

# System Admin2 Lab4

## Lab objectives:

- Using apt install apache2 server.

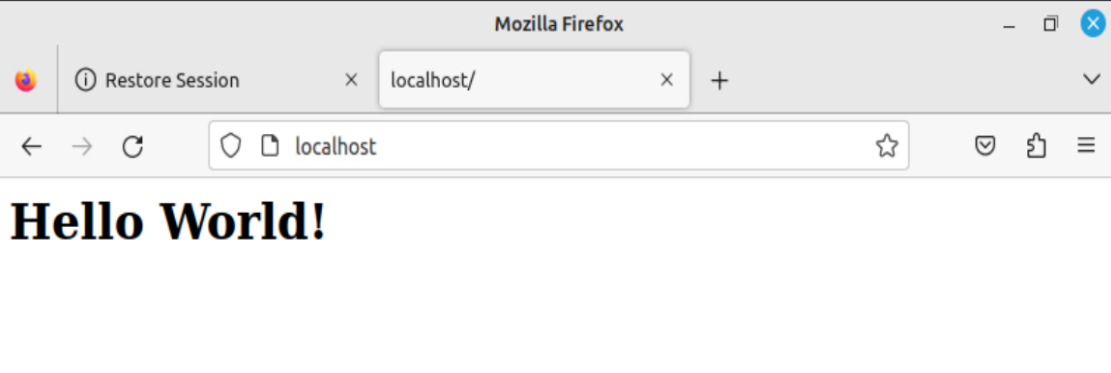
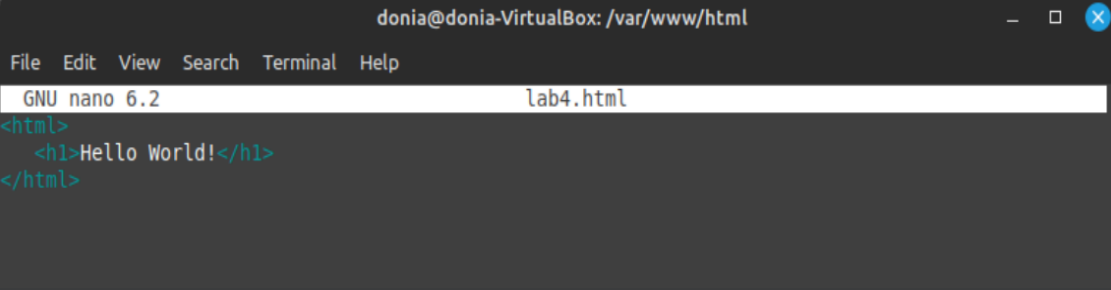
- sudo apt install apache2
- sudo systemctl start apache2

```
donia@donia-VirtualBox:~$ sudo apt install apache2
[sudo] password for donia:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3
  libaprutil1-ldap liblua5.3-0
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3
  libaprutil1-ldap liblua5.3-0
0 upgraded, 9 newly installed, 0 to remove and 8 not upgraded.
Need to get 2,058 kB of archives.
After this operation, 8,216 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapr1 amd64 1.7.0-8ubuntu0.22.04.1 [108 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1 amd64 1.6.1-5ubuntu4.22.04.1 [92.6 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-5ubuntu4.22.04.1 [11.3 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-ldap amd64 1.6.1-5ubuntu4.22.04.1 [9,168 B]
Get:5 http://archive.ubuntu.com/ubuntu jammy/main amd64 liblua5.3-0 amd64 5.3.6-1build1 [140 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-bin amd64 2.4.52-1ubuntu4
donia@donia-VirtualBox:~$ sudo systemctl start apache2
donia@donia-VirtualBox:~$
```

- Replace the default index.html content with your own content.

- cd /var/www/html
- sudo nano lab4.html
- sudo mv lab4.html index.html
- sudo systemctl restart apache2

```
donia@donia-VirtualBox:~$ cd /var/www/html
donia@donia-VirtualBox:/var/www/html$ sudo nano lab4.html
[sudo] password for donia:
donia@donia-VirtualBox:/var/www/html$ sudo mv lab4.html index.html
donia@donia-VirtualBox:/var/www/html$ sudo systemctl restart apache2
donia@donia-VirtualBox:/var/www/html$
```



The image shows a terminal window and a web browser. The terminal window is titled 'donia@donia-VirtualBox: /var/www/html' and shows the following commands and output:

```
donia@donia-VirtualBox:~$ cd /var/www/html
donia@donia-VirtualBox:/var/www/html$ sudo nano lab4.html
[sudo] password for donia:
donia@donia-VirtualBox:/var/www/html$ sudo mv lab4.html index.html
donia@donia-VirtualBox:/var/www/html$ sudo systemctl restart apache2
donia@donia-VirtualBox:/var/www/html$
```

