

NGINX

Assessment



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1. What is the advantage of using a “reverse proxy server”?
 - Creates a single point of access to your file transfer servers
 - Reduces risks to sensitive data.
 - A reverse proxy server can act as a “traffic cop,” sitting in front of your backend servers and distributing client requests across a group of servers in a manner that maximizes speed and capacity utilization while ensuring no one server is overloaded, which can degrade performance.
 - Reverse proxies can compress inbound and outbound data, as well as cache commonly requested content, both of which speed up the flow of traffic between clients and servers.
2. Why and where Nginx is a better choice than apache.
 - **NGINX** is about 2.5 times faster **than Apache** based on the results of a benchmark test running up to 1,000 concurrent connections.
 - Clearly, **NGINX** serves static content much faster **than Apache**.
 - If you need to serve a lot of static content at high concurrency levels, **NGINX** can be a real help.
3. What are worker nodes and worker connections? How to calculate the max server capacity using the above two?

Worker nodes: defines the number of worker processes nginx is running. Default value is number of processor in the system

Worker_connection: specifies the maximum number of connections that a single worker can have open at one time.

To check number of worker nodes:- `grep processor /proc/cpuinfo | wc -l` Maximum number of connections = worker_processes * worker_connections

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

from /etc/nginx/sites-enabled

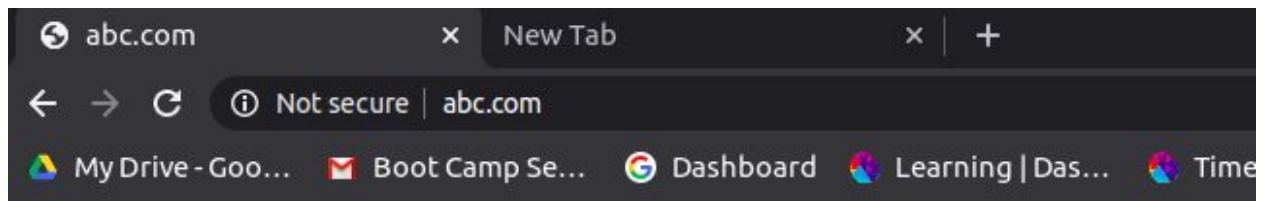
5. How to configure different log_format for different “location” block/directive?

```
log_format myFormat '$remote_addr - $remote_user [$time_local]';
```

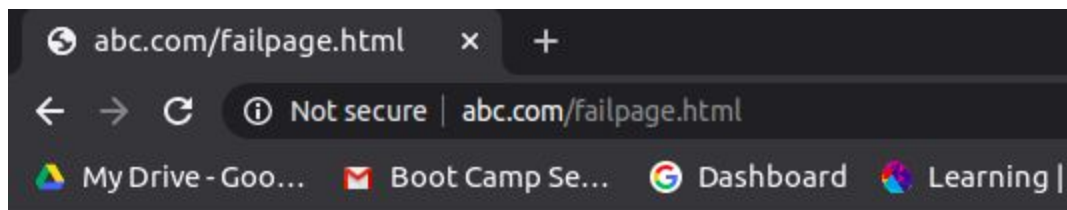
combined

6. Host a site 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.



hello everyone !!



