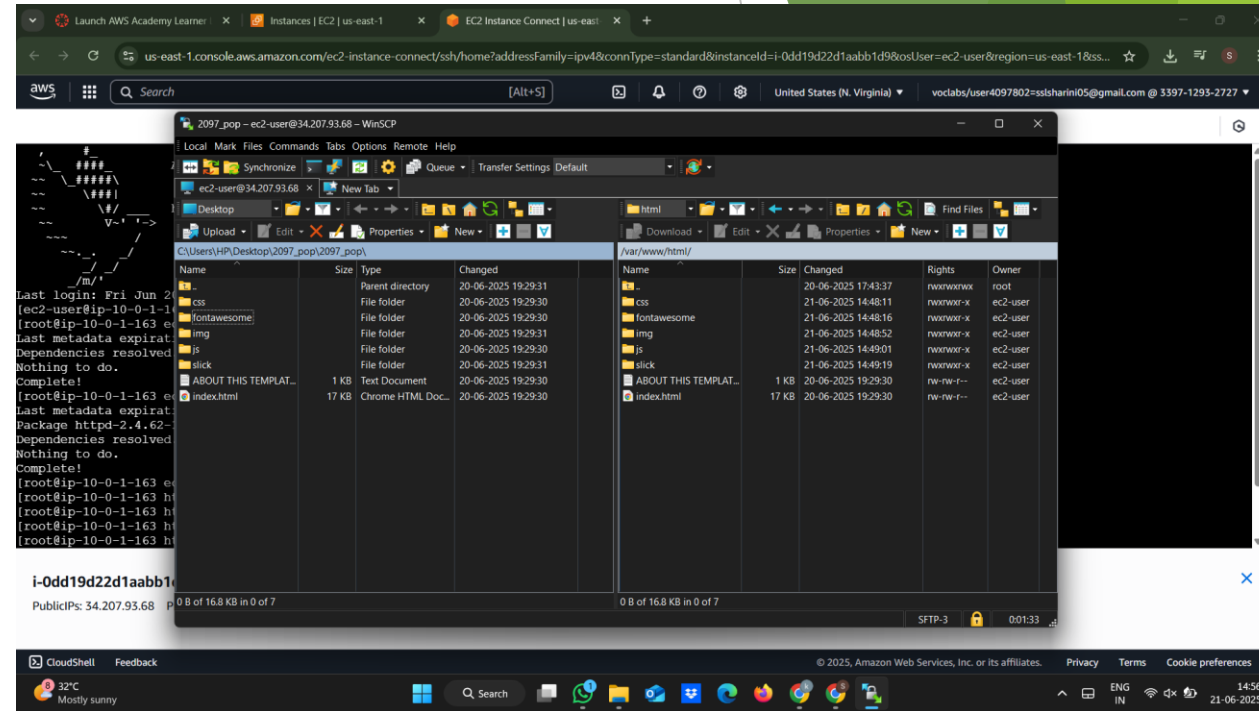
➤ CREATE A NAT GATEWAY

- ❖ Create a VPC with at least two subnets — one public and one private.
- ❖ Attach an IGW to the VPC and route public subnet traffic to the IGW.
- ❖ In the public subnet, create a NAT Gateway with an Elastic IP.
- ❖ Update the private subnet route table to route internet-bound traffic via the NAT Gateway.
- ❖ Deploy web servers (e.g., EC2) in public subnet and app/db servers in private subnet for secure hosting.



