Nginx Assignment.

1. What is the advantage of using a “reverse proxy server”?

These **proxy servers** can interpret network traffic, so they are used to cache web pages and files, making it easier and faster for users to access them. HTTP **proxies** can affect multiple connections at the same time without their speeds taking a serious hit.

2. Why and where Nginx is a better choice than apache.

When many requests are coming concurrently. As nginx is light weight compared to apache and when we do not need much pre installed modules.

3. What are worker nodes and worker connections? How to calculate the max server capacity using the above two?

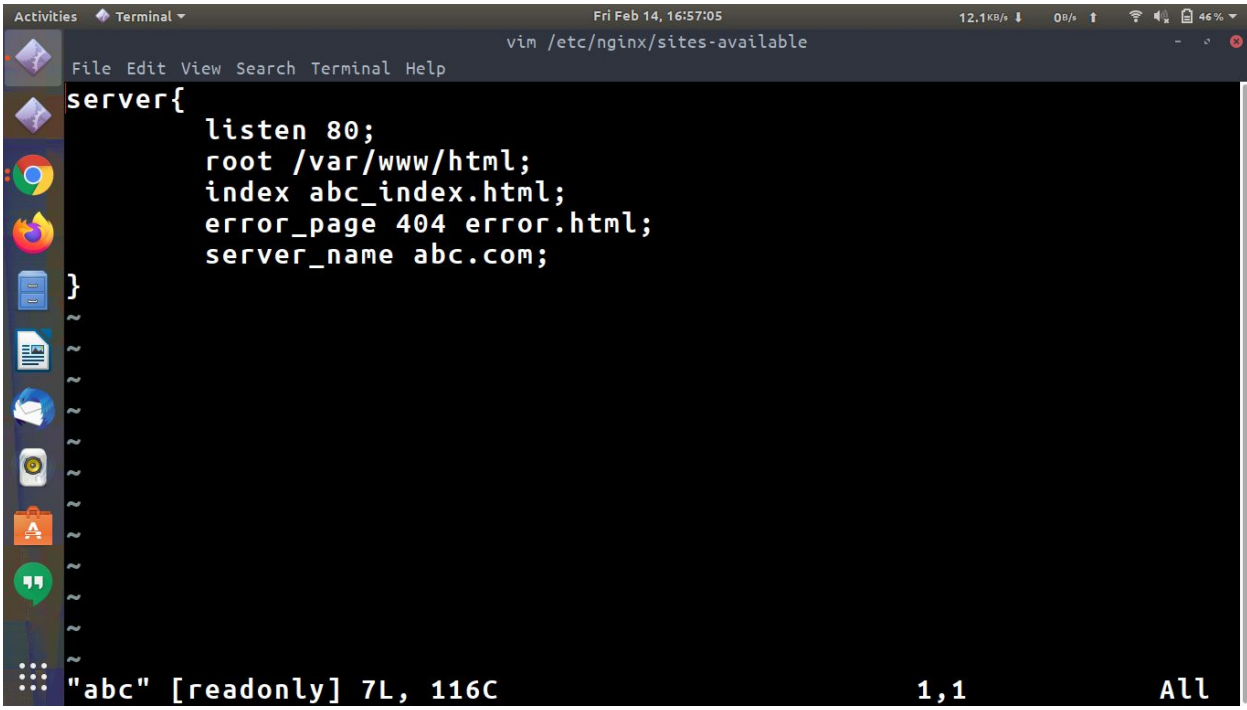
`worker_processes` – The number of NGINX worker processes (the default is 1. In most cases, running one worker process per CPU core works well, and we recommend setting this directive to `auto` to achieve that. There are times when you may want to increase this number, such as when the worker processes have to do a lot of disk I/O.

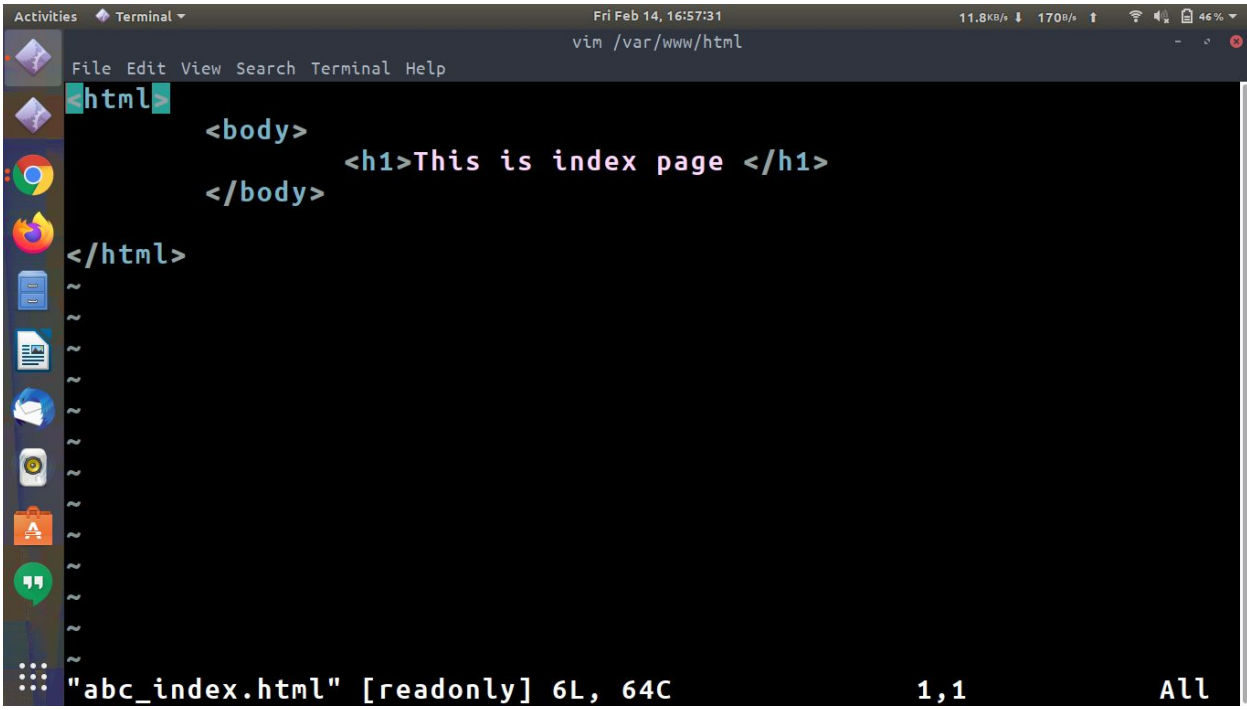
`worker_connections` – The maximum number of connections that each worker process can handle simultaneously. The default is 512, but most systems have enough resources to support a larger number. The appropriate setting depends on the size of the server and the nature of the traffic, and can be discovered through testing.