oopppsssss

```
# include snippets/snakeoil.com;

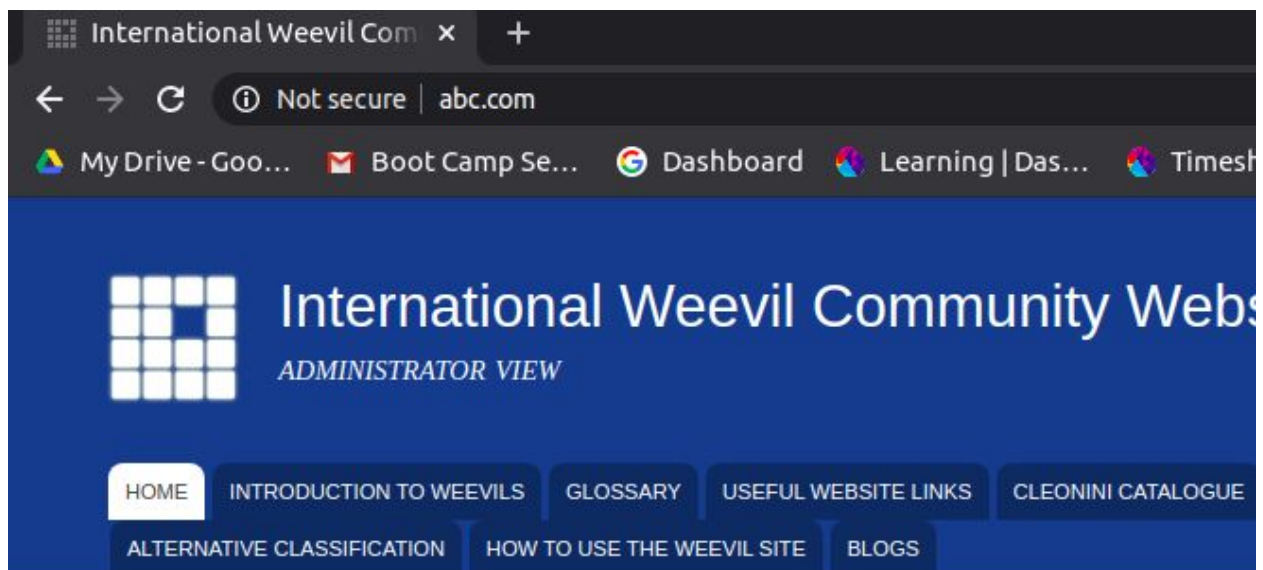
root /var/www/html;

# Add index.php to the list if you are using PHP
index index.html index.htm index.nginx-debian.html;
error_page 404 failpage.html;
server_name abc.com;

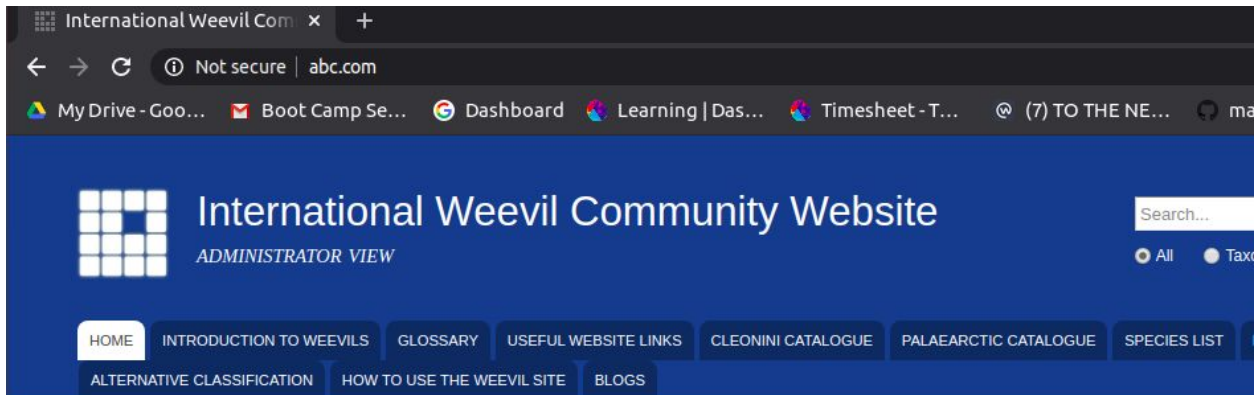
location / {
    # First attempt to serve request as file, then
    # as directory, then fall back to displaying a 404.
    try_files $uri $uri/ =404;
}
```

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

```
server {
    listen 80 ;
    server_name abc.com;
    root /var/www/html;
    error_page 404 error.html;
    location / {
        proxy_pass http://weevil.info/;
    }
}
```



3. redirect to above URI on /redirect/



Welcome to International Weevil
Community Website

```
File Edit View Search Terminal Help
server {
    listen 80 ;
    server_name abc.com;
    root /var/www/html;
    error_page 404 error.html;
    location / {
        #proxy_pass http://weevil.info;
        return 302 http://weevil.info;
    }
}
```