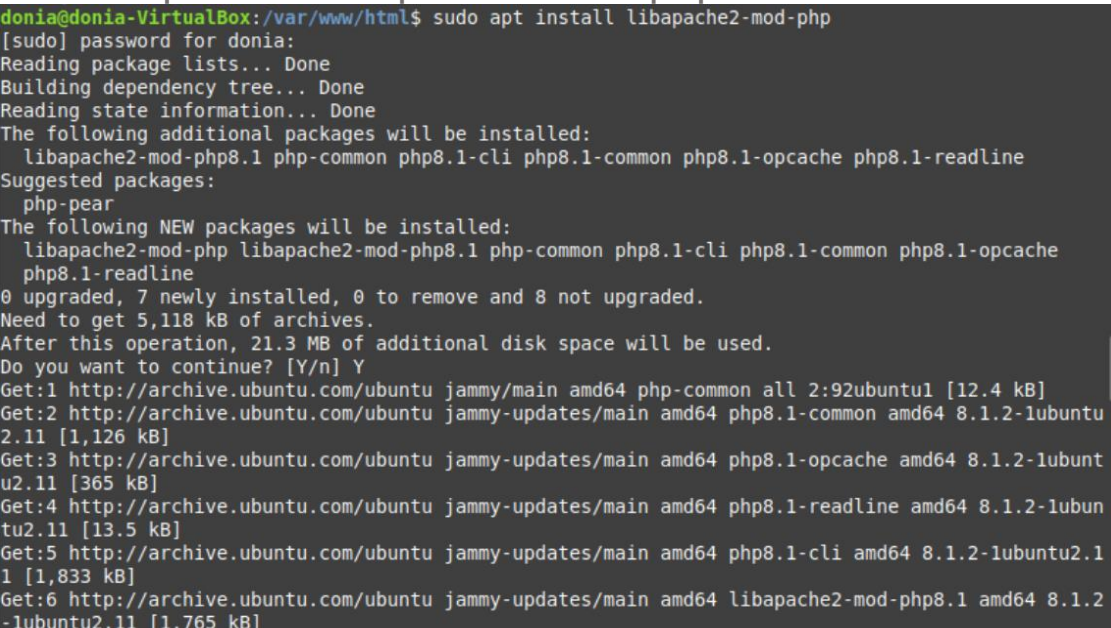
The nano editor window shows the file 'lab4.html' with the following content:

```
<html>
<h1>Hello World!</h1>
</html>
```

The Mozilla Firefox browser window shows the page 'localhost/' with the content 'Hello World!'.