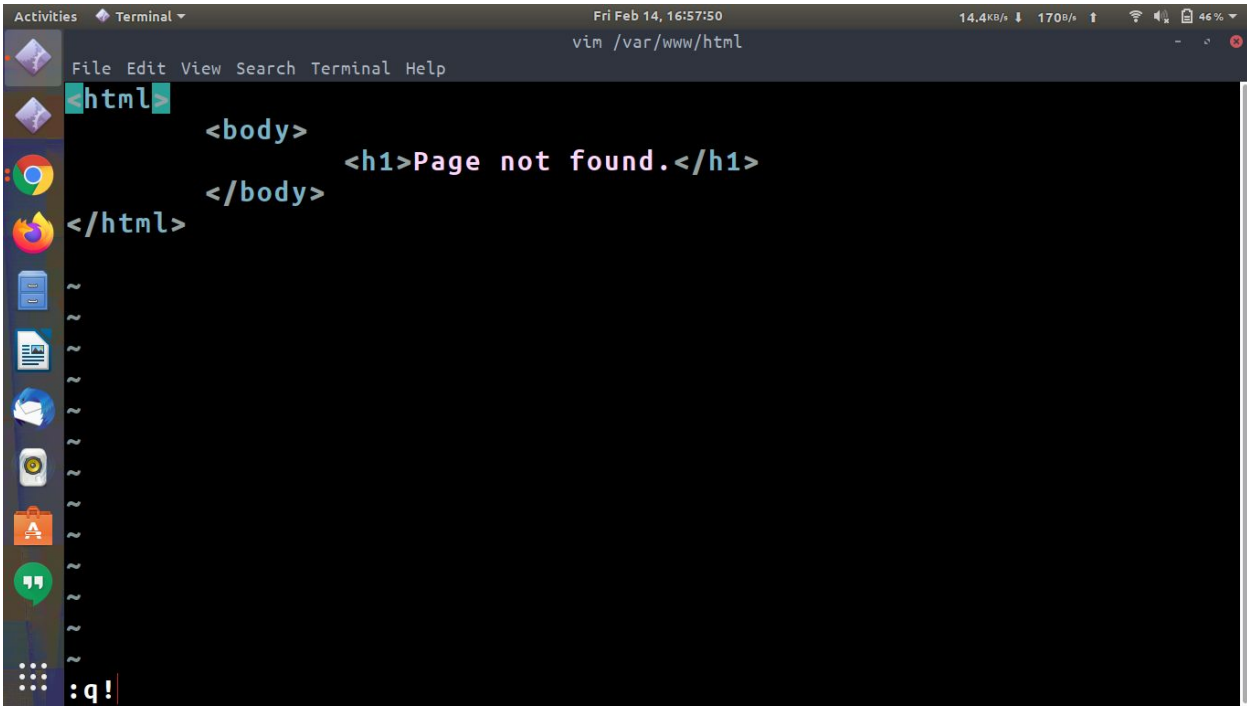
4. From what directory will NGINX automatically load server (virtual host) configurations when using the default /etc/nginx/nginx.conf configuration?

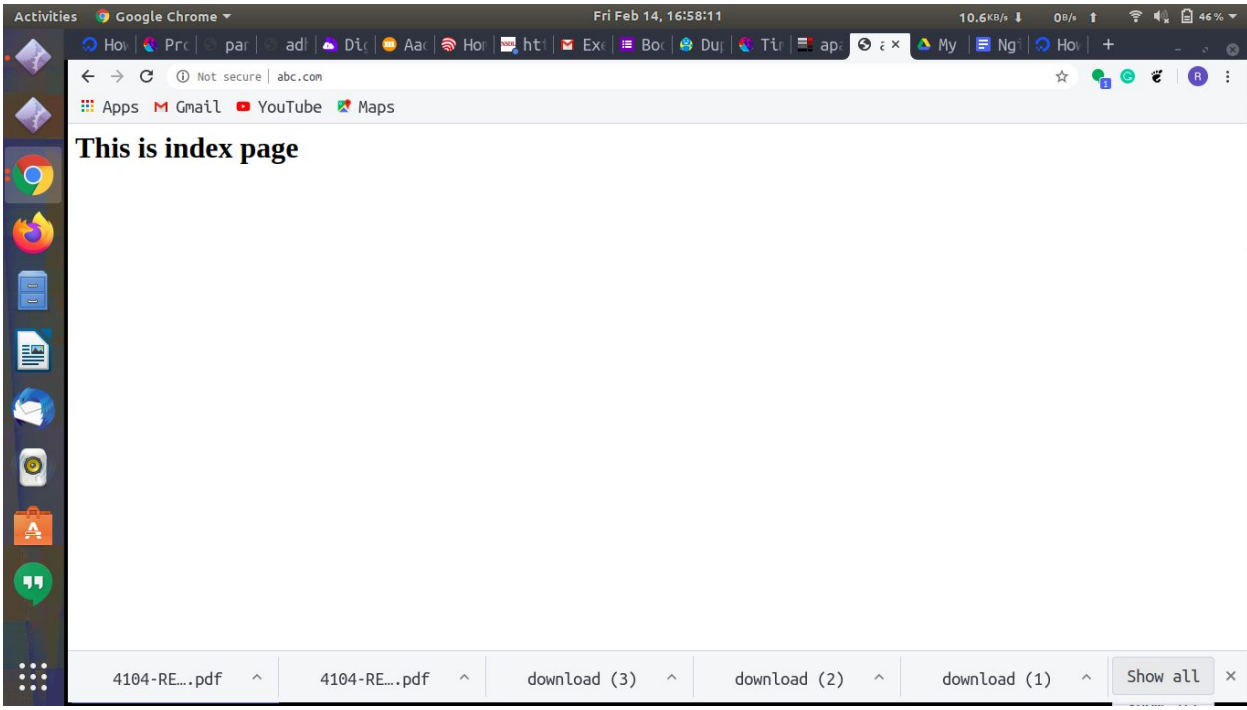
/etc/nginx/sites-enabled.

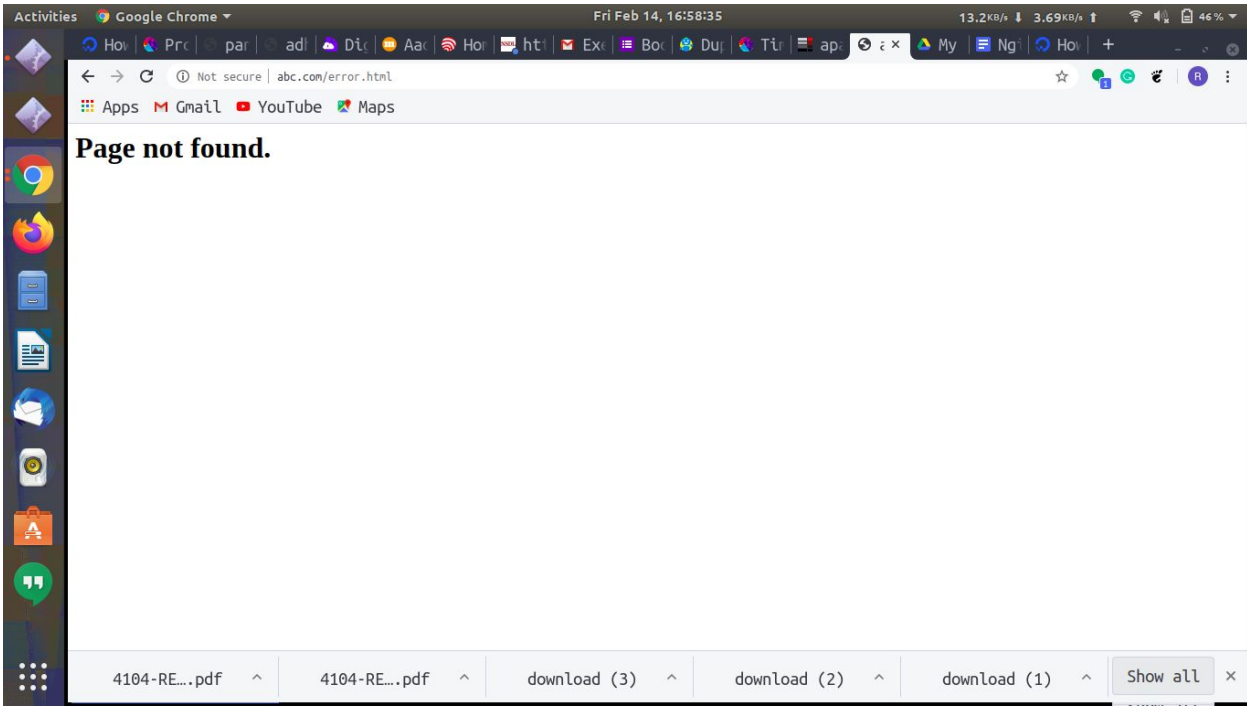
5. Host a site [ABC.COM](ABC.COM)
    1. Create an index page and a fail-safe page. If a page for URI is not available, the fail-safe page is served.