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

```
maithely@maithely:/etc/nginx/ssl$ sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout /etc/nginx/ssl/private.key -out /etc/nginx/ssl/public.pem
Can't load /home/maithely/.rnd into RNG
140092458463680:error:2406F079:random number generator:RAND_load_file:Cannot open file:../crypto/rand/randfile.c:88:Filename=/home/maithely/.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.
-----
Country Name (2 letter code) [AU]:
State or Province Name (full name) [Some-State]:
Locality Name (eg, city) []:
Organization Name (eg, company) [Internet Widgits Pty Ltd]:
Organizational Unit Name (eg, section) []:
Common Name (e.g. server FQDN or YOUR name) []:
Email Address []:
maithely@maithely:/etc/nginx/ssl$
```

```
server {  
    listen 80 ;  
    server_name abc.com;  
        listen 443 ssl;  
    root /var/www/html/;  
    error_page 404 error.html;  
    ssl_certificate /etc/nginx/ssl/public.pem;  
    ssl_certificate_key /etc/nginx/ssl/private.key;  
    location / {  
        #proxy_pass http://weevil.info/;  
        #return 302 http://weevil.info/;  
    }  
}
```

Certificate Viewer: O=Internet Widgits Pty Ltd,ST=Some-State,C=AU

General Details

This certificate has been verified for the following usages:

Issued To

Common Name (CN)	<Not Part Of Certificate>
Organisation (O)	Internet Widgits Pty Ltd
Organisational Unit (OU)	<Not Part Of Certificate>

Issued By

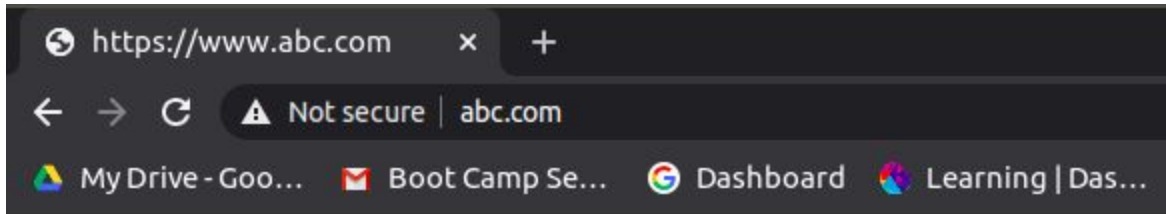
Common Name (CN)	<Not Part Of Certificate>
Organisation (O)	Internet Widgits Pty Ltd
Organisational Unit (OU)	<Not Part Of Certificate>

Validity Period

Issued On	Sunday, 16 February 2020 at 23:34:28
Expires On	Monday, 15 February 2021 at 23:34:28

Fingerprints

SHA-256 Fingerprint	90 BA 5D 2B F8 2E 1F CC CC 1B 66 EA 1F 10 D3 D1 33 19 9F 40 28 B3 0F DB A2 96 6B 9B A1 17 A4 15
SHA-1 Fingerprint	83 E7 A0 6D BB 26 37 D1 69 C7 CA 4F DA A1 8E 2D 64 A4 52 3C



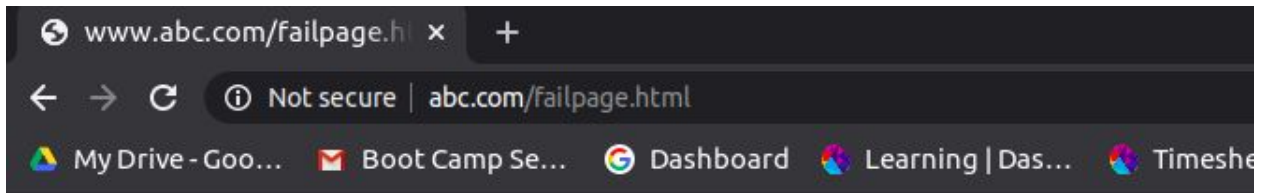
hello everyone !!

