

Is the Project Achieved the Goal of Providing Security to the Instances??

Setup – Step-by-Step Validation

1. Private EC2 Is Not Publicly Accessible

- You created EC2 instances **without public IPs**.
- These EC2s are in **private subnets**, meaning they can't be accessed directly from the internet.
- You confirmed this by trying to connect only via the **Bastion Host**.

 **Goal Proof:** Ensures high security — EC2s are isolated from direct internet access.

2. Access to Private EC2 Allowed Only via Bastion Host (SSH)

- In **SG-Private-EC2**, you added:
 - **Inbound Rule:** Type SSH, Port 22, Source: **SG-Bastion**.
- This means only EC2s using **SG-Bastion** (your Bastion Host) can SSH into the private EC2.
- Even if your Bastion Host allows connections from "Anywhere", only it has permission to go inside private EC2.

 **Goal Proof:** SSH access is tightly controlled — only through Bastion (not open to the world).

3. Application Traffic Allowed Only via ALB

- You created an **Application Load Balancer (ALB)** in public subnets.
- Target group forwards traffic to private EC2s on **port 8000**.
- In **SG-Private-EC2**, you allowed:
 - **Custom TCP Rule:** Port 8000, Source: **SG-ALB**.
- This allows only traffic coming **through the ALB** to reach your private EC2.

 **Goal Proof:** Public traffic is filtered only via ALB — not directly to EC2.

4. Website Is Visible Only Through the Load Balancer

- You visited the DNS name of the ALB (as seen in the screenshot).
- It loaded a page that says:

"Welcome to My AWS Created on June 3rd -2025 BY THARUN SOMARAJU. This page is hosted on a private EC2 instance via a Bastion Host."

 **Goal Proof:** You're seeing the output from the private EC2, accessed **only** via the **Load Balancer**.

 **Final Security Review**

Component	Publicly Accessible? Why?
Bastion Host	 Yes Required for secure SSH into private EC2s
Private EC2	 No No public IP, only accessible from Bastion & ALB
ALB	 Yes Entry point for HTTP/8000 traffic
Private EC2 Port 8000	 Only via ALB Port 8000 open only to SG-ALB, not to the world
Private EC2 Port 22	 Only via Bastion SSH port open only to SG-Bastion

THEREFORE, ACHIEVED THE GOAL BY CREATING THE SECURITY TO THE INSTANCES