- Install php module for apache2.

```
- sudo apt install libapache2-mod-php
```

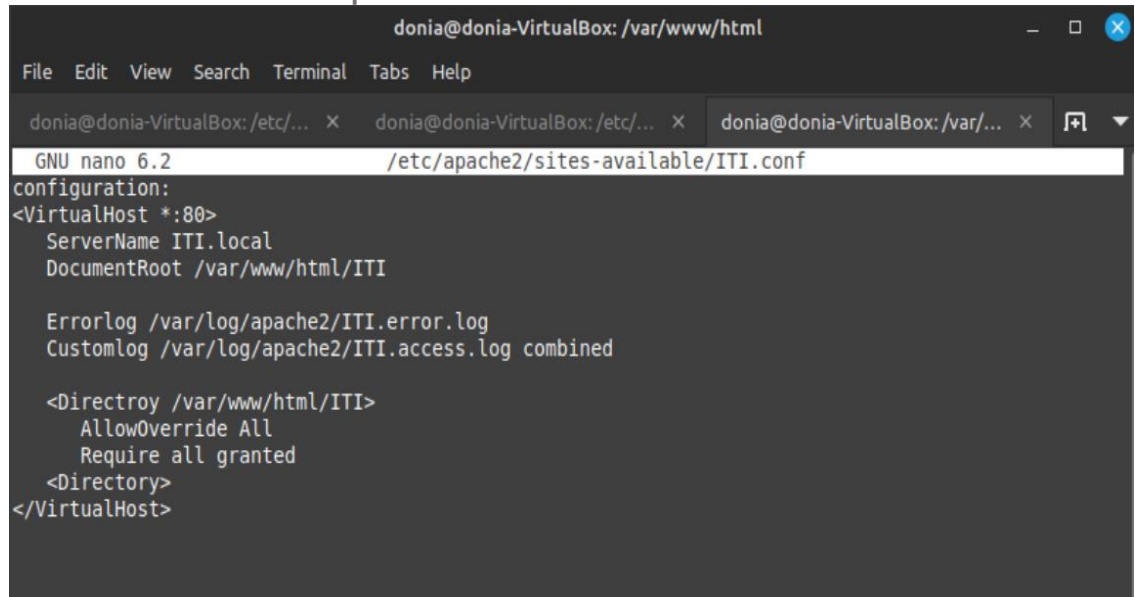


The image shows a terminal window with the following output:

```
donia@donia-VirtualBox:/var/www/html$ sudo apt install libapache2-mod-php
[sudo] password for donia:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php8.1 php-common php8.1-cli php8.1-common php8.1-opcache php8.1-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php libapache2-mod-php8.1 php-common php8.1-cli php8.1-common php8.1-opcache
  php8.1-readline
0 upgraded, 7 newly installed, 0 to remove and 8 not upgraded.
Need to get 5,118 kB of archives.
After this operation, 21.3 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 php-common all 2:92ubuntu1 [12.4 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-common amd64 8.1.2-1ubuntu
2.11 [1,126 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-opcache amd64 8.1.2-1ubun
t2.11 [365 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-readline amd64 8.1.2-1ubun
tu2.11 [13.5 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-cli amd64 8.1.2-1ubuntu2.1
1 [1,833 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapache2-mod-php8.1 amd64 8.1.2
-1ubuntu2.11 [1,765 kB]
```

- Create new Named VirtualHost to serve new php project with special access log.

```
- sudo mkdir ITI
- sudo nano ITI/index.php
- sudo nano /etc/apache2/sites-available/ITI.conf
```



The screenshot shows a terminal window titled 'donia@donia-VirtualBox: /var/www/html'. The nano editor is open to the file '/etc/apache2/sites-available/ITI.conf'. The configuration content is as follows:

```
configuration:
<VirtualHost *:80>
  ServerName ITI.local
  DocumentRoot /var/www/html/ITI

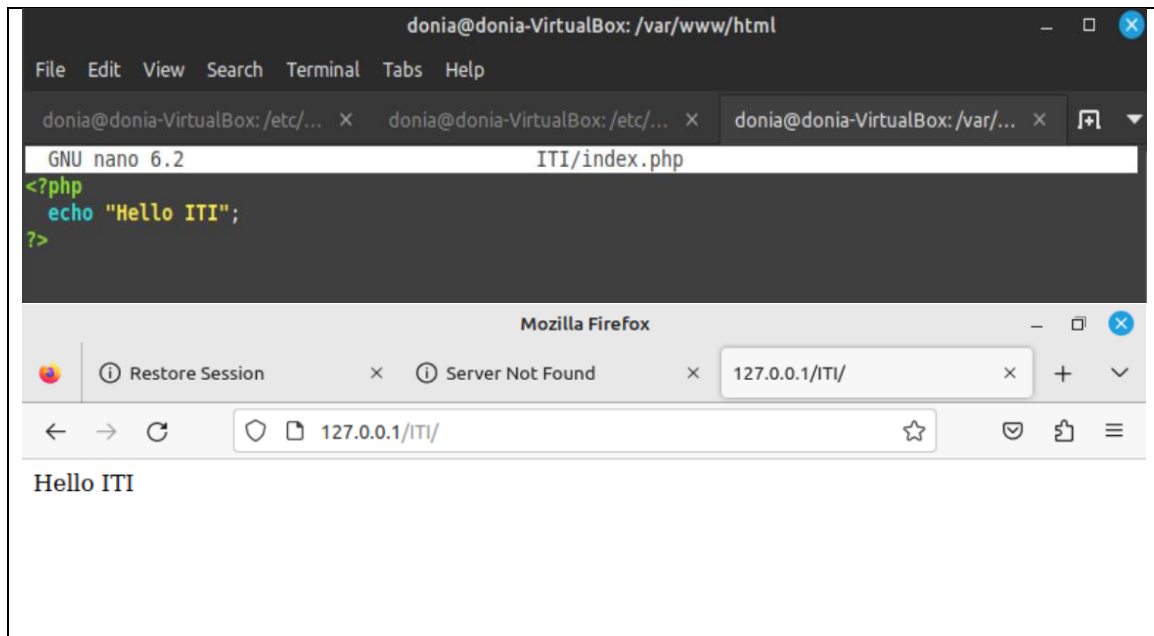
  Errorlog /var/log/apache2/ITI.error.log
  Customlog /var/log/apache2/ITI.access.log combined

  <Directory /var/www/html/ITI>
    AllowOverride All
    Require all granted
  </Directory>
</VirtualHost>
```