5. 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.

```
#server {
#listen 80;
#server_name abc.com;
#return 302 https://www.abc.com;
#}

server {
    listen 80;
    server_name www.abc.com;
    root /var/www/html;
#    error_page 404 error.html;
#    ssl_certificate /etc/nginx/ssl/public.pem;
#    ssl_certificate_key /etc/nginx/ssl/private.key;
    allow 10.1.211.99;
    deny all;
    error_page 403 404 405 failpage.html;

    location /failpage.html{
        return 405 "<h1>ERROR 405</h1>";
        #proxy_pass http://weevil.info/;
        #return 302 http://weevil.info/;
    }
}
```

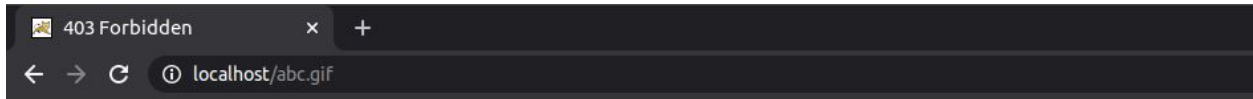



ERROR 405

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

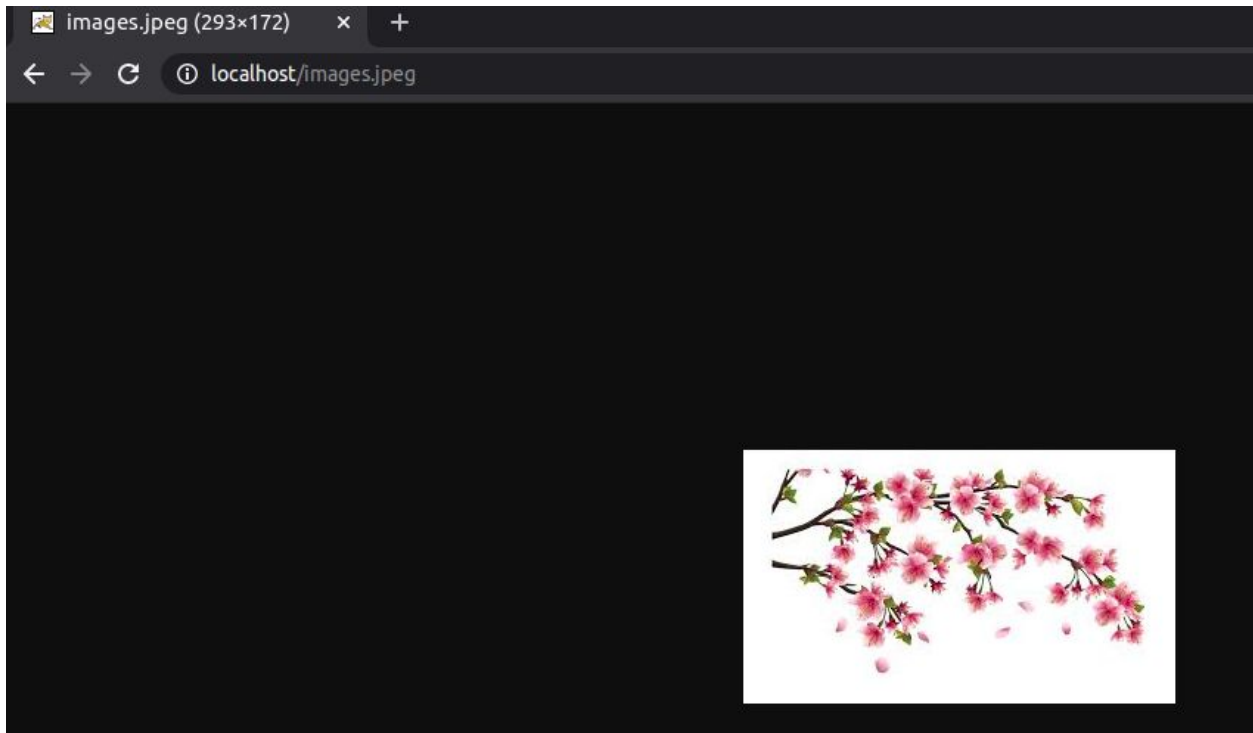
```
maithely@maithely:/etc/systemd/system$ cd /var/www/html/images/  
maithely@maithely:/var/www/html/images$ ls  
abc.gif  def.png  flower.txt  ghi.jpg  images.jpeg  
maithely@maithely:/var/www/html/images$
```

