Programming Lab 3

Practical No. 4

To install and configure a Web Server.

2019BTECS00058
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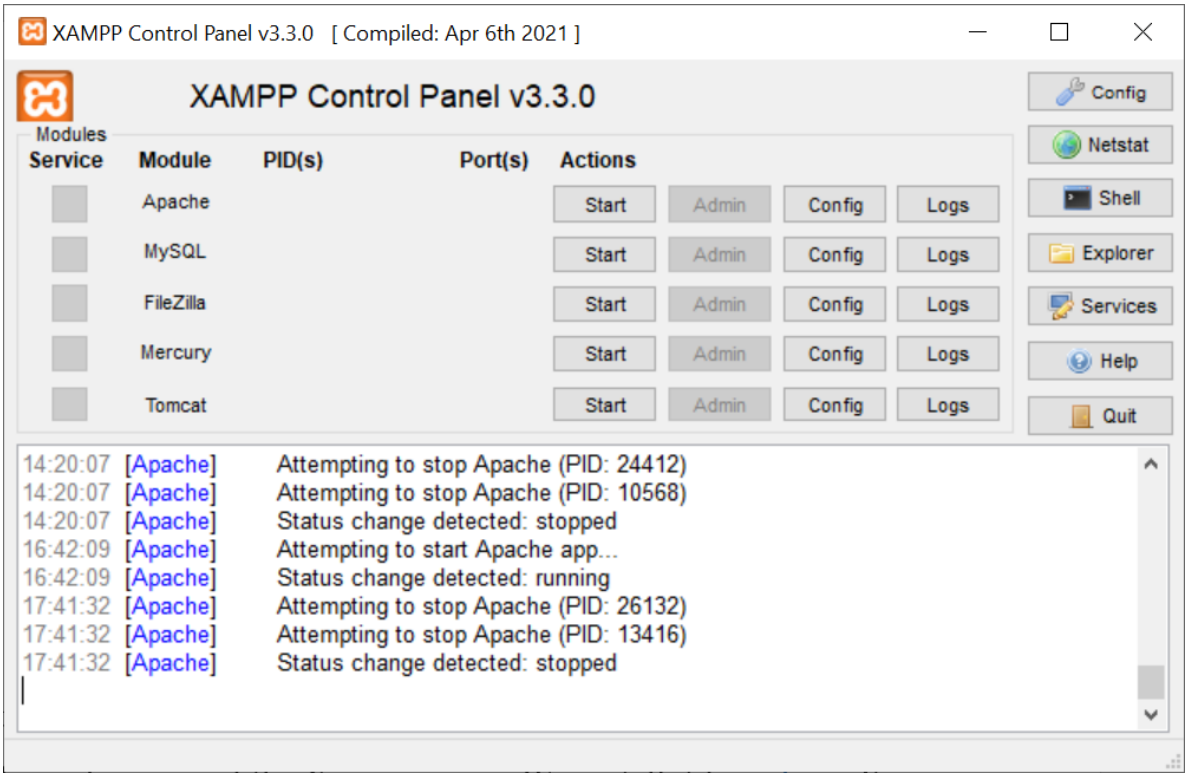
Problem Statement 1:

