- **Create Application Load balancer**
  - **Start a simple server in private EC2 8880**
  - **Target ALB to serve that server**
  - **ALB should be accessible through port 80 listener**
  - **Health Check**
    - **Register healthy on 3 success**
    - **Register unhealthy on 5 success**
    - **Timeout 5 Seconds**
    - **Interval 45 Seconds**
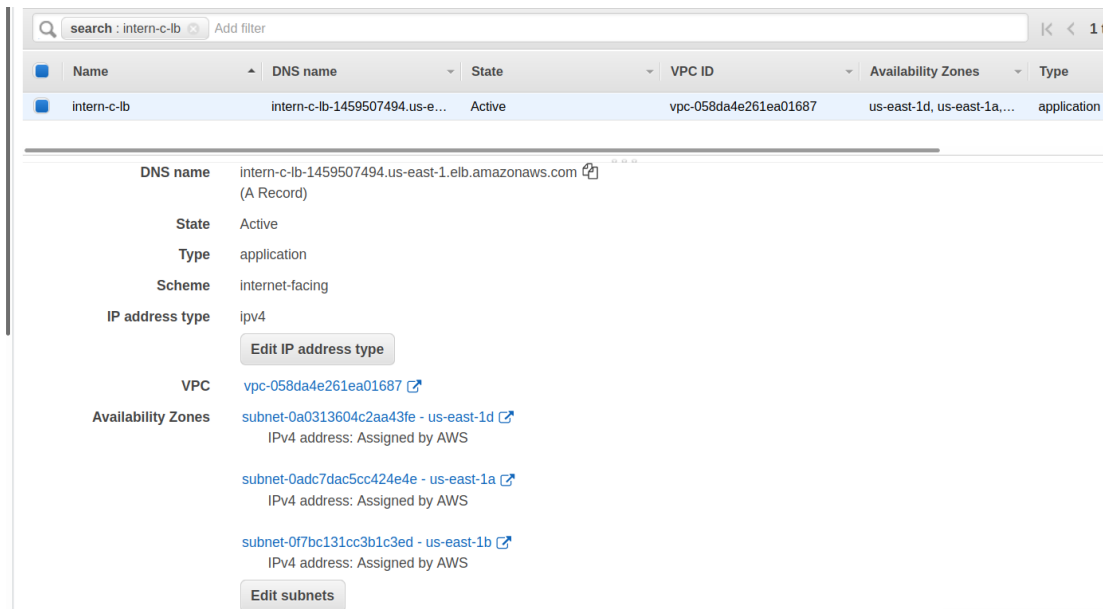 - **Access the server via ALB publicly using ALB's DNS name.**

Application Load balancer was created by Selecting Load Balancer option on left side and Selecting 'Create Load Balancer' button.

Name of load balancer and listener is provided as http port 80 and subnets are assigned:

Then Target group is created with name intern-c-tgt with health check options:

After this, we selected our instance and created the Load Balancer, which can be seen as:
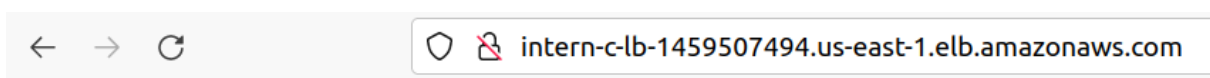

Then after selecting the target group, we have to register our target for a private subnet since our application is to be hosted on a private subnet.

Now, we serve an index.html page from inside the assigned subnet:
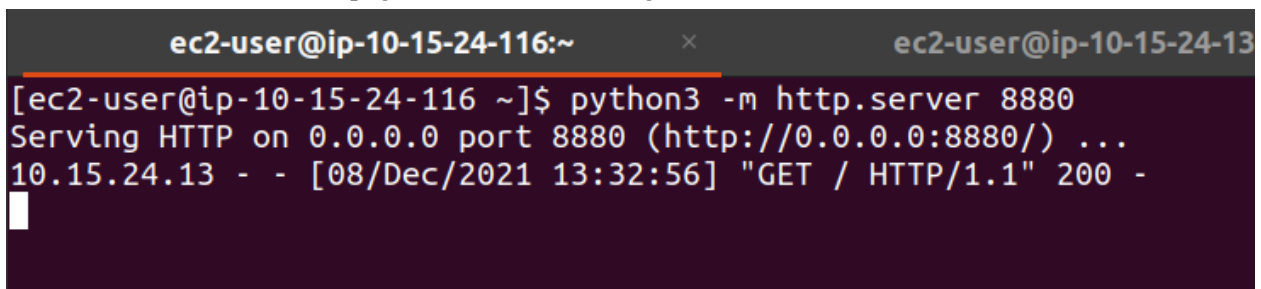
We then allow port 8880 from our security group and after this, when we enter the dns name in the browser, we can see our page being served.

