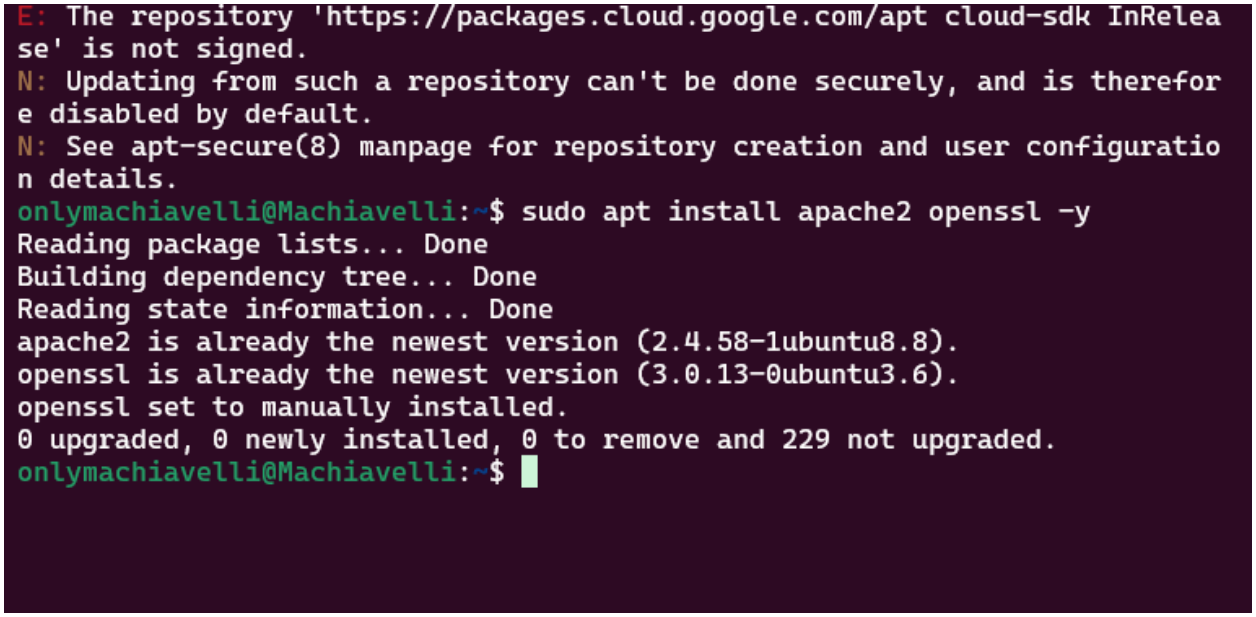
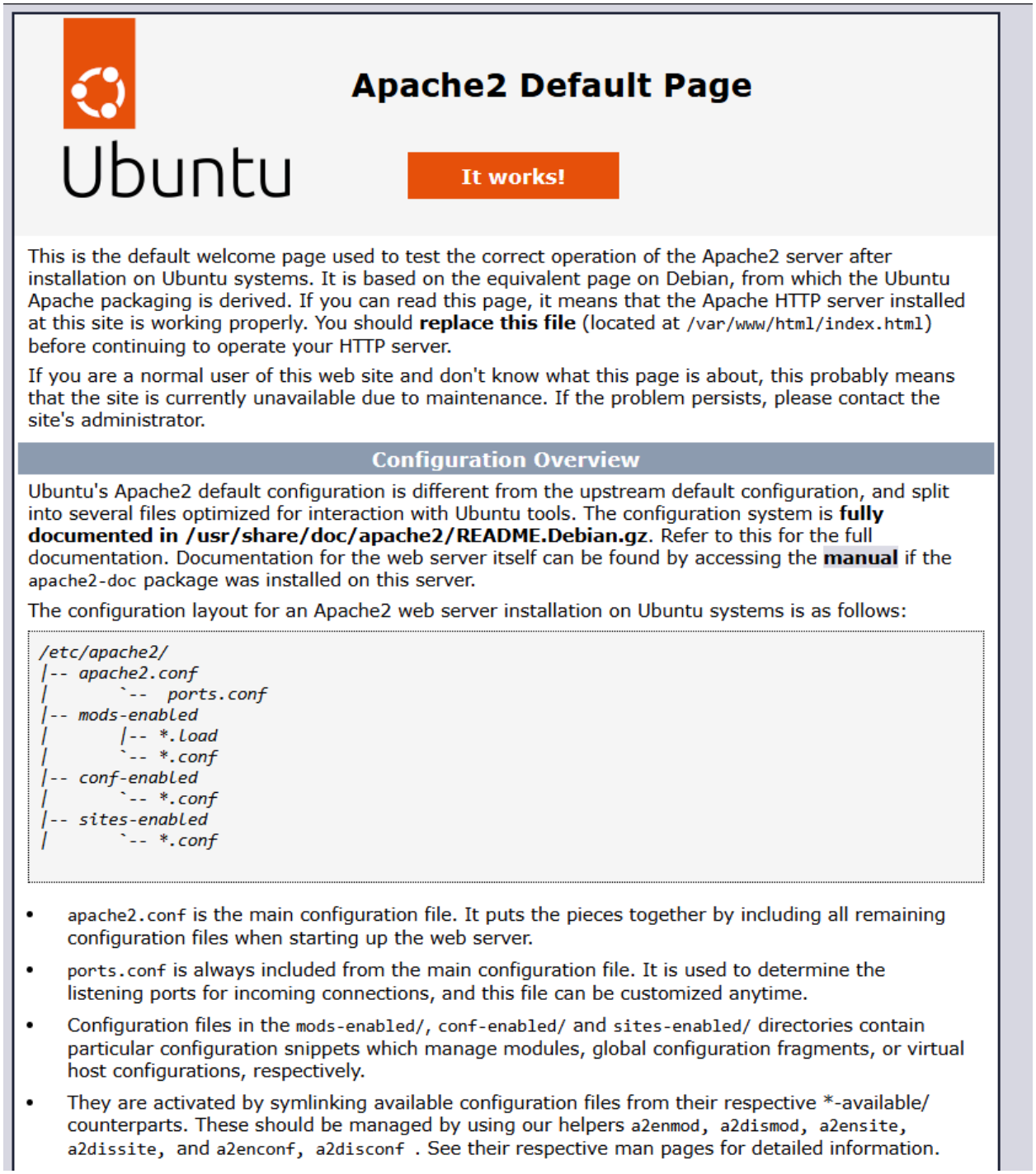
TP SSL : Alaa Barka

