

Apache web server

- Apache is a free open-source web server developed and maintained by Apache Software Foundation. It is primarily designed for Linux but runs on other major platforms, such as Windows and OpenVMS.
-

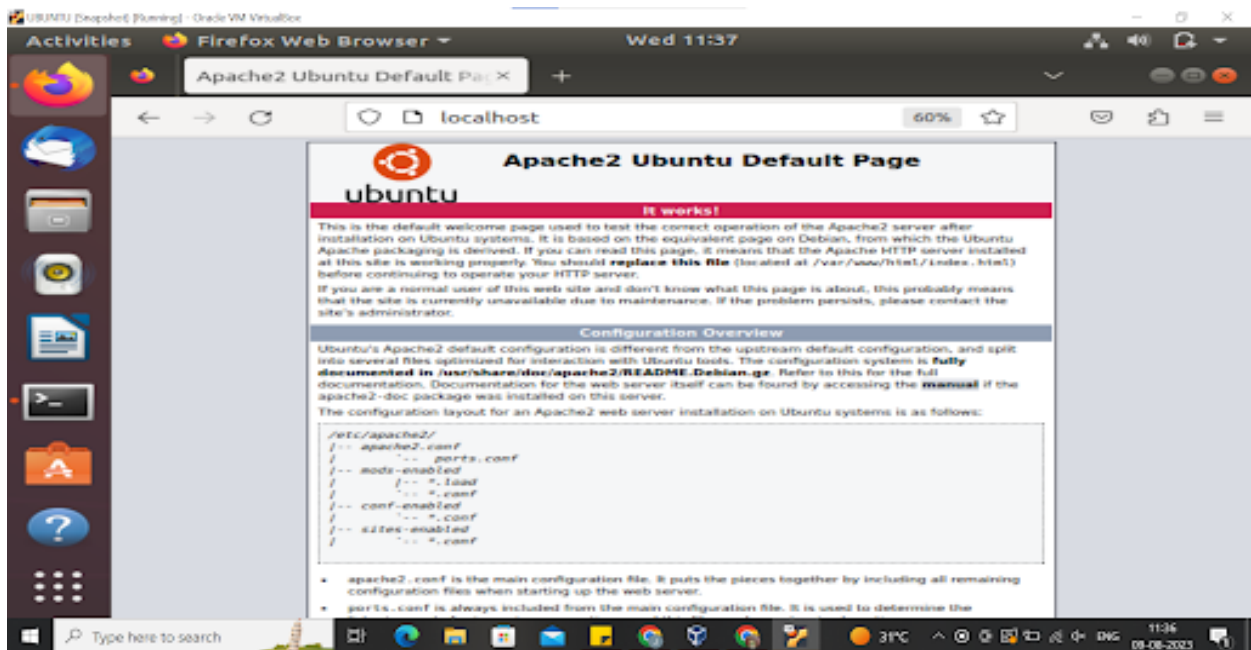
Install and Configure Apache on Ubuntu

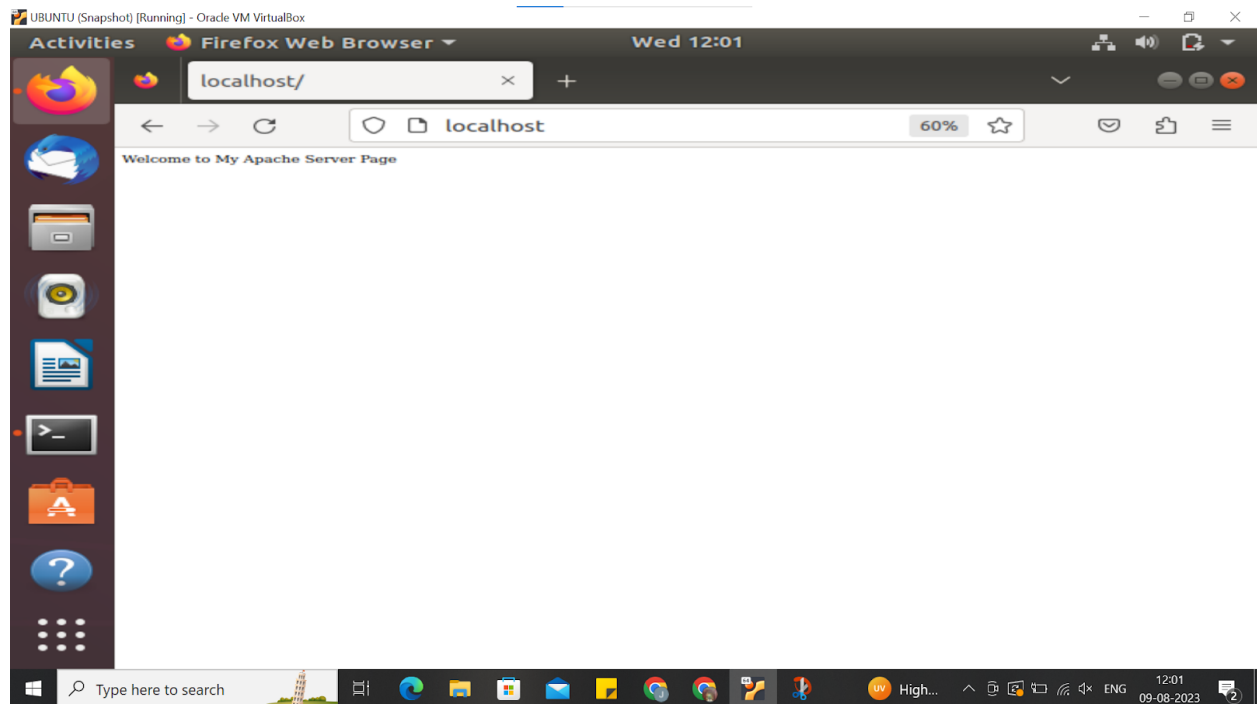
Step 1: Install Apache

```
root@UBUNTU:~# sudo apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
5: Unable to locate package apache2
```

Step 2: Verify Apache Installation

<http://localhost>





Step 3: Configure Your Firewall

```
root@UBUNTU:~# sudo ufw app list
Available applications:
  Apache
  Apache Full
  Apache Secure
  CUPS
  OpenSSH
  Samba
root@UBUNTU:~# sudo ufw allow 'Apache'
Skipping adding existing rule
Skipping adding existing rule (v6)
```

Check ufw status

```
root@UBUNTU:~# sudo ufw status |grep Apache
