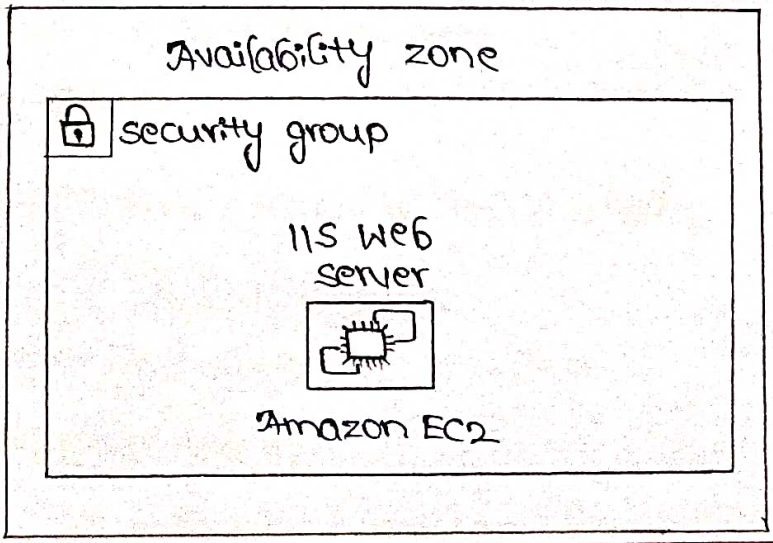
Lab-3:-

Aim:- To introduce a Amazon EC2.

Description:-

Amazon Elastic compute cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier of developers. Amazon EC2 simple web services interface allows you to obtain and configure capacity with minimal friction. It provides you with complete control of our computing resources and lets we run on Amazon's proven computing environment. Amazon EC2 changes the economics of computing by allowing to pay only for capacity that actually use. Amazon EC2 provides developers the tools to build failure resilient applications and isolate themselves from common failure scenarios.

Architecture:-



Steps followed to introduce a Amazon EC2 console management:.

* choose [start lab] to launch the lab.
* Wait until we see the message "Lab status: ready".
* choose [AWS].

Task-1: Launch Amazon EC2 instance:.

* In the AWS management console, choose services, choose compute and then choose EC2.
* choose the launch instance menu and select launch instance.

Step-1: Name and tags.

* Give the instance the name Web server.

Step-2: Application and OS Images [Amazon machine Image]:.

* Keep default Amazon Linux AMI selected.
* Also keep the default Amazon Linux 2023 AMI selected.

Step-3: Instance type:.

* In the Instance type panel, keep the default t2.micro selected.

Step-4: Key pair [login]:.

* For key pair name - required, choose vockey.

Step-5: Network settings:.

* Next to network settings, choose Edit.
* For vpc, select Lab vpc.

* Under Firewall (security groups), choose ⊙ Create security group and configure.
  - security group name: Web server security Group.
  - Description: security group for my web server.
  - under Inbound security group rules, Remove exists rules.

Step-6:- configure storage:-

* In configure storage section, keep the default settings.

Step-7:- Advanced details:-

* Expand ▸ Advanced details
* For Termination protection, select Enable.
* Scroll the bottom of page and then copy and paste the code shown below into the user data box:-

```
#!/bin/bash
dnf install -y httpd
systemctl enable httpd
systemctl start httpd
echo '<html><h1>Hello From your web server!</h1></html>'
        > /var/www/html/index.html
```

Step-8: Launch the instance:-

* In summary panel, choose Launch instance.
* Choose view all instances.
  - In instance list, select ☑ web server.
  - Review the information displayed in the Details tab.

* wait for instance to display the following:
  - Instance state: Running
  - Status check: 2/2 checks passed.

Task-2:. monitor the instance:.

* Choose the status checks tab.
* Choose the monitoring tab.
* In the Actions ▾ menu, select monitor and troubleshoot ▸ Get system log.
* The HTTP package was installed from the user data that added when we created the instance.
* Choose cancel
* Ensure web server is still selected. In the Actions ▾ menu, select monitor and troubleshoot ▸ Get instance screenshot.
* Choose cancel

Task-3:. update the security Group and Access the web server:.

* Ensure web server is still selected. Choose the Details tab.
* Copy the public IPv4 address of our instance.
* Open a new tab in your web browser, paste the IP address you just copied. then press Enter.
* Keep the browser tab, but return to the EC2 console tab.
* In navigation pane, choose security Groups.
* select ■ web server security group.

* Choose the Inbound rules tab.
* Choose the Edit inbound rules, select Add rule and then configure.
    - Type: HTTP
    - Source: Anywhere - IPV4
    - Choose save rules.
* Return to web server tab and refresh the page.

Task-4: Resize the Instance: Instance Type and EBS volume:.
Stop the Instance:.

* On the EC2 management console in navigation pane, choose Instances. web server should already be selected.
* In Instance State ▼ menu, select stop instance.
* Choose Stop.
* Wait for the Instance state to display: stopped.

Change the instance type:.

* In Action ▼ menu, select Instance settings ▶ Change instance type, then configure:
    - Instance Type: t2.small
    - Choose Apply.

Resize the EBS Volume:.

* Choose the Storage tab.
* In the Action menu, select Modify volume.
* Increase the size of disk and change the size to: 10.
* Choose Modify.

* choose modify again to confirm and increase the size of volume.

Start the Resized Instance:-

* In navigation pane, choose Instances.
* select the web server instance.
* In the instance state ▼ menu, select start instance.

Task-5: Explore EC2 Limits:-

* In AWS management console, In services, search for and choose service Quotas.
* choose AWS services from navigation menu and search for ec2. and choose Amazon Elastic compute cloud [Amazon EC2].
* In Find quotas search bar, search for running on-demand.

Task-6: Test termination protection:-

* In AWS management console, In services, search for and choose EC2 to return to EC2 console.
* In navigation pane, choose Instances.
* select the web server instance and in instance state ▼ menu, select terminate instance.
* Then choose terminate.
* In Action ▼ menu, select Instance settings ▶ change termination protection.
* Remove the check next to ☐ Enable
* choose save, we can now terminate the instance.

* select the web server instance again and in Instance state menu, select Terminate instance.
* Choose Terminate.
* Choose END LAB and choose YES to confirm that we want to end the lab.