

Install Apache on Linux with HTTP and HTTPS

Installing Apache on Linux

- Download Apache2 from apt
 - `sudo apt update && sudo apt install apache2`

Configuring HTTP apache server

- **Create the directory that will contain our website**
 - `sudo mkdir -p /var/www/ns/html`
 - `sudo chown -R ubuntu:ubuntu /var/www/ns/html`
 - `sudo chmod -R 755 /var/www/ns`
- **Create a simple webpage for our website**
 - `nano /var/www/ns/html/index.html`
 - create a simple index.html webpage

```
<html>
  <head>
    <title>Network And Security Website</title>
  </head>
  <body>
    <h1> Hi this is the NS website! </h1>
  </body>
</html>
```

- **Create a new virtual host file**
 - `cd /etc/apache2/sites-available`
 - `sudo nano networksecuritysite.conf`
 - copy and paste the following configuration

```
<VirtualHost *:80>
    ServerAdmin admin@admin.it
    ServerName ns.it
    ServerAlias ns.it
    DocumentRoot /var/www/ns/html
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

- **Activate virtual host configuration file**
 - `sudo a2ensite networksecuritysite.conf`
- **Disable default site**
 - `sudo a2dissite 000-default.conf`
- **Add servername configuration**
 - `cd /etc/apache2/conf-available`
 - copy and paste "ServerName ns.it" inside servername.conf
 - `sudo a2enconf servername.conf`

- **Restart apache**
 - `sudo service apache2 restart`
- **Check syntax error**
 - `sudo apache2ctl configtest`
- **Check if everything works: connect with raspberryPi to ipAddress of host1 using the browser and see if the sites is correct**

Configuring HTTPS

- **Enable ssl**
 - `sudo a2enmod ssl`
- **make dir for certificates inside apache2**
 - `sudo mkdir /etc/apache2/cert`
 - `cd /etc/apache2/cert`
- **Generate a self-signed certificate following ([here](#) for a detailed documentation)**
- **Create directory that will contain our website's html**
 - `sudo mkdir -p /var/www/networksecuritysite/https/html`
 - `sudo chown -R ubuntu:ubuntu /var/www/networksecuritysite/https/html`
- **Create a simple webpage for our website**
 - `nano /var/www/networksecuritysite/https/html/index.html`
 - put some html content like

```
<html>
  <head>
    <title>Network Security Website</title>
  </head>
  <body>
    <h1> Hi this is the NS website in HTTPS!</h1>
  </body>
</html>
```

- **Modify virtual host file appending new configuration**
 - `sudo nano /etc/apache2/sites-enabled/networksecuritysite.conf`

```
<VirtualHost *:443>
  ServerAdmin webmaster@localhost
  DocumentRoot /var/www/html/networksecuritydemacs/ssl/html
  ErrorLog ${APACHE_LOG_DIR}/error.log
  CustomLog ${APACHE_LOG_DIR}/access.log combined
  SSLEngine on
  SSLCertificateFile /etc/apache2/cert/server.cert
  SSLCertificateKeyFile /etc/apache2/cert/server.key
</VirtualHost>
```

- **Check syntax error**
 - `sudo apache2ctl configtest`
- **Restart apache**
 - `sudo service apache2 restart`