Apache                ALLOW          Anywhere
Apache (v6)           ALLOW          Anywhere (v6)
root@UBUNTU:~# systemctl stop apache2.service
```

Apache Service Controls

```
root@UBUNTU:~# systemctl stop apache2.service
root@UBUNTU:~# systemctl start apache2.service
root@UBUNTU:~# systemctl restart apache2.service
root@UBUNTU:~# systemctl reload apache2.service
root@UBUNTU:~#
```

Directories

- After installing, Apache by default creates a document root directory at /var/www/html.

Nginx Web server

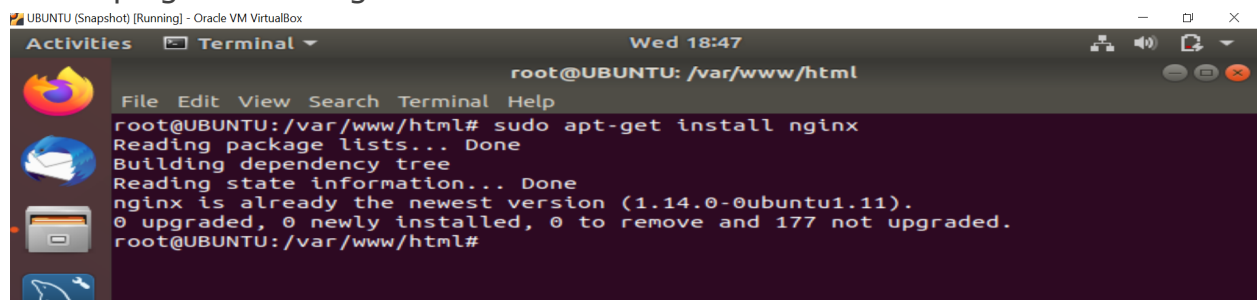
- NGINX is one of the most popular web servers in the world that can also be used as a reverse proxy, load balancer, mail proxy and HTTP cache. The main goal of the NGINX project is to ensure a stable, lightweight, and highly efficient web server for websites that experience a huge amount of traffic.