Step one : Install the dependencies :



Checking the apache server locally :



Apache2 Default Page

Ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in /usr/share/doc/apache2/README.Debian.gz**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|       `--  ports.conf
|-- mods-enabled
|       |-- *.load
|       `-- *.conf
|-- conf-enabled
|       `-- *.conf
|-- sites-enabled
|       `-- *.conf
```

- `apache2.conf` is the main configuration file. It puts the pieces together by including all remaining configuration files when starting up the web server.
- `ports.conf` is always included from the main configuration file. It is used to determine the listening ports for incoming connections, and this file can be customized anytime.
- Configuration files in the `mods-enabled/`, `conf-enabled/` and `sites-enabled/` directories contain particular configuration snippets which manage modules, global configuration fragments, or virtual host configurations, respectively.
- They are activated by symlinking available configuration files from their respective *-available/ counterparts. These should be managed by using our helpers `a2enmod`, `a2dismod`, `a2ensite`, `a2dissite`, and `a2enconf`, `a2disconf` . See their respective man pages for detailed information.

```
0 upgraded, 0 newly installed, 0 to remove and 229 not upgraded.
onlymachiavelli@Machiavelli:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; pr>
     Active: active (running) since Tue 2026-01-13 17:03:19 CET; 19h ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 9364 ExecStart=/usr/sbin/apachectl start (code=exited, statu>
   Main PID: 9367 (apache2)
      Tasks: 7 (limit: 7009)
     Memory: 13.6M ()
     CGroup: /system.slice/apache2.service
             ├─9367 /usr/sbin/apache2 -k start
             ├─9369 /usr/sbin/apache2 -k start
             ├─9370 /usr/sbin/apache2 -k start
             ├─9371 /usr/sbin/apache2 -k start
             ├─9372 /usr/sbin/apache2 -k start
             ├─9373 /usr/sbin/apache2 -k start
             └─9380 /usr/sbin/apache2 -k start

Jan 13 17:03:19 Machiavelli systemd[1]: Starting apache2.service - The Ap>
Jan 13 17:03:19 Machiavelli systemd[1]: Started apache2.service - The Apa>
lines 1-19/19 (END)
```

Generating the private key :

```
lines 1-19/19 (END)
onlymachiavelli@Machiavelli:~$
onlymachiavelli@Machiavelli:~$ openssl genrsa -out server.key 2048
onlymachiavelli@Machiavelli:~$
```

Creating self signed certificate SSL

```
onlymachiavelli@Machiavelli:~$ openssl req -x509 -new -nodes -key server.k
ey -days 365 -out server.crt
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]:FR
State or Province Name (full name) [Some-State]:Paris
Locality Name (eg, city) []:Paris
Organization Name (eg, company) [Internet Widgits Pty Ltd]:AstroOrg
Organizational Unit Name (eg, section) []:Astro
Common Name (e.g. server FQDN or YOUR name) []:Astro
Email Address []:mralaabarka@gmail.com
onlymachiavelli@Machiavelli:~$
```

Moving the certificates to the system folders :