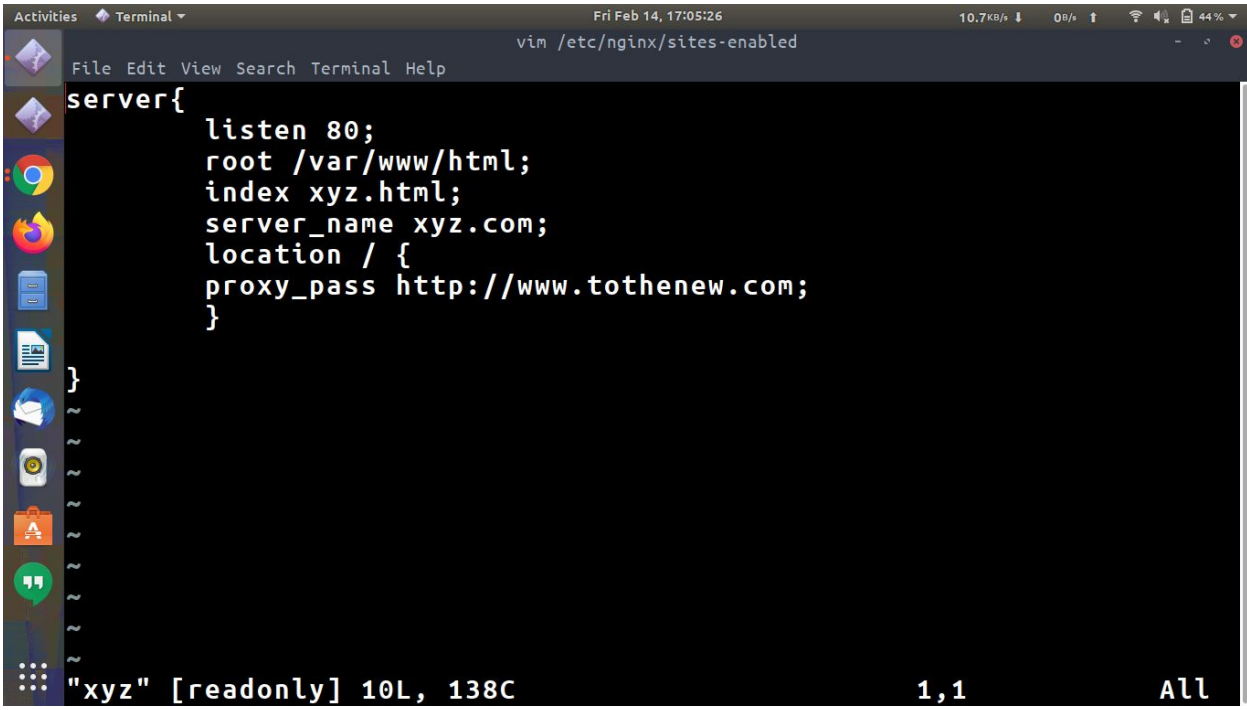

Activities
Terminal
Fri Feb 14, 16:57:31
vim /var/www/html
File Edit View Search Terminal Help
<html>
<body>
<h1>This is index page </h1>
</body>
</html>
"abc_index.html" [readonly] 6L, 64C
1,1
All

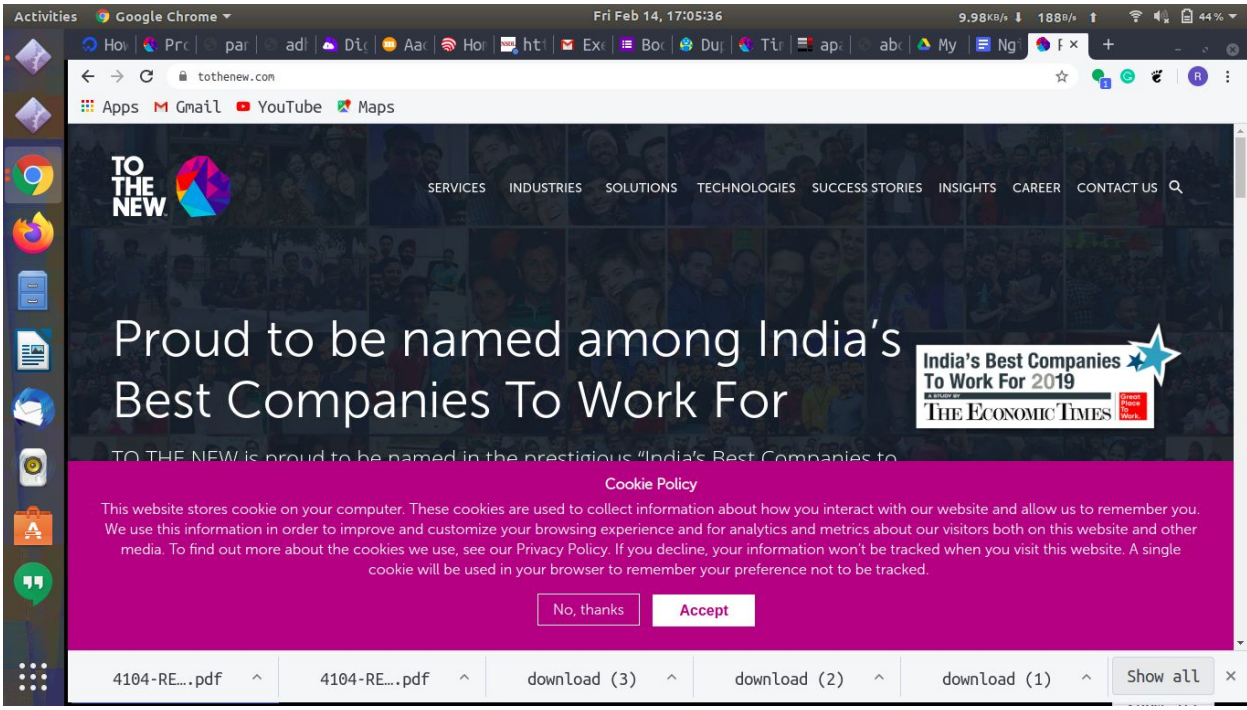

Activities
Terminal
Fri Feb 14, 16:57:50
vim /var/www/html
File Edit View Search Terminal Help
<html>
<body>
<h1>Page not found.</h1>
</body>
</html>
:q!