the sever from private

- **Create Route53 Hosted Zone**
    - **Either use your own Domain if you have as <team-name>.<your-domain> OR** use mine ie intern.amitj.com.np **to create new HZ for your use in pattern <team-name>.intern.amitj.com.np**.
    - **Show nslookup result for your domain.**
    - **Add R53 entry to map above created ALB at URL alb.<team-name>.<your-domain>**

To create Route53 hosted zone, we can search Hosted Zones in search bar, which will take us to Route53 services page and we can select Hosted Zones and 'create hosted zone'

And inside the hosted zone, we created a record by clicking Create Record button and routed the traffic to our private subnet by adding A Record:

- Create ACM for above created R53 HZ with both top subdomain and its wild card ie **\<team-name\>.\<your-domain\>** and ***.\<team-name\>.\<your-domain\>**
- Update ALB
  - Accept request only when **Host = alb.\<team-name\>.\<your-domain\>**, with default action response Code: 503, Message: "Unknown Request" on both HTTP and HTTPS requests.
  - Enable HTTPS support.
  - Redirect HTTP to HTTPS.

ALB was updated to accept the request only when host is alb.intern-c.intern.amitj.com.np

And rules were created for HTTP port 80 whenever accessed redirects the traffic via port 443 which is HTTPS.

- (Optional) Create Private Route53 with domain **\<team-name\>.vpc-local** and attach it to your VPC with DNS resolve enabled.
  - Add A Record to map Private EC2's Private IP to **ec2.\<team-name\>.vpc-local**.
  - Run telnet **ec2.\<team-name\>.vpc-local** 22, from public EC2 and verify it gets connected.

Again, a hosted zone is created with type private:

Domain name Info
This is the name of the domain that you want to route traffic for.

intern-c.vpc-local

Valid characters: a-z, 0-9, ! " # $ % & ' ( ) * + , - / : ; < = > ? @ [\ ] ^ _ ` { | } . ~

Description - *optional* Info
This value lets you distinguish hosted zones that have the same name.

intern c vpc local

The description can have up to 256 characters. 18/256

Type Info
The type indicates whether you want to route traffic on the internet or in an Amazon VPC.

○ **Public hosted zone**
A public hosted zone determines how traffic is routed on the internet.

● **Private hosted zone**
A private hosted zone determines how traffic is routed within an Amazon VPC.

A record is created as:

Route 53 > Hosted zones > intern-c.vpc-local > Create record

Quick create record Info   **Switch to wizard**

▼ Record 1   **Delete**

Record name Info   Record type Info   Value Info   ⬤ Alias

ec2   .intern-c.vpc-local | A – Routes traffic to an IPv4 address and so... ▼ | 10.15.24.116

Valid characters: a-z, 0-9, ! " # $ % & ' ( ) * + , - / : ; < = > ? @ [
\ ] ^ _ ` { | } . ~   Enter multiple values on separate lines.

TTL (seconds) Info   Routing policy Info

300 | Simple routing   ▼ |

| 1m | 1h | 1d |

Recommended values: 60 to 172800 (two days)

                                                                 Add another record

                                                      Cancel   **Create records**

▶ View existing records

And running the Telnet command:

```
[ec2-user@ip-10-15-24-13 ~]$ telnet ec2.intern-c.vpc-local 22
Trying 10.15.24.116...
Connected to ec2.intern-c.vpc-local.
Escape character is '^]'.
SSH-2.0-OpenSSH_7.4
```