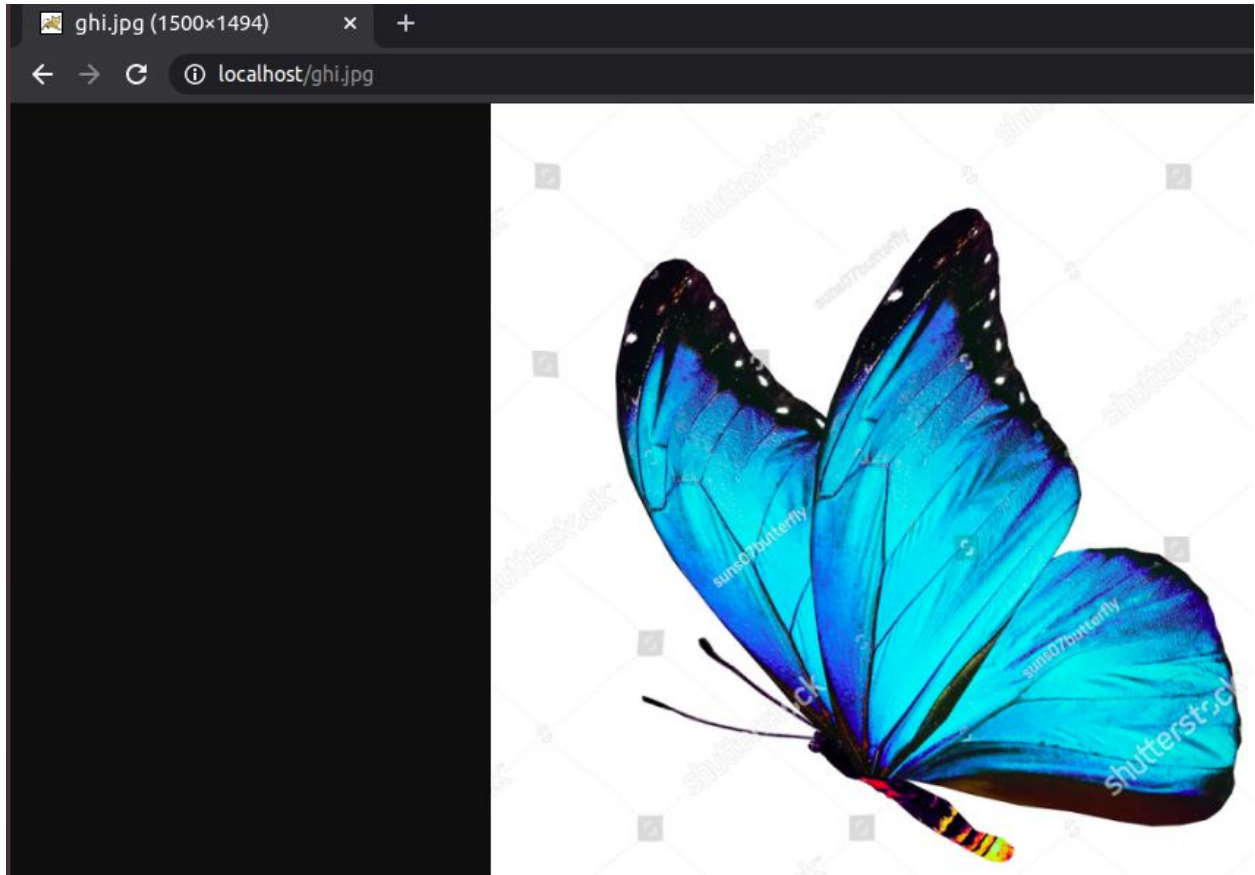
```
maithely@maithely:/etc/nginx/sites-enabled$ cat auth  
server {  
    listen 80;  
    server_name abc.com;  
    autoindex on;  
    root /var/www/html;  
    index index.html;  
  
    location ~ \.(jpg|jpeg|png)  
    {  
        root /var/www/html/images;  
    }  
    location ~ .* {  
        deny all;  
    }  
}
```

