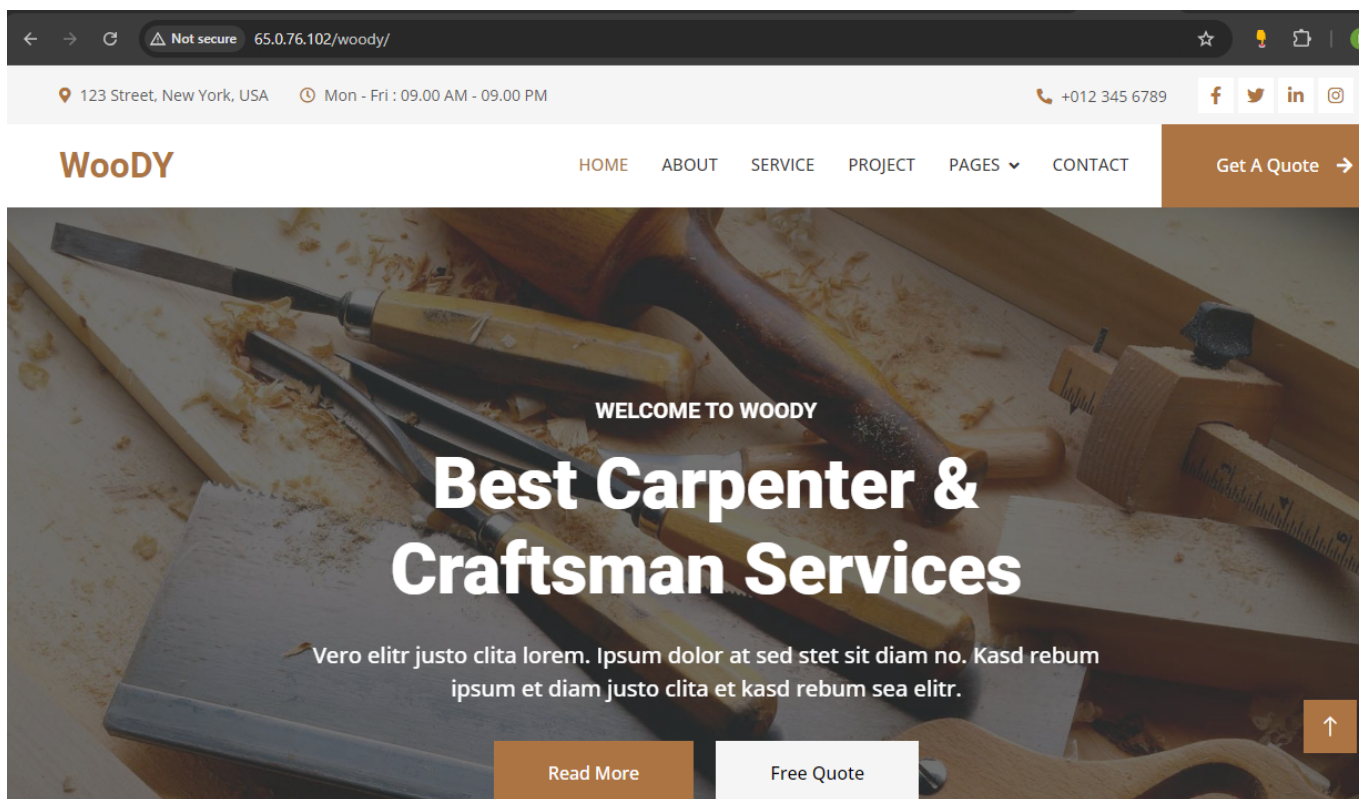


Load Balancing in AWS

- We will try static scaling
- On the ec2 instances in web subnet lets have a sample web page [Refer Here](#)
- Setup:
 - Lets create a vpc with 2 public and 2 private subnets
 - on the ec2 instances in public subnets lets configure sample website
 - This website will be hosted on 80 port and 22 port is required to ssh and install website.
- Commands

```
sudo apt update
sudo apt install nginx unzip -y
cd /tmp
wget https://www.free-css.com/assets/files/free-css-templates/download/page294/woody.zip
unzip woody.zip
sudo mv carpenter-website-template/ /var/www/html/woody
# Now navigate to http://<public-ip>/woody
```