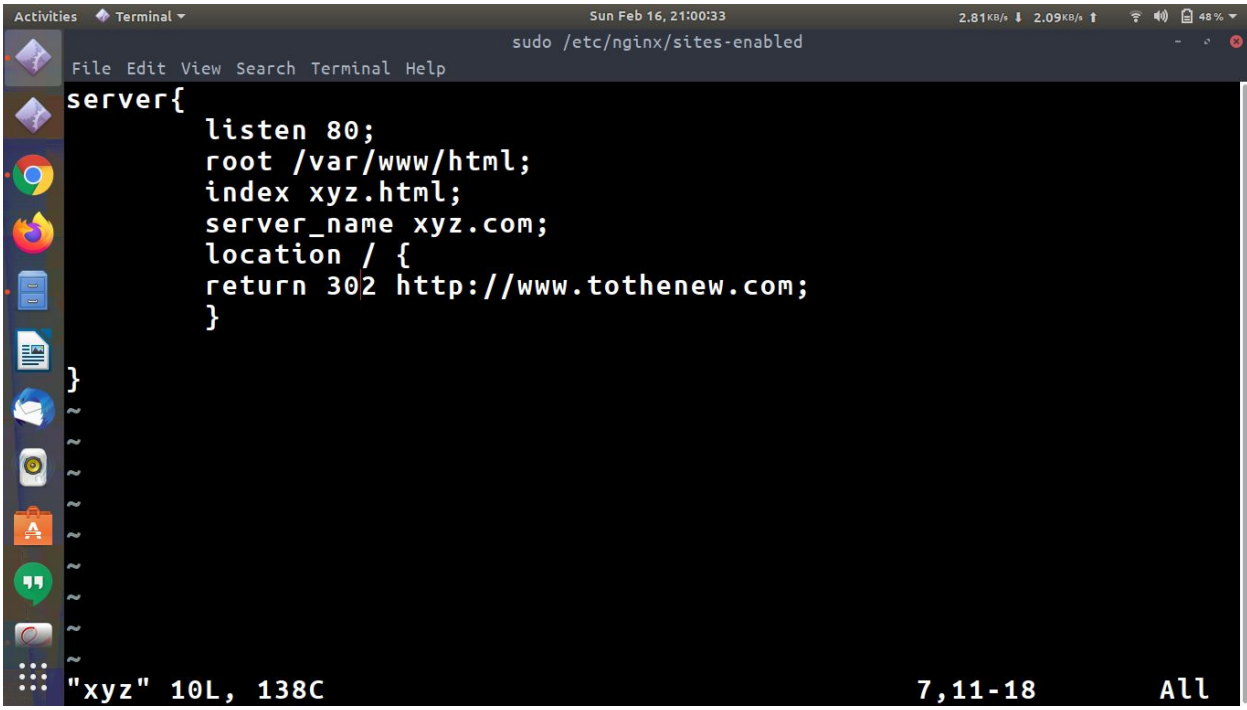


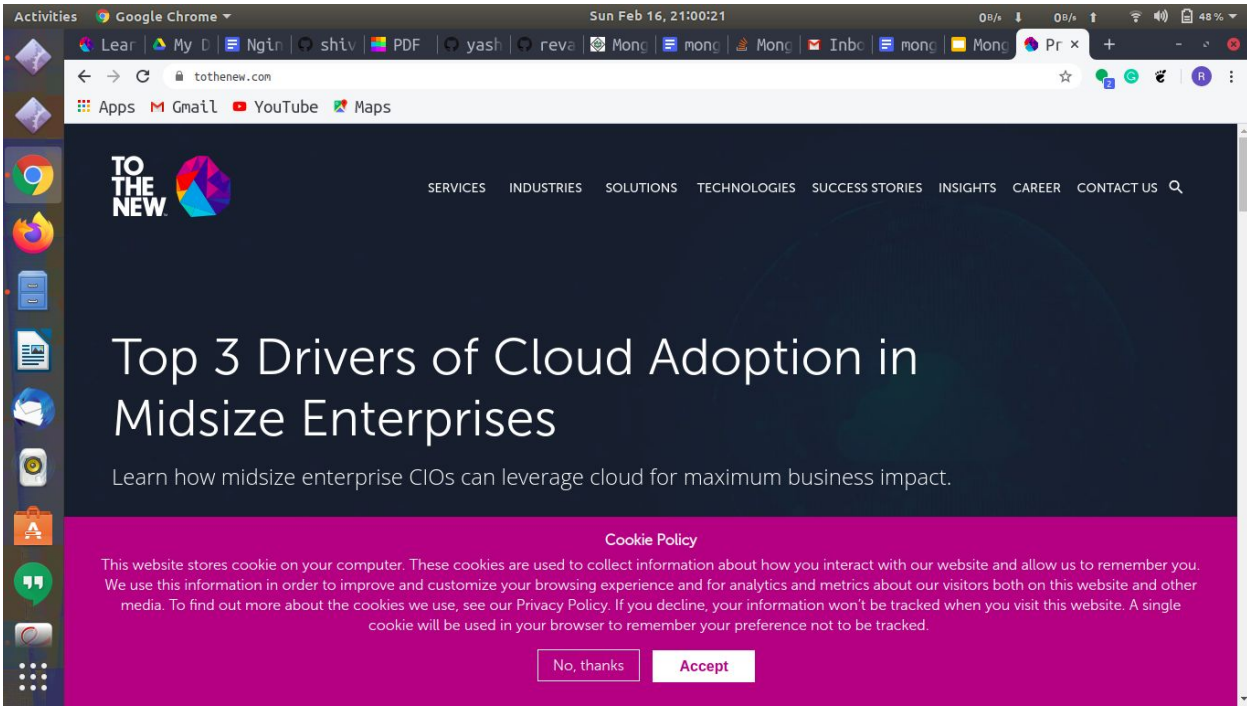
2. proxy pass to a website xyz.com on a particular URI.