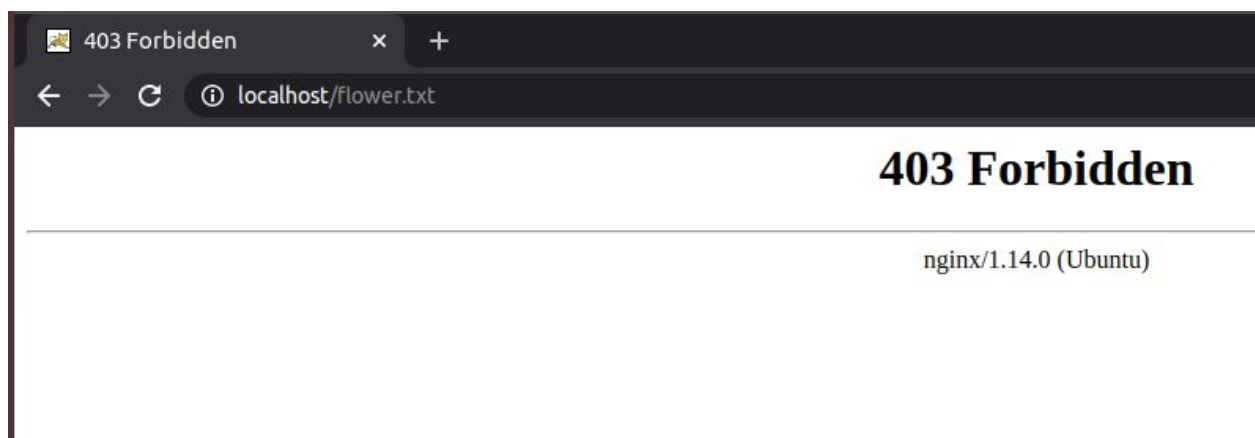
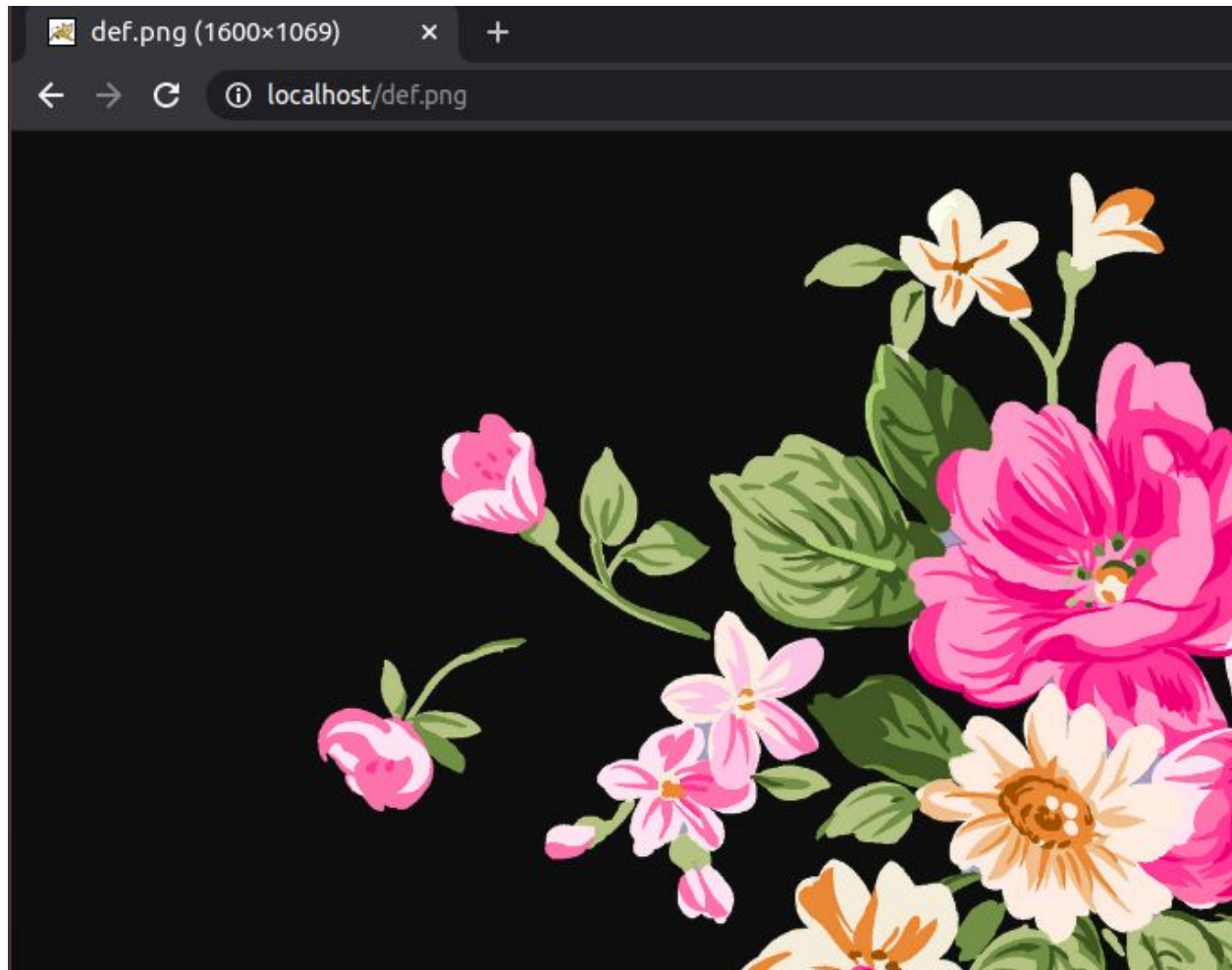


