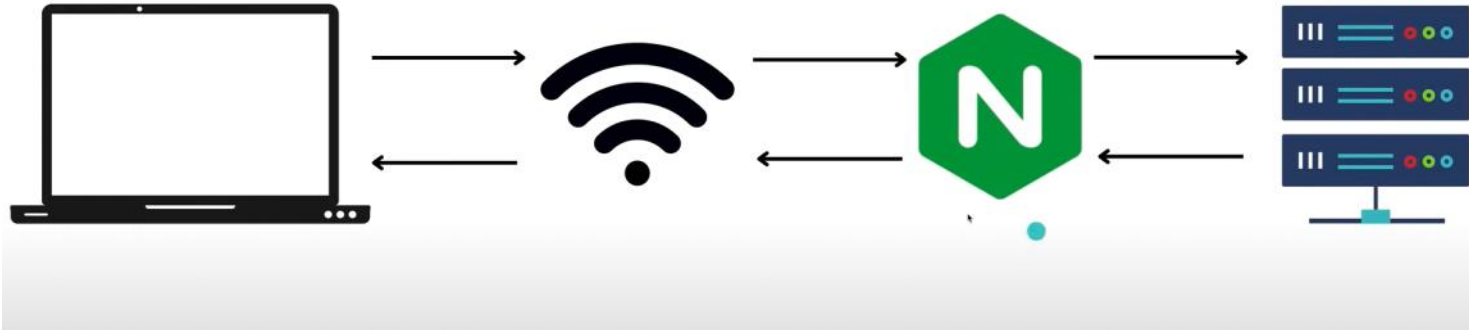


NGINX

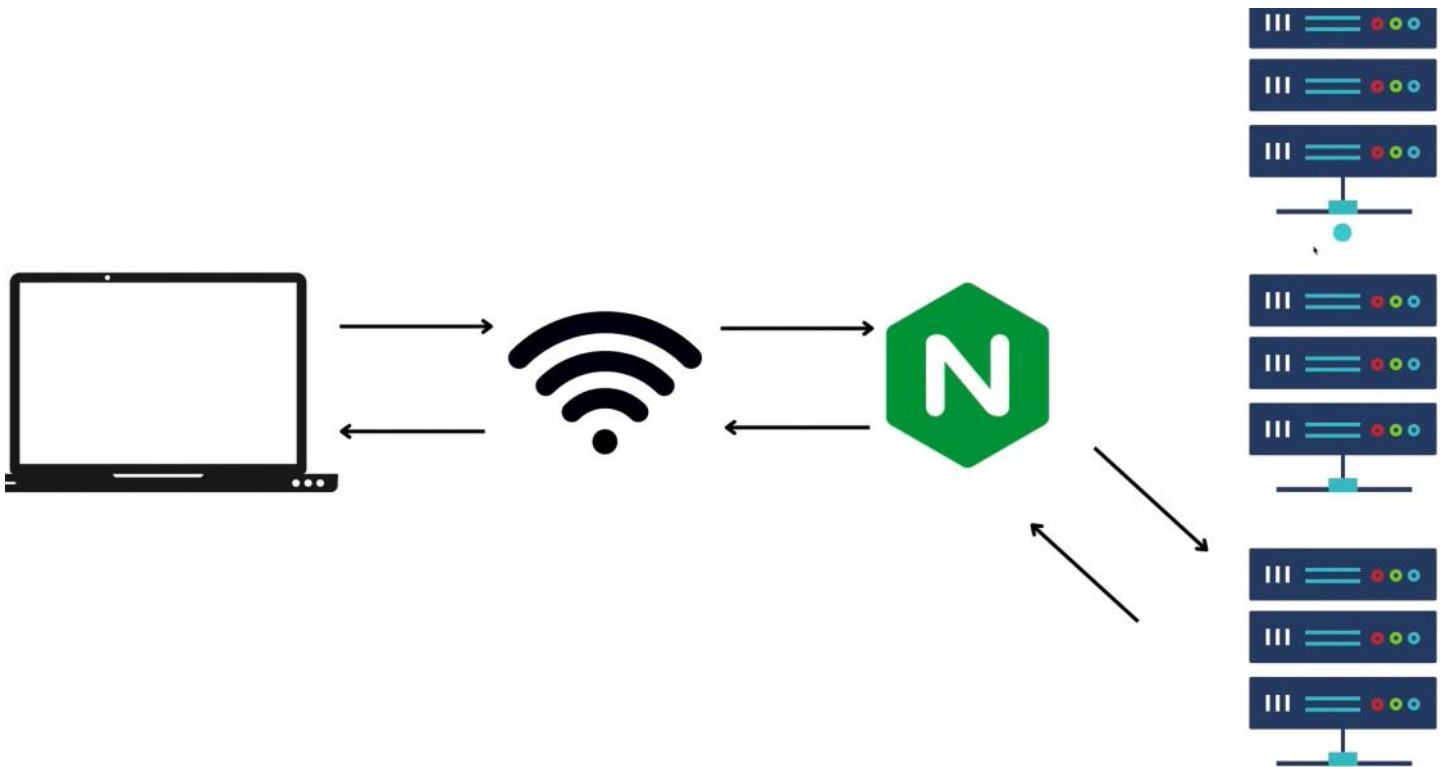
11 November 2024 21:42

★ By Laith Academy

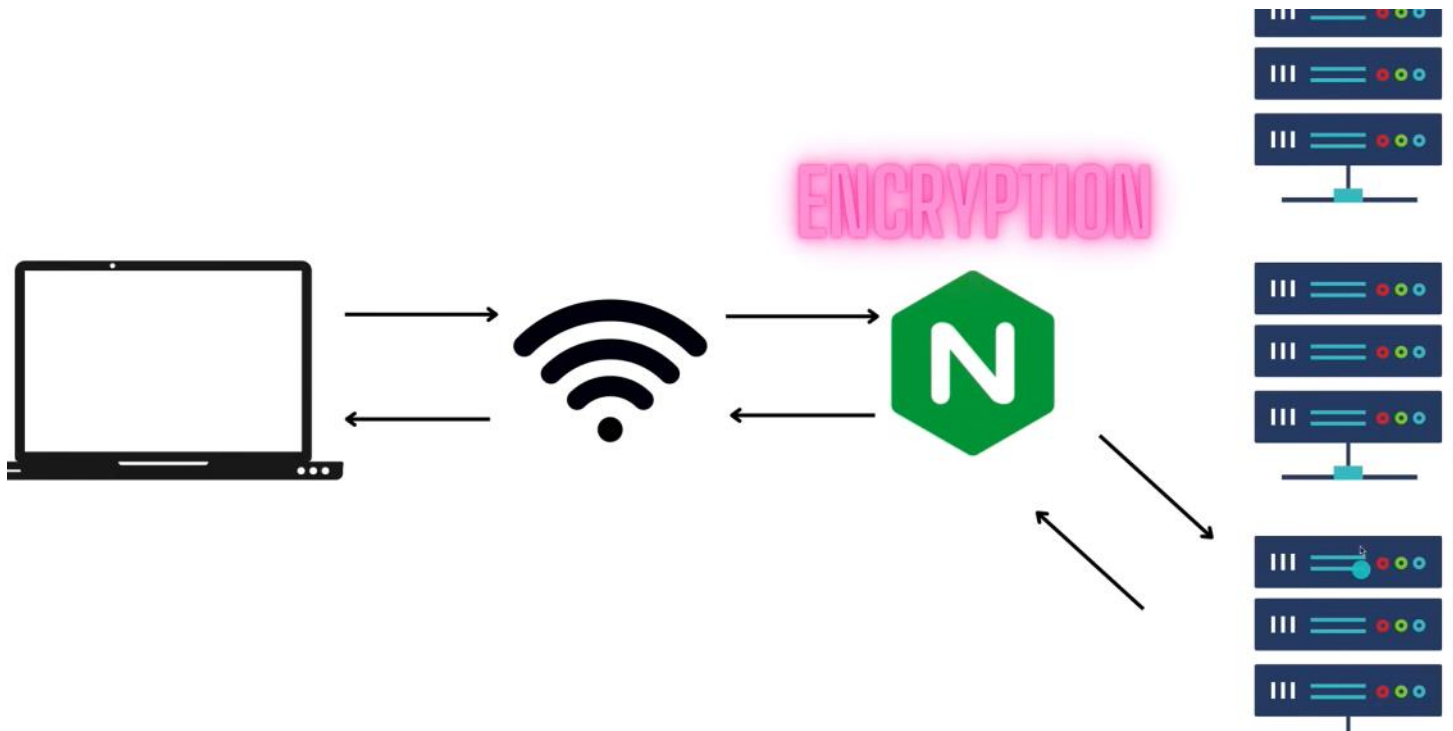
Nginx is typically known as a server which serves web contents to our browser.



It is working as an reverse proxy.



Here Nginx can act as an load balancer.



It also provides Encryption.

To install nginx in your terminal and access it on your local browser.

```
→ sudo apt-get update
→ sudo apt-get install nginx
→ sudo systemctl start nginx
→ sudo systemctl enable nginx
→ http://localhost
```

NGINX TERMINOLOGY -

Nginx have directives in it nginx.conf file which are key value pair.

NGINX SERVING STATIC CONTENT -

Now we gonna create an html file anywhere and open it in vscode and now we gonna run this html file using nginx server for this we will edit nginx.conf file by going into it directory and as if dealing with http responses we need to use http context.

We give the path in the server block of the folder which we want to serve by it and use listen that on which port for this it needs to be done.

<http://localhost:8080/>

Type needs to be defined in nginx if we want to add css with the html file in our html site.

For hard reload in browser user CMD+SHIFT+R.