```
onlymachiavelli@Machiavelli:~$ sudo cp server.key /etc/ssl/private/
sudo cp server.crt /etc/ssl/certs/
onlymachiavelli@Machiavelli:~$
```

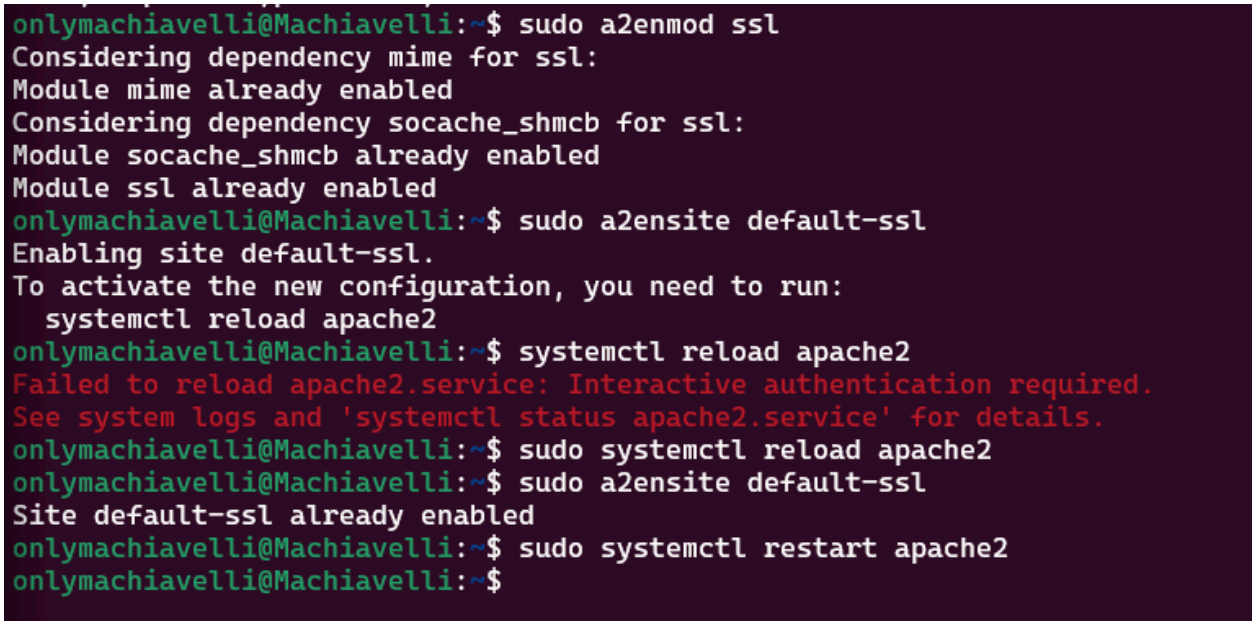
Securing the private Key :

```
onlymachiavelli@Machiavelli:~$ sudo chmod 600 /etc/ssl/private/server.key
onlymachiavelli@Machiavelli:~$
```

Enable the ssl module in apache

```
onlymachiavelli@Machiavelli:~$ sudo systemctl restart apache2
onlymachiavelli@Machiavelli:~$ sudo ss -tlnp | grep 443
LISTEN 0      511                *:443             *:*    users:(("apache2
",pid=11094,fd=6),("apache2",pid=11092,fd=6),("apache2",pid=11091,fd=6),("
apache2",pid=11090,fd=6),("apache2",pid=11089,fd=6),("apache2",pid=11088,f
d=6),("apache2",pid=11086,fd=6))
onlymachiavelli@Machiavelli:~$ sudo a2enmod ssl
Considering dependency mime for ssl:
Module mime already enabled
Considering dependency socache_shmcb for ssl:
Module socache_shmcb already enabled
Module ssl already enabled
onlymachiavelli@Machiavelli:~$
```

Enabling the ssl and restarting the apache server



We got the certificate,
But it is not trusted by the browser :

Lets cook some simple codes

```
 GNU nano 7.2                    index.html *
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8" />
  <title>Alaa Barka – Embedded</title>
  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <style>
    html, body {
      margin: 0;
      padding: 0;
      width: 100%;
      height: 100%;
      overflow: hidden;
    }

    iframe {
      width: 100%;
      height: 100%;
      border: none;
    }
  </style>
</head>
<body>
  <iframe
    src="https://alaabarka.space/"
    loading="lazy"
    referrerpolicy="no-referrer"
  ></iframe>
</body>
</html>
```

And here’s the results : (check the link)