403 Forbidden

nginx/1.14.0 (Ubuntu)







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

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```
#server {
#listen 80;
#server_name abc.com;
#return 302 https://www.abc.com;
#}

upstream backend {
    server 127.0.0.1:81;
    server 127.0.0.1:82;
    server 127.0.0.1:83;
    server 127.0.0.1:84;
    server 127.0.0.1:85;
}

server {
    listen 80;
    server_name abc.com;
    root /var/www/html/;
#    error_page 404 error.html;
#    ssl_certificate /etc/nginx/ssl/public.pem;
#    ssl_certificate_key /etc/nginx/ssl/private.key;
#    allow 10.1.211.99;
#    deny all;
    error_page 403 404 /failpage.html;

#location /failpage.html{
#    #return 405 "<h1>ERROR 405</h1>";
#    #proxy_pass http://weevil.info/;
#    #return 302 http://weevil.info/;
#    location /
#    {
#        proxy_pass http://backend;
#        #return 405;
#    }
#}

~
~
~
"abc" 34L, 696C
```

File Edit View Search Terminal Help

```
server
{
listen 81;
root /var/www/html/;
index index1.html;
}
```

```
server
{
listen 82;
root /var/www/html/;
index index2.html;
}
```

```
server
{
listen 83;
root /var/www/html/;
index index3.html;
}
```

```
server
{
listen 84 ;
root /var/www/html/;
index index4.html;
}
```

```
server

{
listen 85;
root /var/www/html/;
index index5.html;
}
```

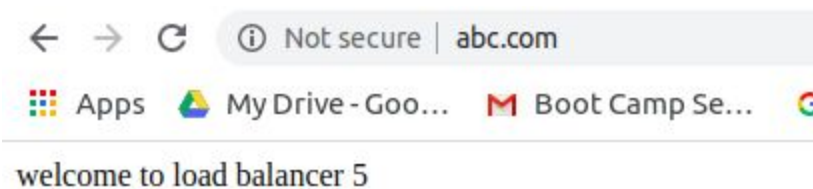
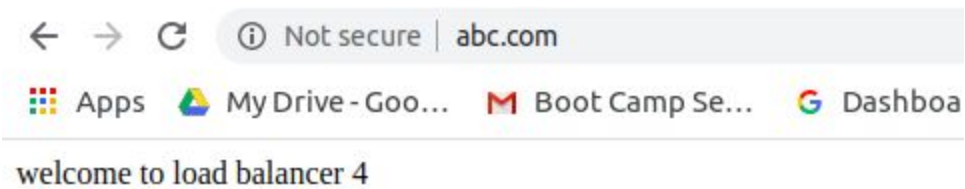
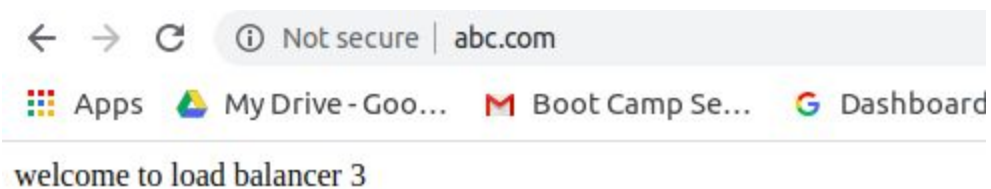
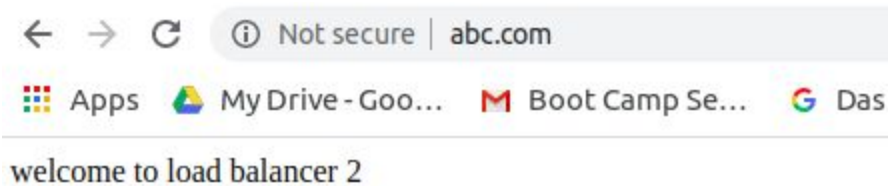
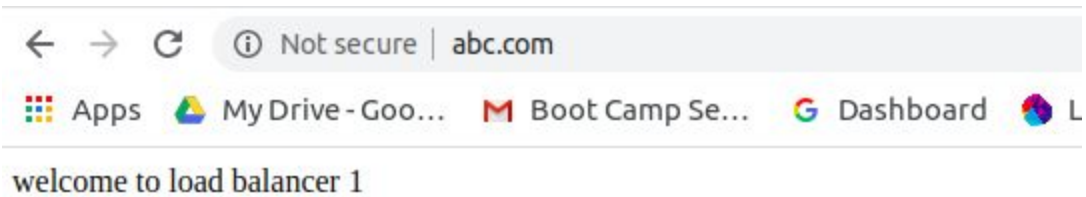
~

~

~

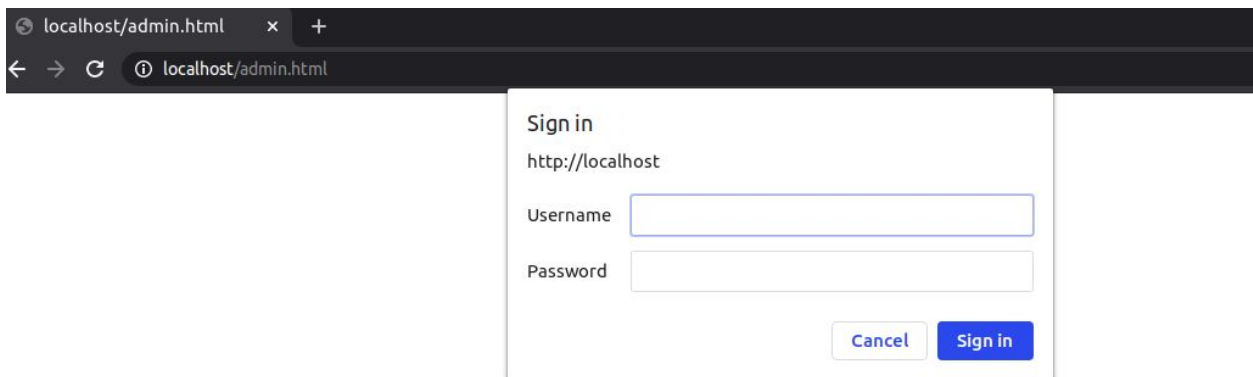
~

"load" 33L, 316C



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

```
root@maithely:/etc/nginx/sites-enabled# cat auth
server {
    listen 80;
    server_name abc.com;
    autoindex on;
    root /var/www/html;
    index index.html;
    location /admin.html{
        #autoindex on;
        auth_basic "Login Required";
        auth_basic_user_file /etc/nginx/.htpasswd;
    }
    error_page 401 /401.html;
}
root@maithely:/etc/nginx/sites-enabled#
```



Admin : admin

Password :ttn