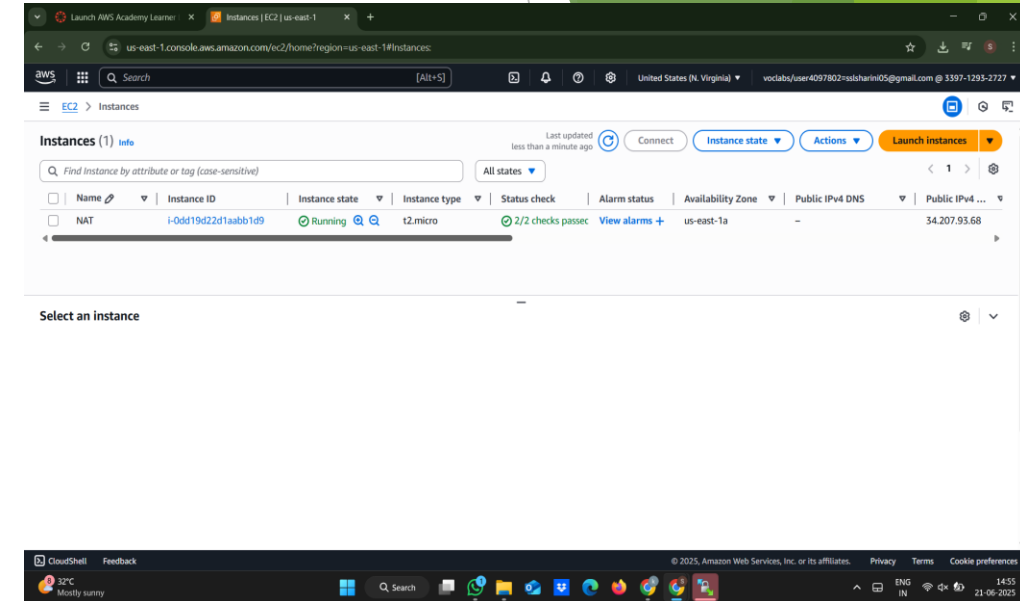
➤ LAUNCH WEB SERVER

- ❖ Launch EC2 in Public Subnet: Deploy a web server (e.g., Amazon Linux) in the VPC's public subnet.
- ❖ Security Group: Allow inbound HTTP/HTTPS (ports 80/443) and SSH (port 22) from trusted IPs.
- ❖ User Data Script: Add a startup script to install and start a web server
- ❖ Elastic IP: Associate an Elastic IP to the EC2 instance for public access.
- ❖ Test Web Access: Open the browser with the EIP to verify the web server is serving content.



➤ CONFIGURE SECURITY GROUPS

- ❖ Create a security group allowing inbound HTTP (80), HTTPS ,and SSH (22) from your IP.
- ❖ Allow inbound traffic only from the web server's SG on required ports.
- ❖ Allow all outbound traffic for updates and internet access (via NAT for private subnets).
- ❖ Assign the web SG to EC2 in the public subnet and app SG to EC2 in private subnet.
- ❖ Ensure the web server is publicly reachable and can securely connect to private-tier servers.



The image is a composite of two screenshots. The left screenshot shows a web browser with a dark-themed page. A modal window titled 'Welcome to Pop Design' is open, featuring a woman in a car and a spiral staircase. The text in the modal states: 'You are NOT allowed to put this template ZIP file for a download purpose on any template collection website. If you have any kind of question or comment, please feel free to [contact us](#). You are welcome. You are allowed to download, modify and use this template for your commercial or business websites. Please tell your friends about [Tooplate](#). That will be very helpful for us. Thank you.' The right screenshot shows the AWS Management Console. The top navigation bar includes the AWS logo, a search bar, and the region 'United States (N. Virginia)'. The main content area is titled 'Your VPCs (1/2)' and contains a table of VPCs. The table has columns for Name, VPC ID, State, Block Public..., IPv4 CIDR, IPv6 CIDR, and DHCP option set. Two VPCs are listed: 'NAT-VPC' (vpc-090df2f6aee614751) and 'vpc-054044ba135eaf86'. Below the table, the details for 'vpc-090df2f6aee614751 / NAT-VPC' are shown. This section includes a 'VPC' card with a 'Show details' link, a 'Subnets (2)' card listing 'us-east-1a' (Public Subnet-NAT) and 'us-east-1b' (Private Subnet-NAT), a 'Route tables (3)' card listing 'rt-NAT(priv)', 'rt-NAT (Pub)', and 'rtb-0cece3a05025c64f6', and a 'Network connections (2)' card listing 'IGW-NAT' and 'NAT-Gateway'.

THANK YOU FOR YOUR ATTENTION....