Install and Configure Nginx on Ubuntu

Install Nginx

sudo apt-get update

sudo apt-get install nginx

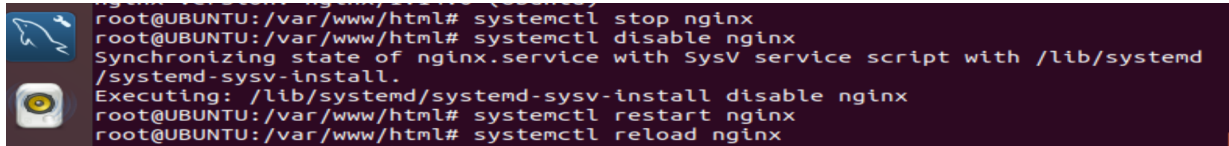


```
UBUNTU (Snapshot) [Running] - Oracle VM VirtualBox
Activities Terminal Wed 18:47
root@UBUNTU: /var/www/html
File Edit View Search Terminal Help
root@UBUNTU:/var/www/html# sudo apt-get install nginx
Reading package lists... Done
Building dependency tree
Reading state information... Done
nginx is already the newest version (1.14.0-0ubuntu1.11).
0 upgraded, 0 newly installed, 0 to remove and 177 not upgraded.
root@UBUNTU:/var/www/html#
```

nginx -v

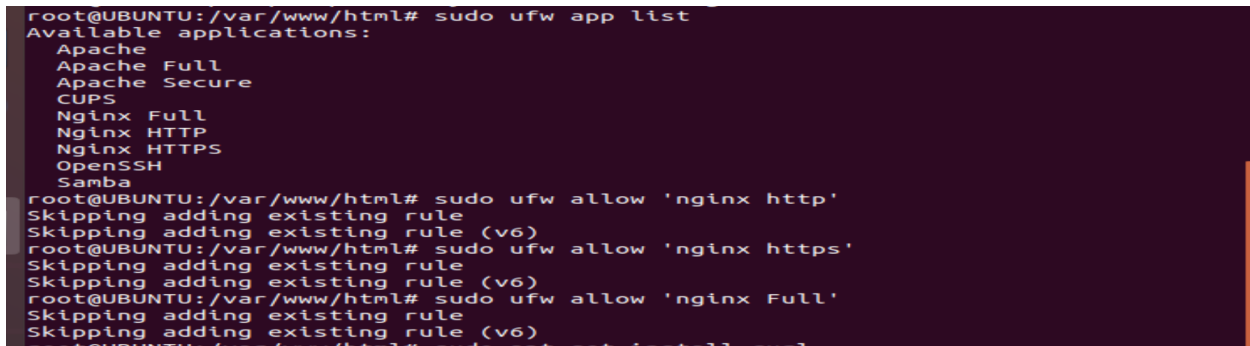
```
root@UBUNTU:/var/www/html# nginx -v
nginx version: nginx/1.14.0 (Ubuntu)
root@UBUNTU:/var/www/html# systemctl stop nginx
```

Nginx Service Controls

A terminal window with a dark background and light text. On the left side, there are two small icons: a blue mouse cursor icon and a yellow circular icon with a black center. The terminal text shows a series of commands to stop, disable, restart, and reload the Nginx service using systemctl.