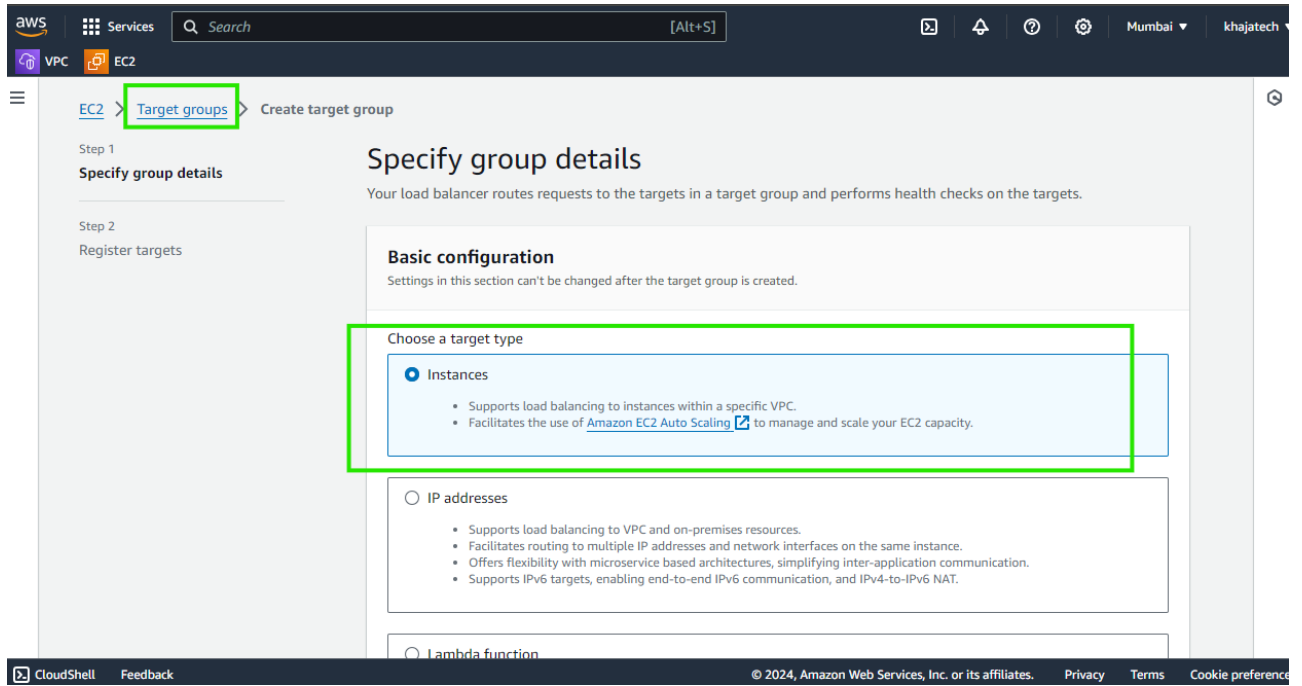
- We have two ec2 instances with same application

The diagram shows a VPC (Virtual Private Cloud) containing four EC2 instances arranged in a 2x2 grid. The top-left instance is labeled 'web-1' and contains a stack of orange server icons. The top-right instance is labeled 'db-1'. The bottom-left instance is labeled 'web-2' and also contains a stack of orange server icons. The bottom-right instance is labeled 'db-2'. A yellow padlock icon is positioned above each instance, indicating they are locked. An orange cloud icon labeled 'VPC' is located in the top right corner of the diagram.

The screenshot below shows the AWS Management Console interface. The top navigation bar includes the AWS logo, 'Services', a search bar, and the user's name 'khajatech'. The left sidebar shows the 'EC2' section expanded, with 'Load Balancing' and 'Load Balancers' highlighted. The main content area shows the 'Load balancers' page, which includes a 'Create load balancer' button and a table with columns for Name, DNS name, State, VPC ID, and Availability. The table is currently empty, displaying the message 'No load balancers' and 'You don't have any load balancers in ap-south-1'. Below the table, it shows '0 load balancers selected' and a 'Create load balancer' button.

- Target Groups in a load balancers section represent a set of server where the traffic has to be forwarded by the load balancer
- Target group can be
 - ec2 instances
 - ip addresses
 - lambda function
 - Application load balancer

- Now lets create a target group with web-1, web-2 instnaces



VPC

Select the VPC with the instances that you want to include in the target group. Only VPCs that support the IP address type selected above are available in this list.

lb-demo-vpc
vpc-003a62d25444e5afa
IPv4 VPC CIDR: 10.0.0.0/16

Protocol version

- HTTP1
Send requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.
- HTTP2
Send requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC, but gRPC-specific features are not available.
- gRPC
Send requests to targets using gRPC. Supported when the request protocol is gRPC.

Health checks

The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

Health check protocol

HTTP

Health check path

Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred.

/

Up to 1024 characters allowed.