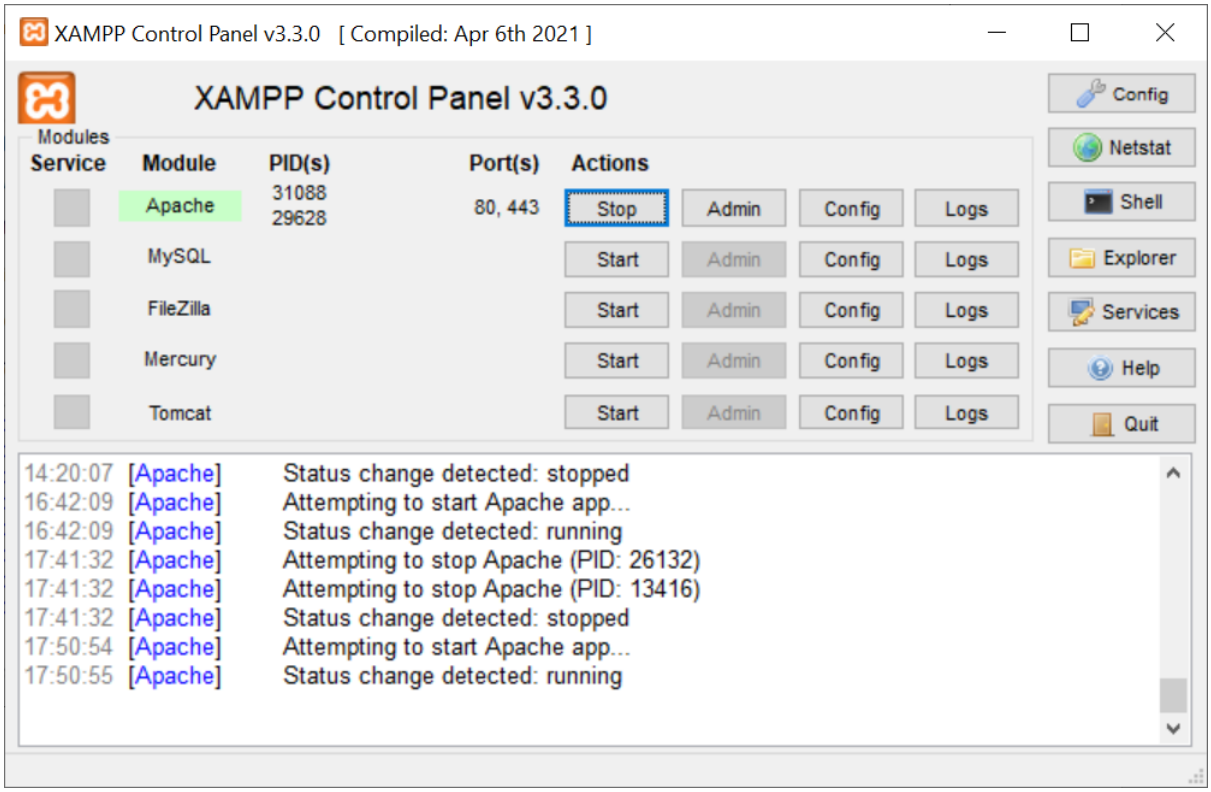
1. Install a web server on your machine. Run the server locally.

We shall be making use of the Xampp server. We install it from here. It installs Apache, MySQL, FileZilla, Mercury and Tomcat.

Xampp control panel helps to control the servers.



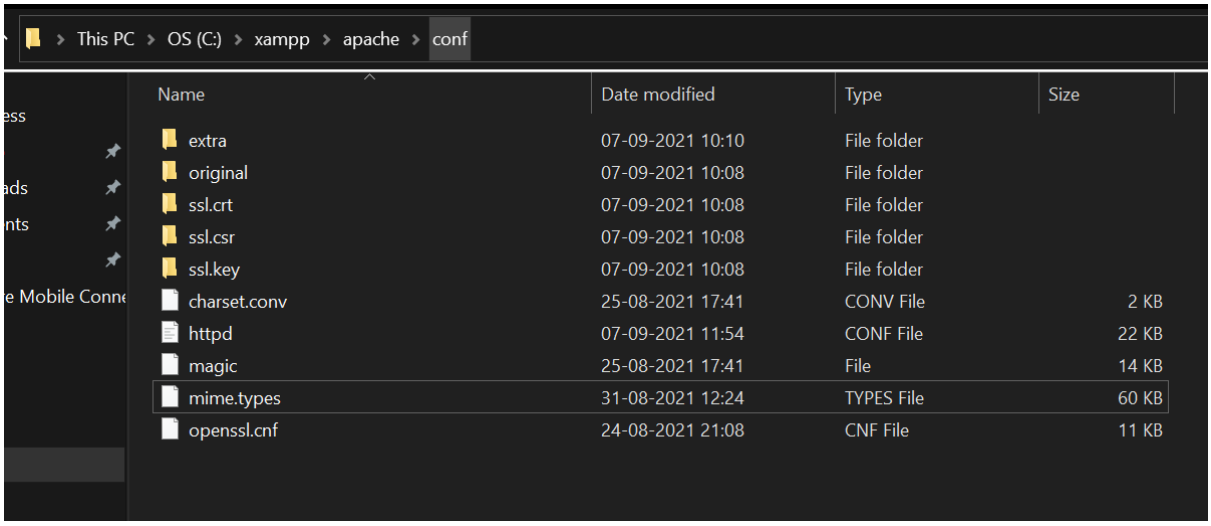
Clicking on Start would start the Xampp server.