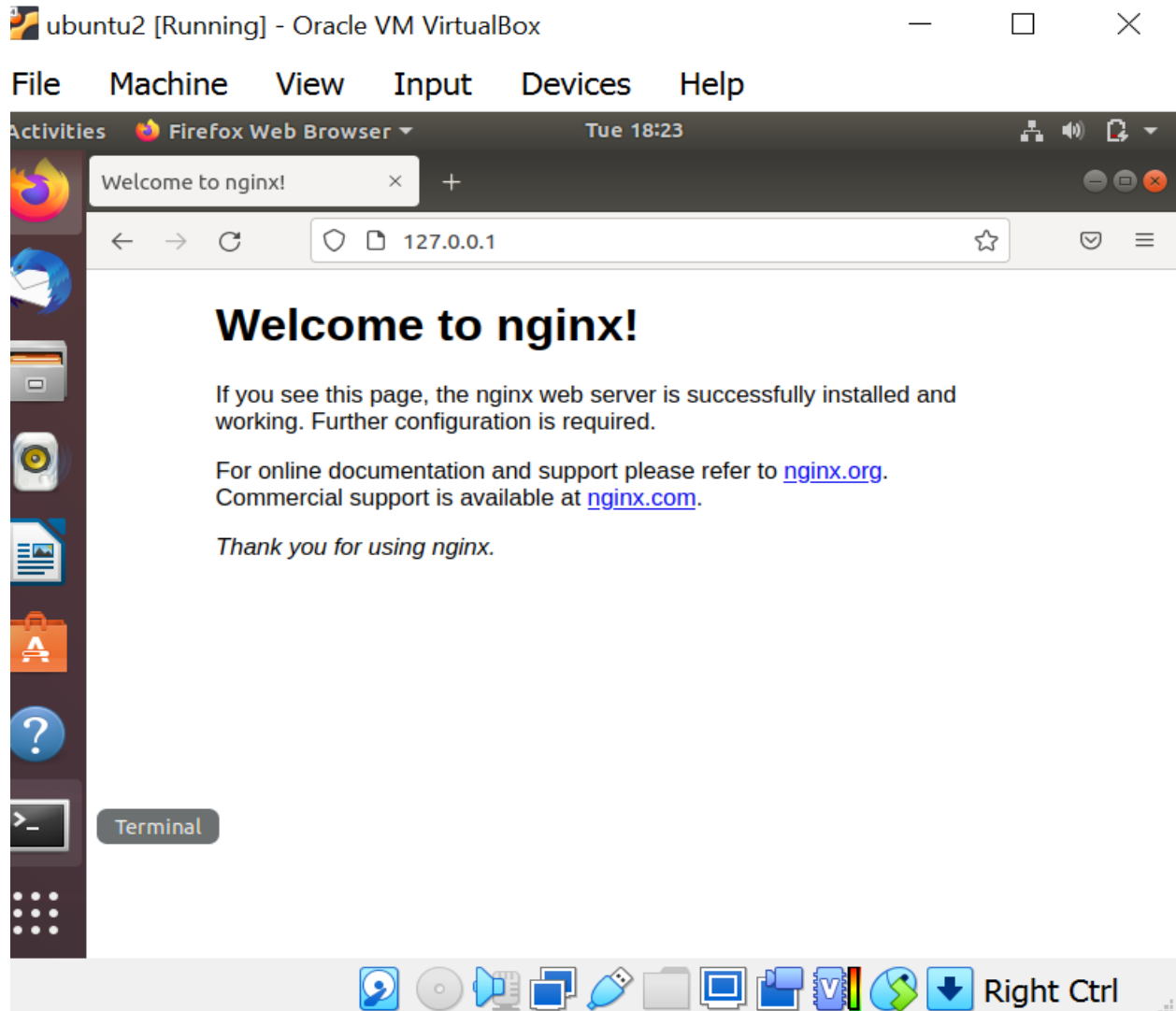
```
root@UBUNTU:/var/www/html# systemctl stop nginx
root@UBUNTU:/var/www/html# systemctl disable nginx
Synchronizing state of nginx.service with SysV service script with /lib/systemd
/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install disable nginx
root@UBUNTU:/var/www/html# systemctl restart nginx
root@UBUNTU:/var/www/html# systemctl reload nginx
```