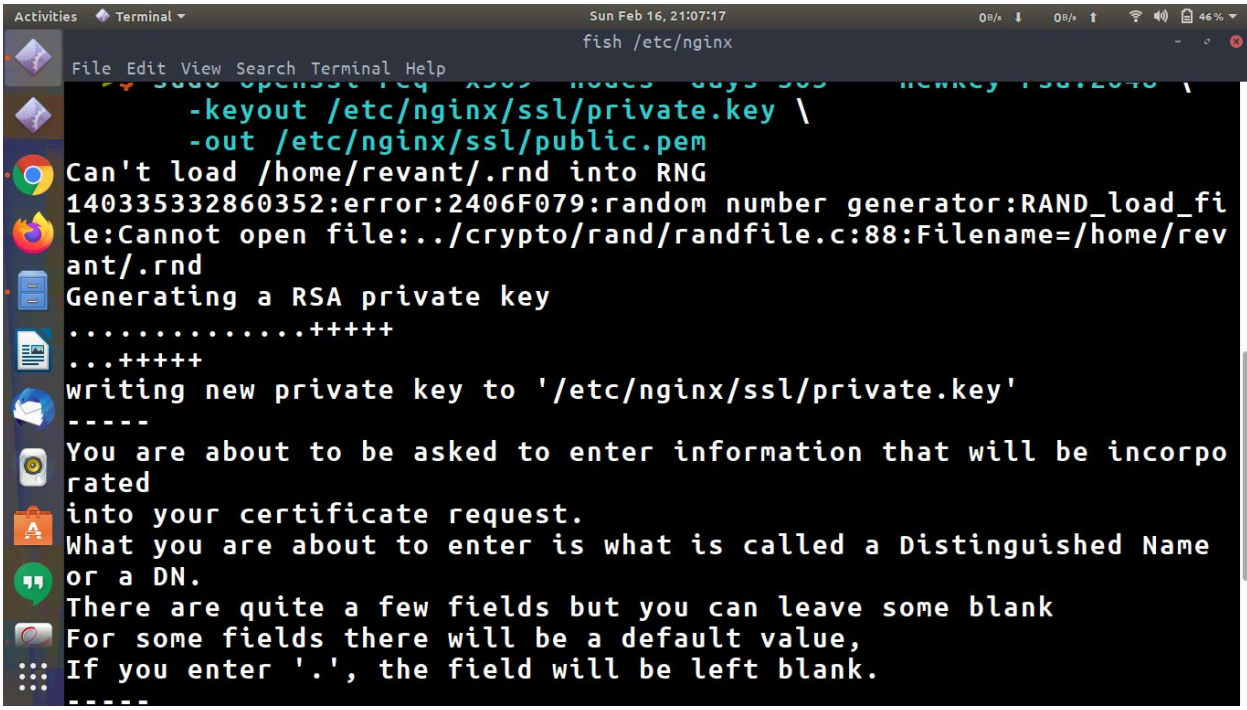


3. redirect to above URI on /redirect/

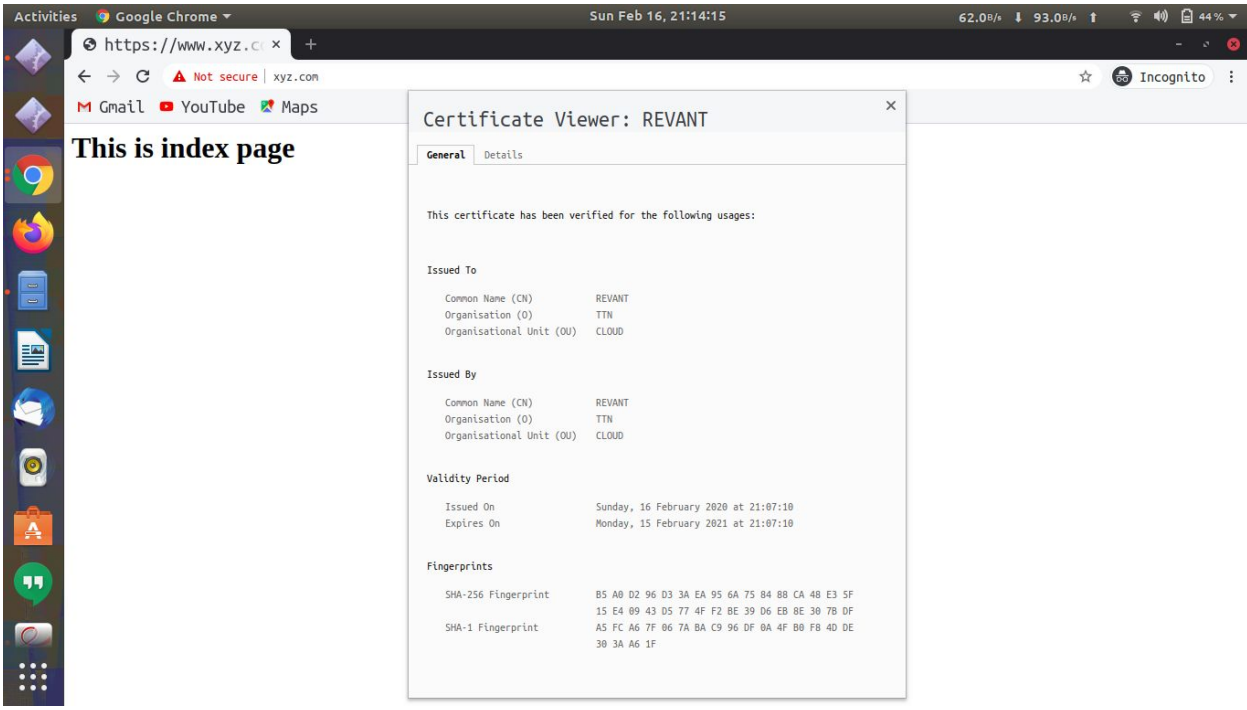


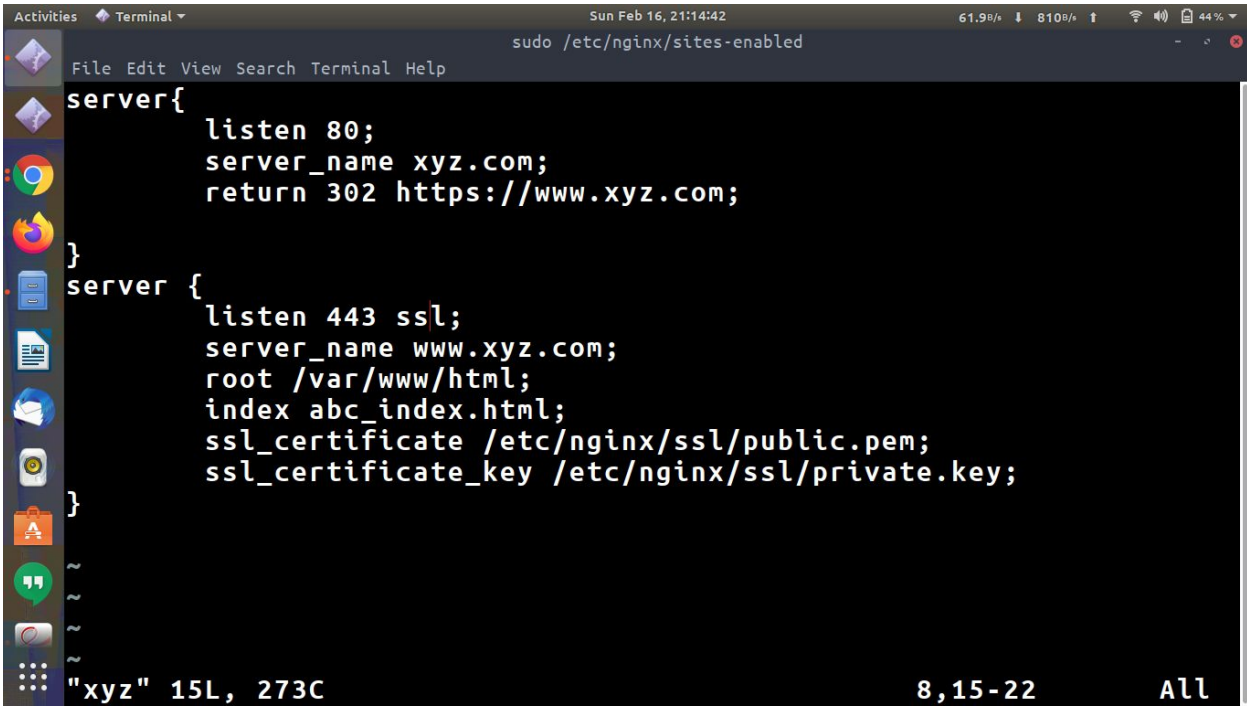


4. perform an HTTP to HTTPS redirection including non-www to www redirection.

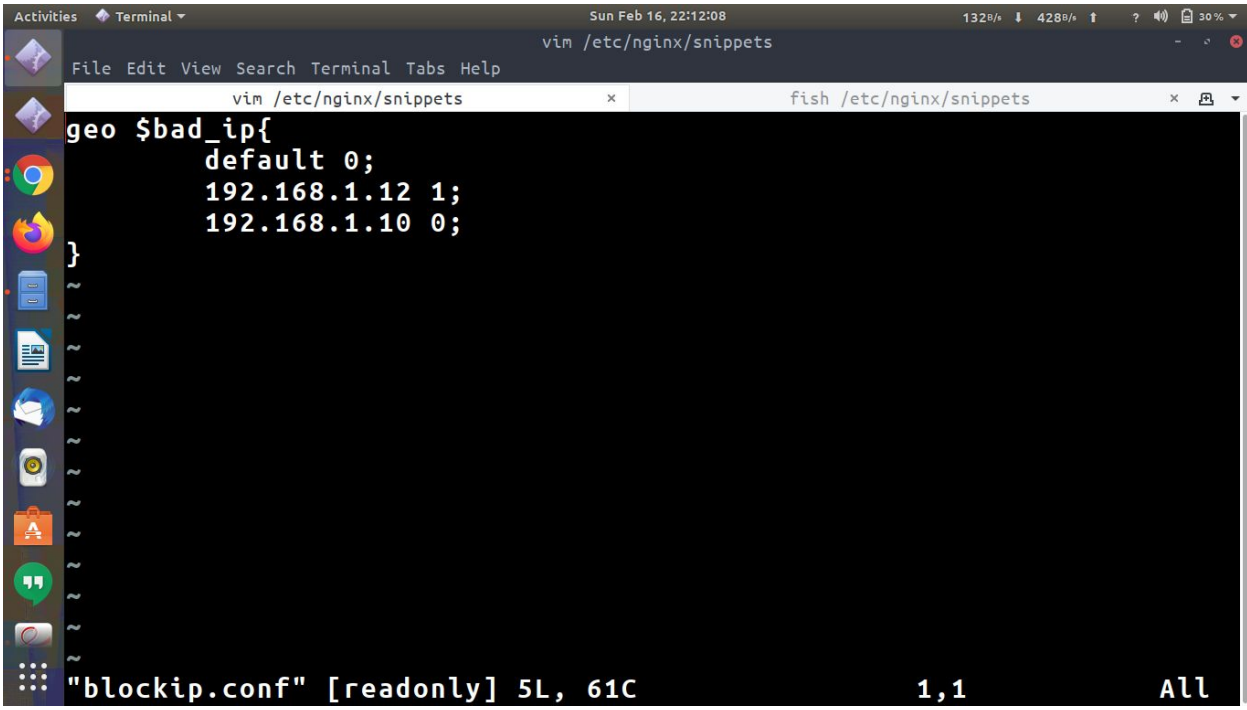

Activities
Terminal
Sun Feb 16, 21:07:17
fish /etc/nginx
File Edit View Search Terminal Help
-keyout /etc/nginx/ssl/private.key \
-out /etc/nginx/ssl/public.pem
Can't load /home/revant/.rnd into RNG
140335332860352:error:2406F079:random number generator:RAND_load_file:Cannot open file:../crypto/rand/randfile.c:88:Filename=/home/revant/.rnd
Generating a RSA private key
.....+++++
...+++++
writing new private key to '/etc/nginx/ssl/private.key'

