**Task Description**

Launch two ec2-instances and connect it to an application load balancer, where the output traffic from the server must be an load balancer IP address

**Step 1: Launch Two EC2 Instances**

* Navigate to **EC2** and click on **Launch Instances**.
* Configure the instances:
* Choose an AMI (Amazon Linux)
* Choose an instance type (e.g., t3.micro).
* Configure security groups:
  + Allow traffic on port 80 (HTTP) or the port your application listens to.
  + Allow SSH (port 22) from a trusted IP address (optional for debugging).
* Launch the instances.

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**Step 2: Install Application on Both Instances**

* Install and Configure a Web Server (Apache or Nginx)

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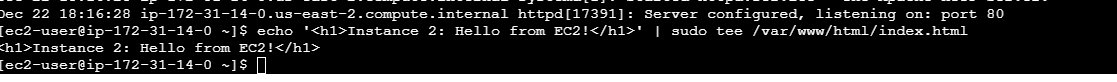
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* Start and Enable Apache

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* Configure the Web Server



**Step 3: Create an Application Load Balancer (ALB)**

* Navigate to EC2 Dashboard > Load Balancers

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Click **Create Load Balancer** > **Application Load Balancer**.

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Configure the ALB:

* **Scheme**: Choose "Internet-facing" or "Internal" based on your requirements.
* **Listeners**: Add a listener for HTTP or HTTPS.
* **Availability Zones**: Select the AZs where your instances are located.

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**Target Group**:

* Create a new target group.
* Add the EC2 instances to the target group.
* Use "Instance ID" as the target type.

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**Step 4. Ensure Outgoing Traffic Comes from Load Balancer IP**

**Create a NAT Gateway**:

* Go to **VPC** > **NAT Gateways**.
* Create a NAT Gateway in a public subnet with an Elastic IP.
* Associate it with the correct route table.

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**Update the Route Table**:

* Go to **VPC** > **Route Tables**.
* Find the route table for the private subnets where your EC2 instances are located.
* Add a route for 0.0.0.0/0 pointing to the NAT Gateway.

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Ensure Proper Security Groups:

* Allow outgoing traffic from EC2 instances for required ports.
* Update the ALB's security group to allow only necessary inbound traffic**.**

**Restrict Direct Internet Access for EC2 Instances**

**Edit EC2 Security Groups:**

* Go to EC2 Dashboard > Instances > Security Groups.
* Restrict the inbound rules to only accept traffic from the Load Balancer's security group.
* For outbound traffic, allow only traffic to the NAT Gateway or required destinations.

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**Step 5: Test the Setup**

* Obtain the DNS name of the Load Balancer (loadbalance2-2006092156.us-east-2.elb.amazonaws.com).
* Verify that accessing the Load Balancer distributes requests to the two EC2 instances.
* Use a tool like curl or a browser to confirm the responses.

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