NGINX CONF. FILE VERSION to simple run the html css file.

★ NGINX CONF.

```
http{
    types {
        text/css    css;
        text/html   html;
    }
    server{
        listen 8080;
        root /home/sanskar/mysite;
    }
}
events {}
```

★ INDEX.HTML

```
<!DOCTYPE html>
<html>
<head>
    <meta charset="UTF-8"/>
    <title>My Nginx Project</title>
    <link rel="stylesheet" href="./styles.css">
</head>
<body>
    <h1>Hello my friends. I am served from NGINX</h1>
</body>
</html>
```

★ STYLES.CSS

```
h1{
    background-color: pink;
    color: aqua;
}
```

Can use mime types instead of defining types.

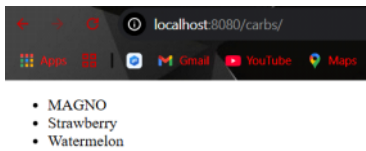
```
include mime.types;
```

LOCATION BLOCK -

```
location /fruits {
    root /home/sanskar/mysite;
}
```

Alias can be also used in this.

```
location /carbs {
    alias /home/sanskar/mysite/fruits;
}
```



By default it looks for index.html but we can specify files and user directives like try_files.

```
location /vegetables {
    root /home/sanskar/mysite;
    try_files /vegetables/veggies.html /index.html =404;

location ~* /count/[0-9] {
    root /home/sanskar/mysite;
    try_files /index.html =404;
}
```

★ REDIRECTS AND REWRITES

307 an http code to redirect the user.

```
location /crops {
    return 307 /fruits;
}
```

```
rewrite ^/number/(\w+) /count/$1;
```

★ Configure Nginx as an Load Balancer

Round Robin Algorithm or Approach.

Now to do load balancing we have to creating multiple servers for this we are gonna user docker.

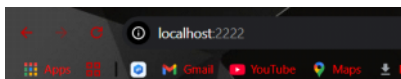
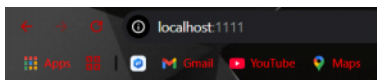
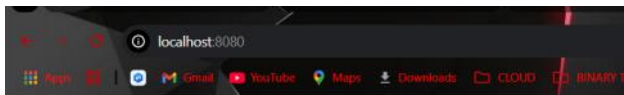
Creating file name as index.js inside server folder.

Now using terminal and going to the server directory and then initialize an node application init using npm.

- **npm init -y**
- **npm install express**

After installing docker and creating js application and creating docker image of it and assigning 7777 port of application to the new 4 containers using the image we created for js application we are those servers into the nginx.conf file.

```
upstream backendserver{
    server 127.0.1.1111;
    server 127.0.1.2222;
    server 127.0.1.3333;
    server 127.0.1.4444;
}
```



I am a endpoint

```
sanskar@SANSKAR: ~
sanskar@SANSKAR:~$ vim check.sh
sanskar@SANSKAR:~$ ./check.sh
-bash: ./check.sh: Permission denied
sanskar@SANSKAR:~$ chmod 777 check.sh
sanskar@SANSKAR:~$ ./check.sh
Testing nginx round-robin load balancing...
Press Ctrl+C to stop
-----
I am a endpoint - Tue Nov 12 16:59:50 IST 2024
I am a endpoint - Tue Nov 12 16:59:51 IST 2024
I am a endpoint - Tue Nov 12 16:59:52 IST 2024
I am a endpoint - Tue Nov 12 16:59:53 IST 2024
I am a endpoint - Tue Nov 12 16:59:54 IST 2024
I am a endpoint - Tue Nov 12 16:59:55 IST 2024
I am a endpoint - Tue Nov 12 16:59:56 IST 2024
I am a endpoint - Tue Nov 12 16:59:57 IST 2024
I am a endpoint - Tue Nov 12 16:59:58 IST 2024
I am a endpoint - Tue Nov 12 16:59:59 IST 2024
I am a endpoint - Tue Nov 12 17:00:00 IST 2024
I am a endpoint - Tue Nov 12 17:00:01 IST 2024
I am a endpoint - Tue Nov 12 17:00:02 IST 2024
I am a endpoint - Tue Nov 12 17:00:03 IST 2024
I am a endpoint - Tue Nov 12 17:00:04 IST 2024
I am a endpoint - Tue Nov 12 17:00:05 IST 2024
I am a endpoint - Tue Nov 12 17:00:06 IST 2024
I am a endpoint - Tue Nov 12 17:00:07 IST 2024
I am a endpoint - Tue Nov 12 17:00:08 IST 2024
I am a endpoint - Tue Nov 12 17:00:09 IST 2024
```

```
#!/bin/bash
echo "Testing nginx round-robin load balancing..."
```

```
echo "Press Ctrl+C to stop"
echo "....."
```

```
while true; do
  curl -s http://localhost:8080/ | tee -a responses.log
  echo " - $(date)"
  sleep 1
done
```