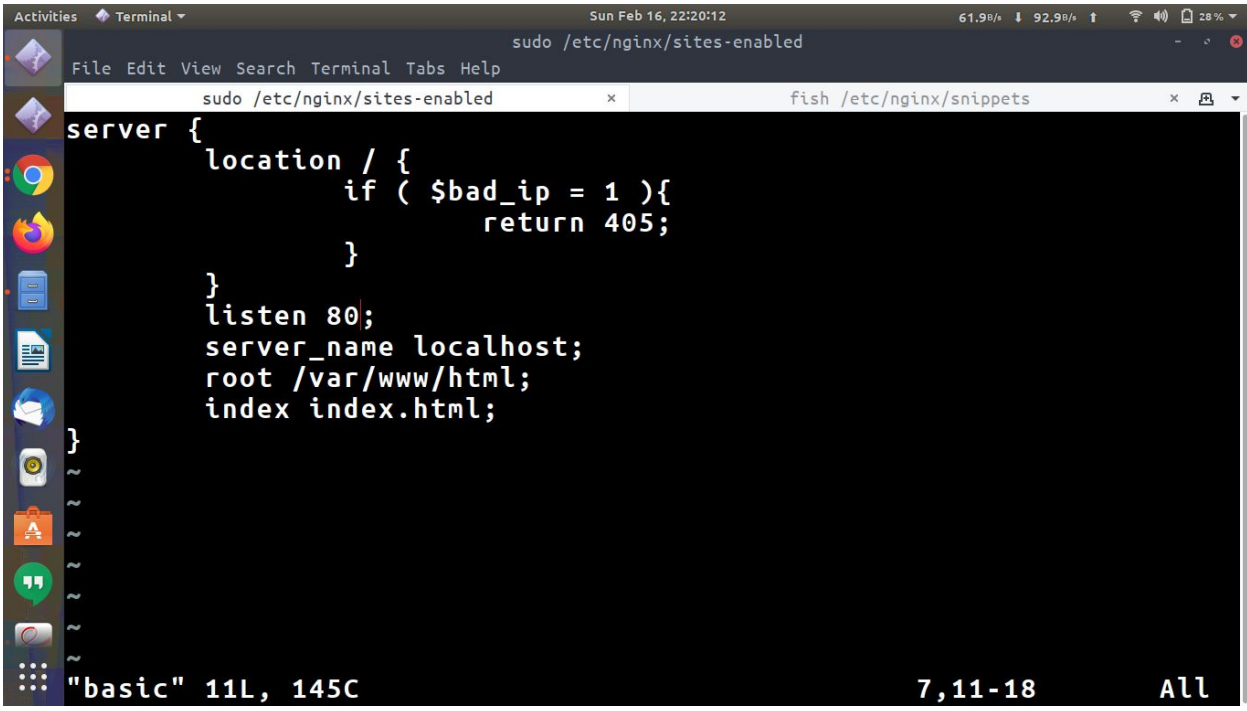
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.


Activities
Google Chrome
Sun Feb 16, 21:14:15
https://www.xyz.c
Not secure | xyz.com
Incognito
Gmail
YouTube
Maps
This is index page
Certificate Viewer: REVANT
General
Details
This certificate has been verified for the following usages:
Issued To
Common Name (CN) REVANT
Organisation (O) TTN
Organisational Unit (OU) CLOUD
Issued By
Common Name (CN) REVANT
Organisation (O) TTN
Organisational Unit (OU) CLOUD
Validity Period
Issued On Sunday, 16 February 2020 at 21:07:10
Expires On Monday, 15 February 2021 at 21:07:10
Fingerprints
SHA-256 Fingerprint B5 A0 D2 96 D3 3A EA 95 6A 75 84 88 CA 48 E3 5F 15 E4 09 43 D5 77 4F F2 BE 39 D6 EB 8E 30 7B DF
SHA-1 Fingerprint A5 FC A6 7F 06 7A BA C9 96 DF 0A 4F B0 F8 4D DE 30 3A A6 1F



Allow access to a set of particular IPs on a location block and return 405 to other IPs no matter if the page in that location exists.

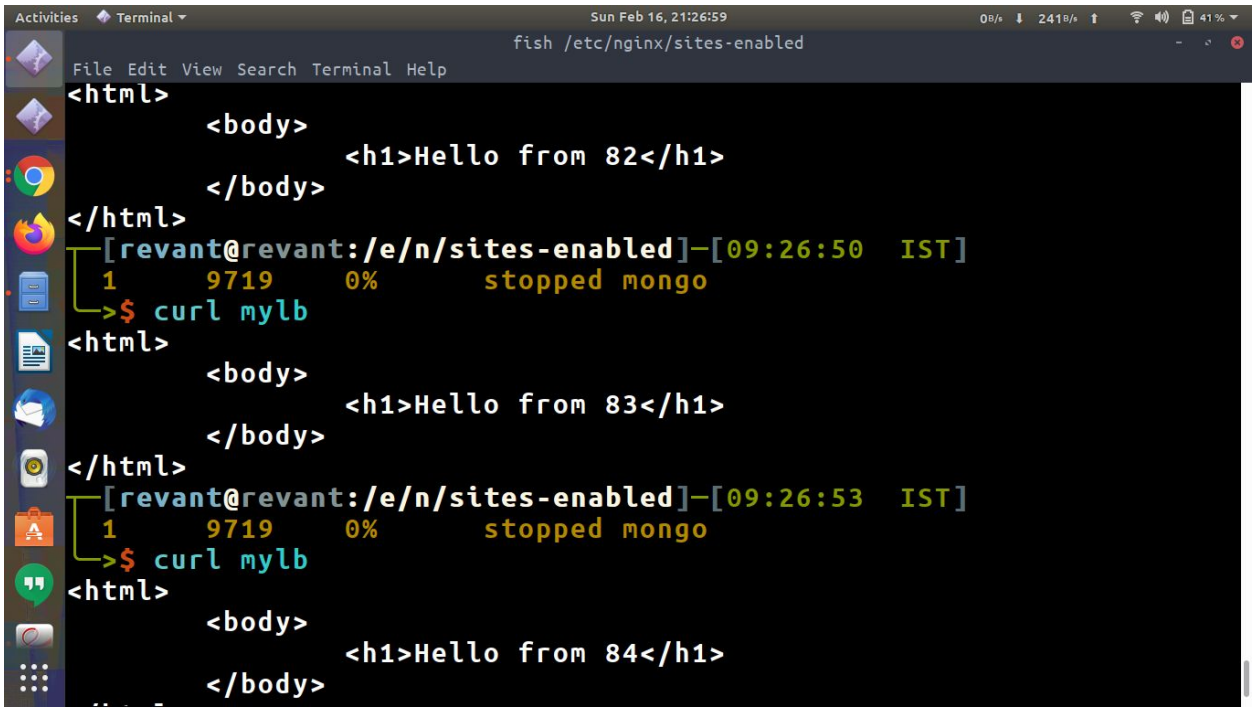

Activities
Terminal
Sun Feb 16, 22:12:08
vim /etc/nginx/snippets
File Edit View Search Terminal Tabs Help
vim /etc/nginx/snippets
fish /etc/nginx/snippets
geo $bad_ip{
default 0;
192.168.1.12 1;
192.168.1.10 0;
}
"blockip.conf" [readonly] 5L, 61C
1,1
All