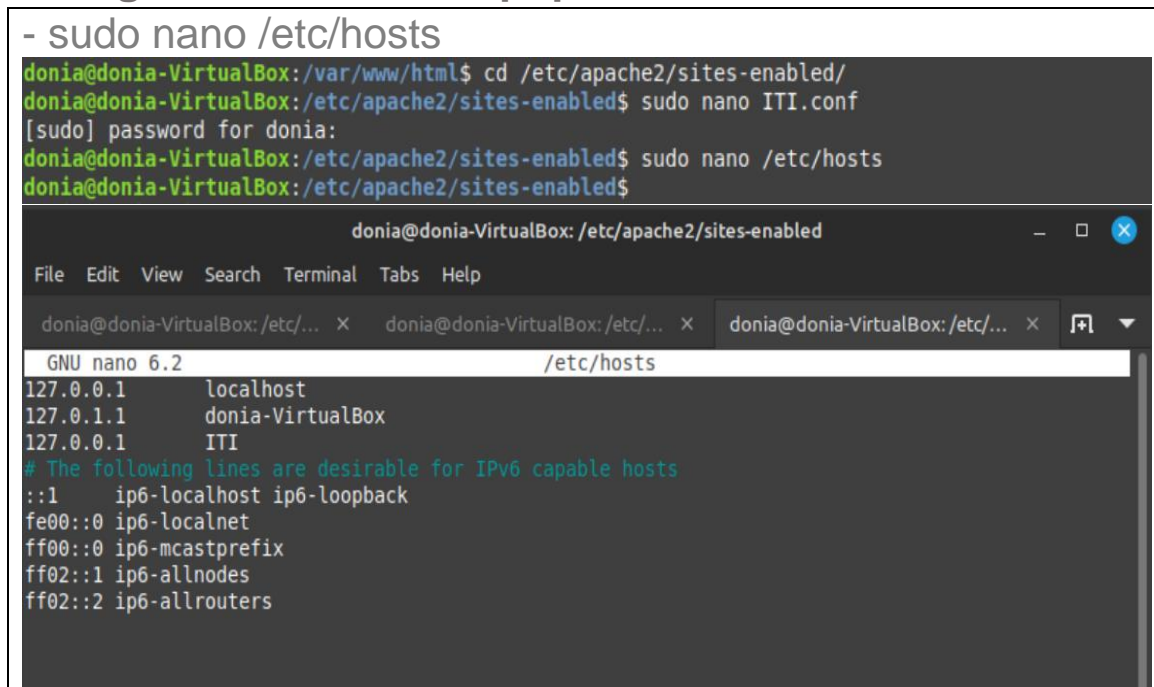
- Create simple index.php file for the php site.

```
- sudo nano ITI/index.php
- sudo systemctl reload apache2
```

```
donia@donia-VirtualBox:/etc/apache2/sites-enabled$ cd /var/www/html
donia@donia-VirtualBox:/var/www/html$ sudo mkdir ITI
[sudo] password for donia:
donia@donia-VirtualBox:/var/www/html$ sudo nano ITI/index.php
donia@donia-VirtualBox:/var/www/html$ sudo nano /etc/apache2/sites-available/ITI.conf
donia@donia-VirtualBox:/var/www/html$ sudo systemctl reload apache2
donia@donia-VirtualBox:/var/www/html$ sudo a2ensite ITI.conf
Enabling site ITI.
To activate the new configuration, you need to run:
  systemctl reload apache2
donia@donia-VirtualBox:/var/www/html$ sudo systemctl reload apache2
donia@donia-VirtualBox:/var/www/html$
donia@donia-VirtualBox:/var/www/html$
donia@donia-VirtualBox:/var/www/html$ sudo nano /etc/apache2/sites-available/ITI.conf
donia@donia-VirtualBox:/var/www/html$ sudo systemctl reload apache2
Job for apache2.service failed.
See "systemctl status apache2.service" and "journalctl -xeu apache2.service" for details.
donia@donia-VirtualBox:/var/www/html$
```



- **Configure /etc/hosts for php site.**



- Disable directory listing for the new virtualhost.

- sudo nano /etc/apache2/sites-available/ITI.conf

```
donia@donia-VirtualBox: /etc/apache2/sites-enabled
File Edit View Search Terminal Tabs Help
donia@donia-VirtualBox: /etc/... × donia@donia-VirtualBox: /etc/... × donia@donia-VirtualBox: /etc/... ×
GNU nano 6.2 /etc/apache2/sites-available/ITI.conf *
configuration:
<VirtualHost *:80>
    ServerName ITI.local
    DocumentRoot /var/www/html/ITI

    Errorlog /var/log/apache2/ITI.error.log
    Customlog /var/log/apache2/ITI.access.log combined

    <Directory /var/www/html/ITI>
        Options -Indexes
        AllowOverride All
        Require all granted
    </Directory>
</VirtualHost>
```