Configure Your Firewall

A terminal window with a dark background and light text. The terminal text shows commands to list available applications in UFW, and then to allow Nginx for HTTP, HTTPS, and Full access. Each 'allow' command is followed by a message indicating that an existing rule was skipped.

```
root@UBUNTU:/var/www/html# sudo ufw app list
Available applications:
Apache
Apache Full
Apache Secure
CUPS
Nginx Full
Nginx HTTP
Nginx HTTPS
OpenSSH
Samba
root@UBUNTU:/var/www/html# sudo ufw allow 'nginx http'
Skipping adding existing rule
Skipping adding existing rule (v6)
root@UBUNTU:/var/www/html# sudo ufw allow 'nginx https'
Skipping adding existing rule
Skipping adding existing rule (v6)
root@UBUNTU:/var/www/html# sudo ufw allow 'nginx Full'
Skipping adding existing rule
Skipping adding existing rule (v6)
root@UBUNTU:/var/www/html# sudo apt-get install curl
```

<http://127.0.0.1>



If the system does not have a graphical interface, the Nginx Welcome page can be loaded in the terminal using curl:

```
sudo apt-get install curl  
curl -i 127.0.0.1
```

```
root@UBUNTU:/var/www/html# sudo nano /etc/nginx/sites-available/test_domain.com
root@UBUNTU:/var/www/html# curl -i 127.0.0.1
HTTP/1.1 200 OK
Server: nginx/1.14.0 (Ubuntu)
Date: Thu, 10 Aug 2023 04:51:41 GMT
Content-Type: text/html
Content-Length: 612
Last-Modified: Wed, 09 Aug 2023 13:05:58 GMT
Connection: keep-alive
ETag: "64d38f36-264"
Accept-Ranges: bytes

<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
    body {
        width: 35em;
        margin: 0 auto;
        font-family: Tahoma, Verdana, Arial, sans-serif;
    }
</style>
</head>
```

Create a Directory for the Test Domain

`sudo mkdir -p /var/www/test_domain.com/html`

```
root@UBUNTU:~# sudo mkdir -p /var/www/test_domain.com/html
root@UBUNTU:~# sudo vim /var/www/test_domain.com/html
```

Configure Ownership and Permissions

```
root@UBUNTU:~# sudo chown -R $USER:$USER /var/www/test_domain.com
chown: invalid user: '-R'
root@UBUNTU:~# sudo chown -R $USER:$USER /var/www/test_domain.com
root@UBUNTU:~# sudo chmod -R 755 /var/www/test_domain.com
```

Create an index.html File for the Server Block

`sudo nano /var/www/test_domain.com/html/index.html`

```
Unset
<html>
  <head>
    <title>Welcome to test_domain.com!</title>
  </head>
  <body>
```

```
<h1>This message confirms that your Nginx server block is  
working. Great work!</h1>  
</body>  
</html>
```

Create Nginx Server Block Configuration

```
sudo nano /etc/nginx/sites-available/test_domain.com
```

A screenshot of a terminal window on an Ubuntu system. The terminal title bar shows 'root@UBUNTU: /var/www/html'. The terminal content shows the Nginx configuration file for 'test_domain.com' being edited with nano. The configuration includes a server block listening on port 80, with root and index settings, and a location block for the root path that returns a 404 status if files are not found.

```
root@UBUNTU: /var/www/html  
File Edit View Search Terminal Help  
GNU nano 2.9.3 /etc/nginx/sites-available/test_domain.com  
server {  
listen 80;  
  
root /var/www/test_domain.com/html;  
index index.html index.htm index.nginx.debian.html;  
  
server_name test_domain.com www.test_domain.com;  
location / {  
try_files $uri $uri/ =404;  
}  
}
```

Create soft link

```
sudo ln -s /etc/nginx/sites-available/test_domain.com  
/etc/nginx/sites-enabled
```

Restart the nginx service:

```
sudo systemctl restart nginx
```

Test the Configuration

sudo nginx -t

```
root@UBUNTU:~# sudo systemctl restart nginx
root@UBUNTU:~# sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
root@UBUNTU:~#
```

Check test_domain.com in a Web Browser