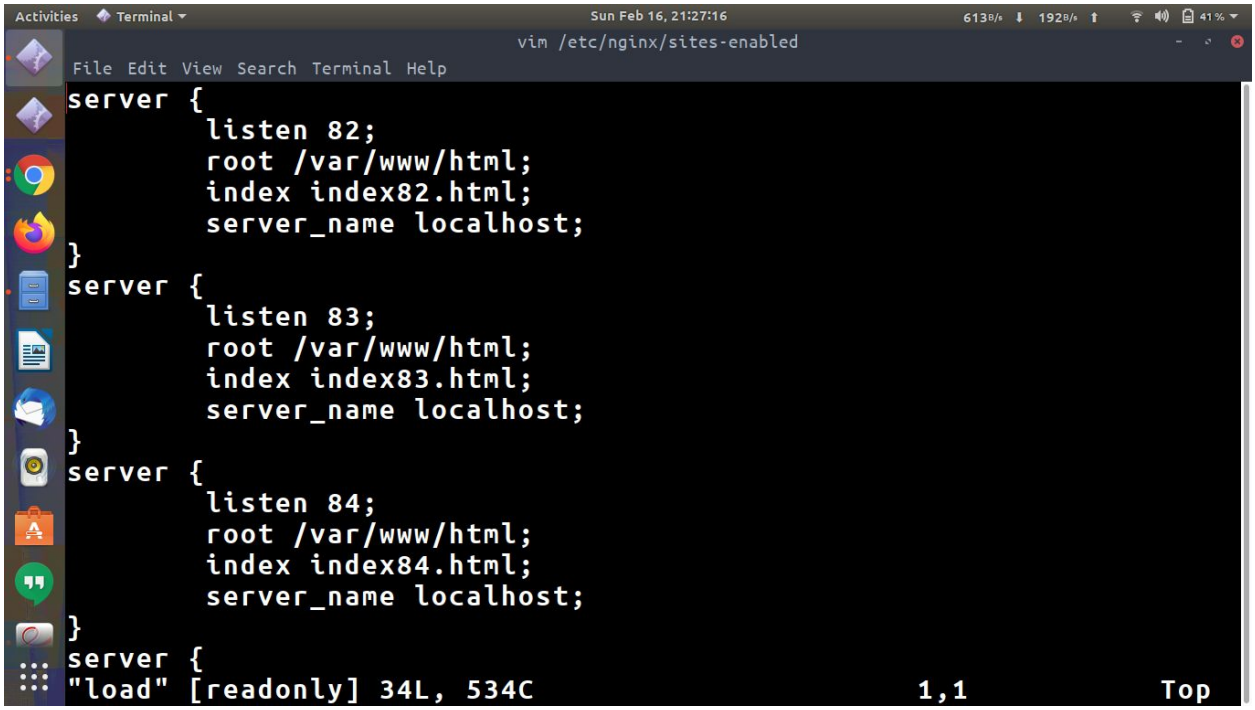

Activities
Terminal
Sun Feb 16, 22:20:12
sudo /etc/nginx/sites-enabled
File Edit View Search Terminal Tabs Help
sudo /etc/nginx/sites-enabled
fish /etc/nginx/snippets
server {
location / {
if ($bad_ip = 1){
return 405;
}
}
listen 80;
server_name localhost;
root /var/www/html;
index index.html;
}
"basic" 11L, 145C
7,11-18
All

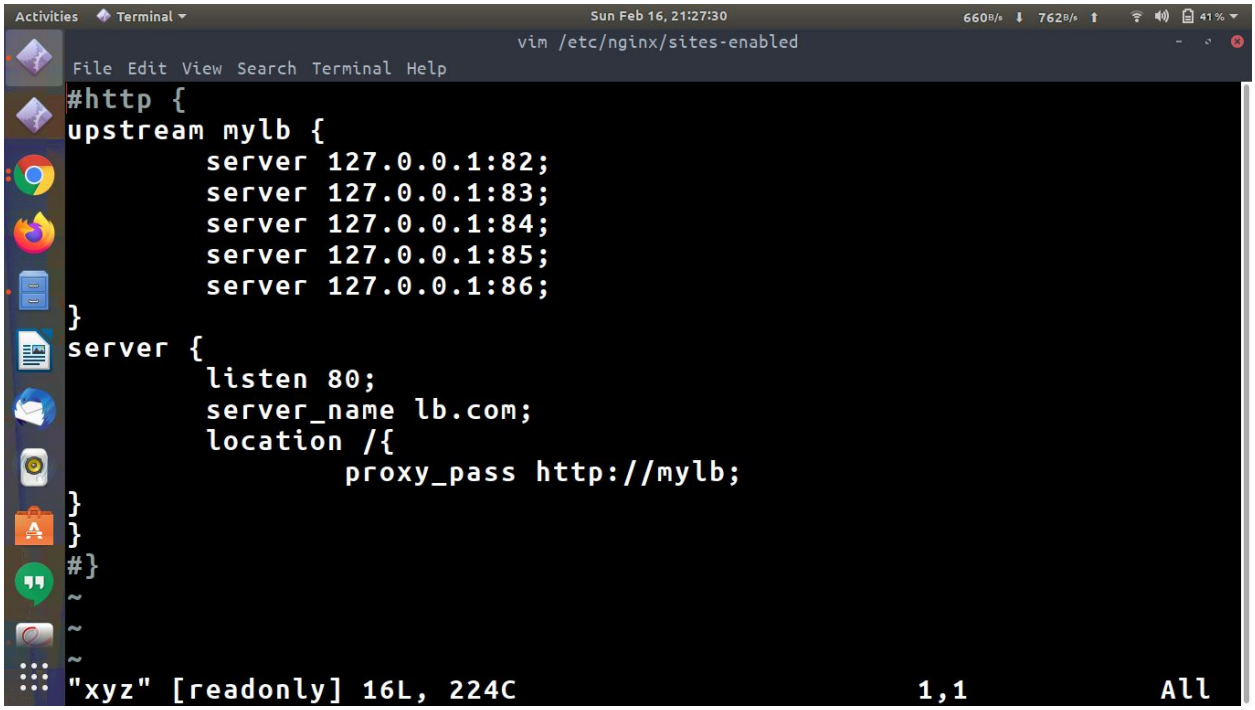
5. Place your images at /var/www/html/images. Only accept jpg/png/jpeg. Discard rest

   DOUBT.

6. Create a load balancer with 5 backends. Explain different types of load balancing methods.







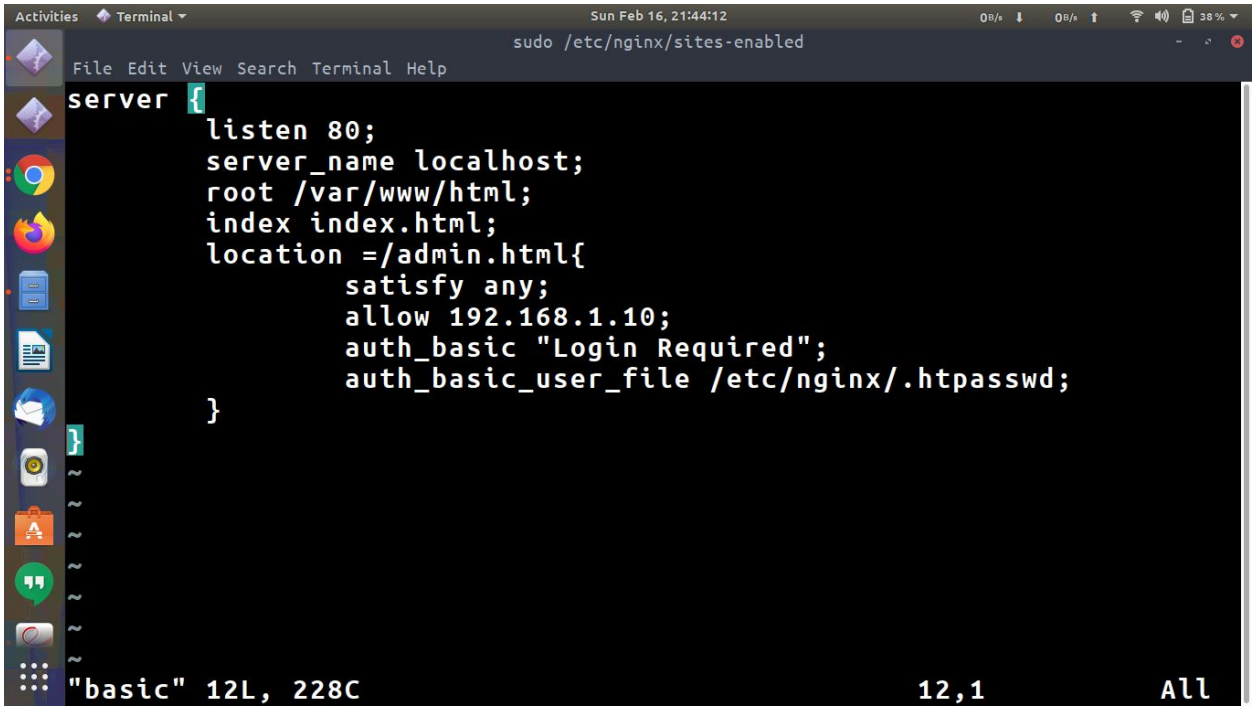
Round Robin – Requests are distributed evenly across the servers, with server weights taken into consideration. This method is used by default (there is no directive for enabling it