Advanced health check settings

Restore defaults

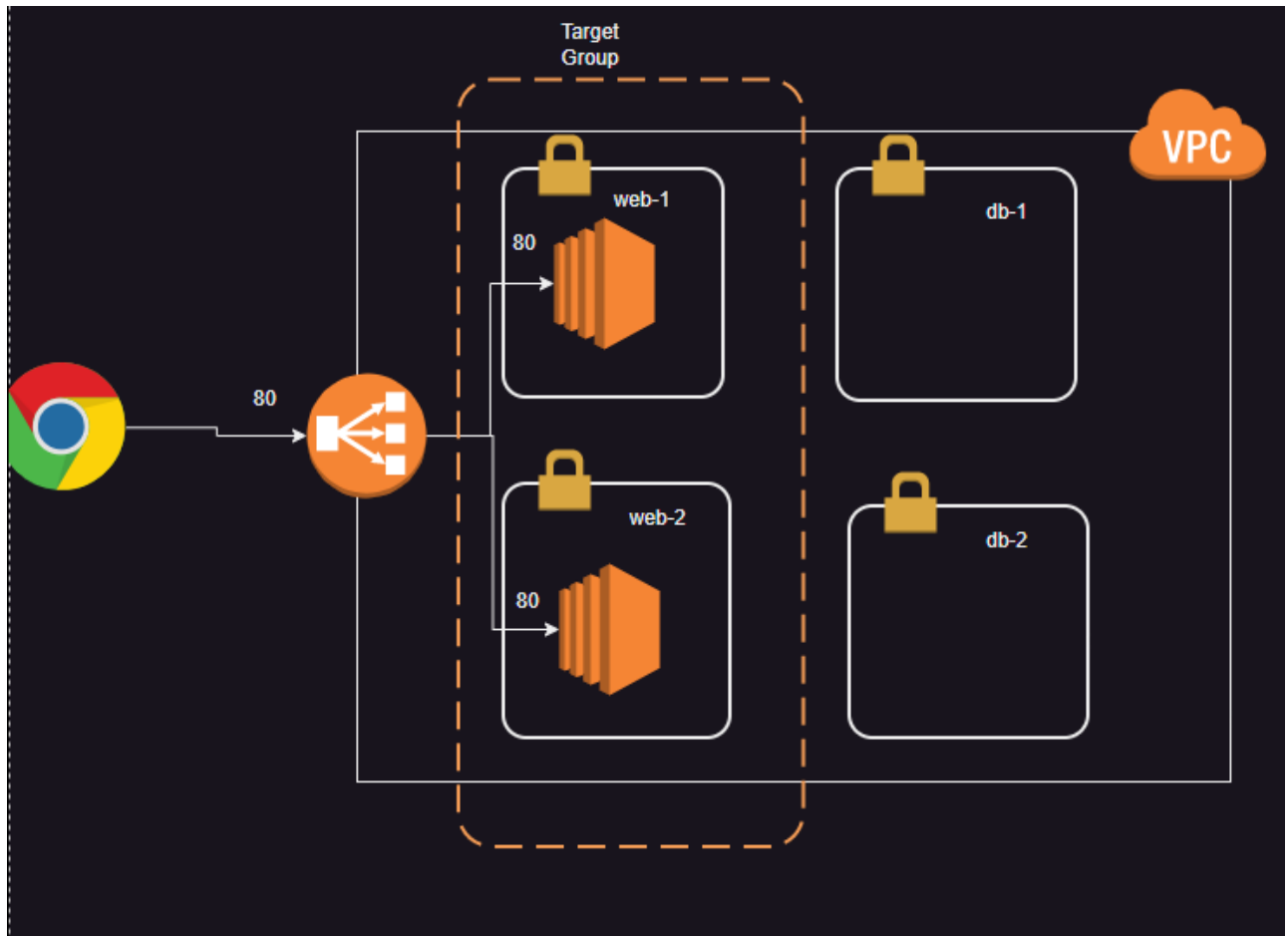
Health check port

The port the load balancer uses when performing health checks on targets. By default, the health check port is the same as the target group's traffic port. However, you can specify a different port as an override.

- Traffic port
- Override

--

- Now lets add a load balancer



- Note: view the recording for screen shots

Lets implement Layer 4 LB with ec2 instances without public ips

- Create a vpc with 2 public and 2 private subnets
- To be continued in the next session

AWS Loadbalancer types

- AWS has the following load balancer types
 - Application Load Balancer:
 - This is Layer 7 LB
 - Network Load Balancer
 - This is Layer 4 LB
 - Gateway Load Balancer
 - This is Layer 2 LB for forwarding/inspecting network traffic.
 - Classic Load Balancer: This is old generation load balancer which supports both Layer 4 and Layer 7 load Balancing. Not recommended to use