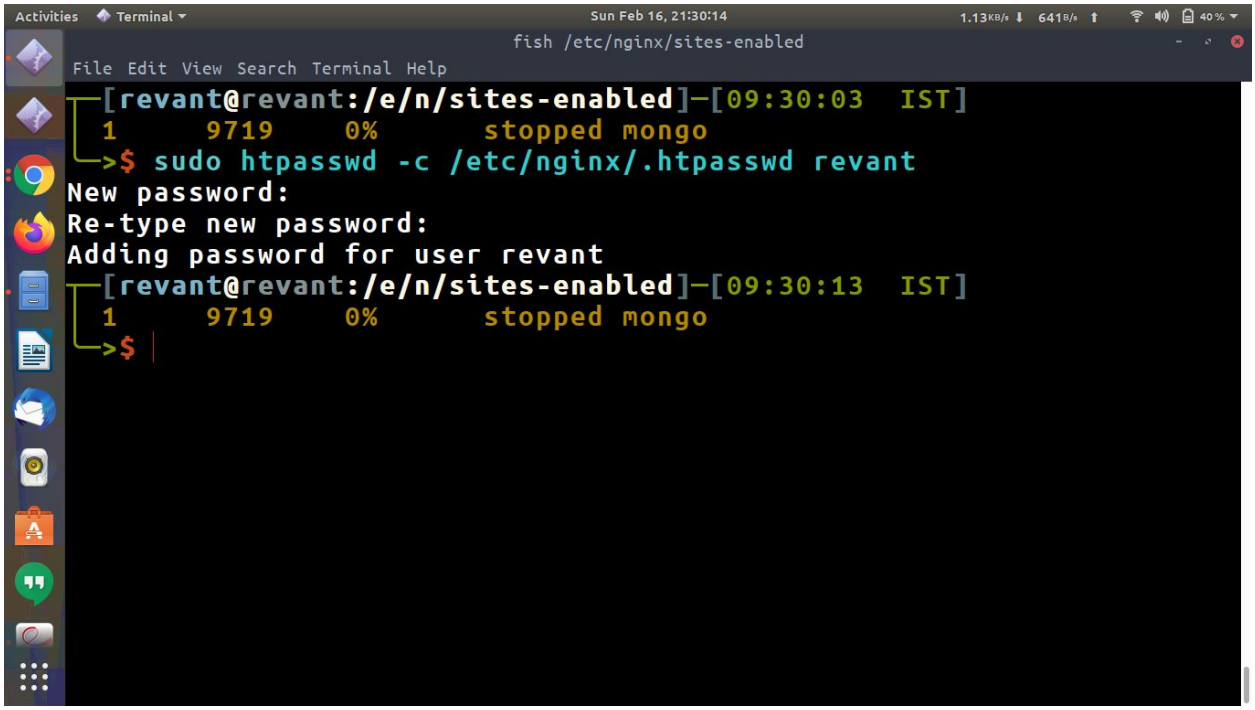
Least Connections – A request is sent to the server with the least number of active connections, again with server weights taken into consideration:

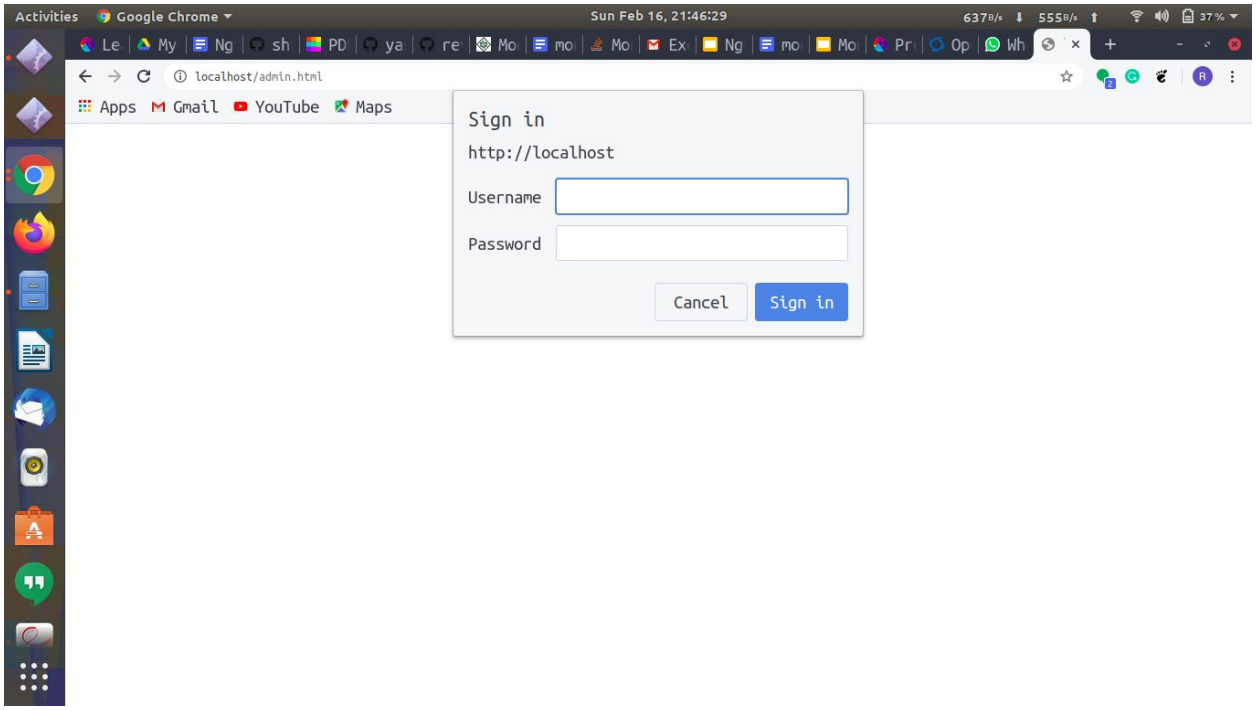
IP Hash – The server to which a request is sent is determined from the client IP address. In this case, either the first three octets of the IPv4 address or the whole IPv6 address are used to calculate the hash value. The method guarantees that requests from the same address get to the same server unless it is not available.

Least Time (NGINX Plus only) – For each request, NGINX Plus selects the server with the lowest average latency and the lowest number of active connections, where the lowest average latency is calculated based on which of the following parameters to the `least_time` directive is included:

7. Setup Basic Auth (Popup asking for username and password) in a particular location block. (The Basic Auth should not be asked for TTN IP)


Activities
Terminal
Sun Feb 16, 21:44:12
sudo /etc/nginx/sites-enabled
File Edit View Search Terminal Help
server {
listen 80;
server_name localhost;
root /var/www/html;
index index.html;
location =/admin.html{
satisfy any;
allow 192.168.1.10;
auth_basic "Login Required";
auth_basic_user_file /etc/nginx/.htpasswd;
}
}
"basic" 12L, 228C
12,1
All


Activities
Terminal
Sun Feb 16, 21:30:14
fish /etc/nginx/sites-enabled
File Edit View Search Terminal Help
[revant@revant:/e/n/sites-enabled]-[09:30:03 IST]
1 9719 0% stopped mongo
>$ sudo htpasswd -c /etc/nginx/.htpasswd revant
New password:
Re-type new password:
Adding password for user revant
[revant@revant:/e/n/sites-enabled]-[09:30:13 IST]
1 9719 0% stopped mongo
>$


Activities
Google Chrome
Sun Feb 16, 21:46:29
localhost/admin.html
Apps
Gmail
YouTube
Maps
Sign in
http://localhost
Username
Password
Cancel
Sign in