2. Locate and study its configuration file.

The Apache config files are located in xampp/apache/conf folder.

The main config file is the httpd.conf



This is the main Apache HTTP server configuration file. It contains the configuration directives that give the server its instructions.

Some important aspects of the conf file are:

```
# Do not add a slash at the end of the directory path.  If you point
# ServerRoot at a non-local disk, be sure to specify a local disk on the
# Mutex directive, if file-based mutexes are used.  If you wish to share the
# same ServerRoot for multiple httpd daemons, you will need to change at
# least PidFile.
#
Define SRVROOT "C:/xampp/apache"

ServerRoot "C:/xampp/apache"

#
# Mutex: Allows you to set the mutex mechanism and mutex file directory
# for individual mutexes, or change the global defaults
#
# Uncomment and change the directory if mutexes are file-based and the default
# mutex file directory is not on a local disk or is not appropriate for some
# other reason.
#
# Mutex default:logs

#
# Listen: Allows you to bind Apache to specific IP addresses and/or
# ports, instead of the default. See also the <VirtualHost>
# directive.
#
# Change this to Listen on specific IP addresses as shown below to
# prevent Apache from glomming onto all bound IP addresses.
#
#Listen 12.34.56.78:80
Listen 80
```

Server Root Directory is ‘C:/xampp/apache’ while the port is listening at 80. We can of course change that later. We import modules for the server in the Apache from the config.

```
#
# ServerAdmin: Your address, where problems with the server should be
# e-mailed.  This address appears on some server-generated pages, such
# as error documents.  e.g. admin@your-domain.com
#
ServerAdmin postmaster@localhost

#
# ServerName gives the name and port that the server uses to identify itself.
# This can often be determined automatically, but we recommend you specify
# it explicitly to prevent problems during startup.
#
# If your host doesn't have a registered DNS name, enter its IP address here.
#
ServerName localhost:80

#
# Deny access to the entirety of your server's filesystem. You must
# explicitly permit access to web content directories in other
# <Directory> blocks below.
#
<Directory />
    AllowOverride none
    Require all denied
</Directory>
```

We can set up DNS for IP – default is the localhost. Also, we can configure what files are accessible to the server in the system.

```
<IfModule mime_module>
    #
    # TypesConfig points to the file containing the list of mappings from
    # filename extension to MIME-type.
    #
    TypesConfig conf/mime.types

    #
    # AddType allows you to add to or override the MIME configuration
    # file specified in TypesConfig for specific file types.
    #
    #AddType application/x-gzip .tgz
    #
    # AddEncoding allows you to have certain browsers uncompress
    # information on the fly. Note: Not all browsers support this.
    #
    #AddEncoding x-compress .Z
    #AddEncoding x-gzip .gz .tgz
    #
    # If the AddEncoding directives above are commented-out, then you
    # probably should define those extensions to indicate media types:
    #
    AddType application/x-compress .Z
    AddType application/x-gzip .gz .tgz
```

We can configure the MIME types to be served onto the server. Also, we find the SSL settings and much more in the conf file.

3. Change the port number in the configuration file to any other valid port number. Re-run the server locally using newly assigned port number.

We have to change the port address at 2 places -> at the IP address and at the listening port.

Let’s change from 80 to 8000.

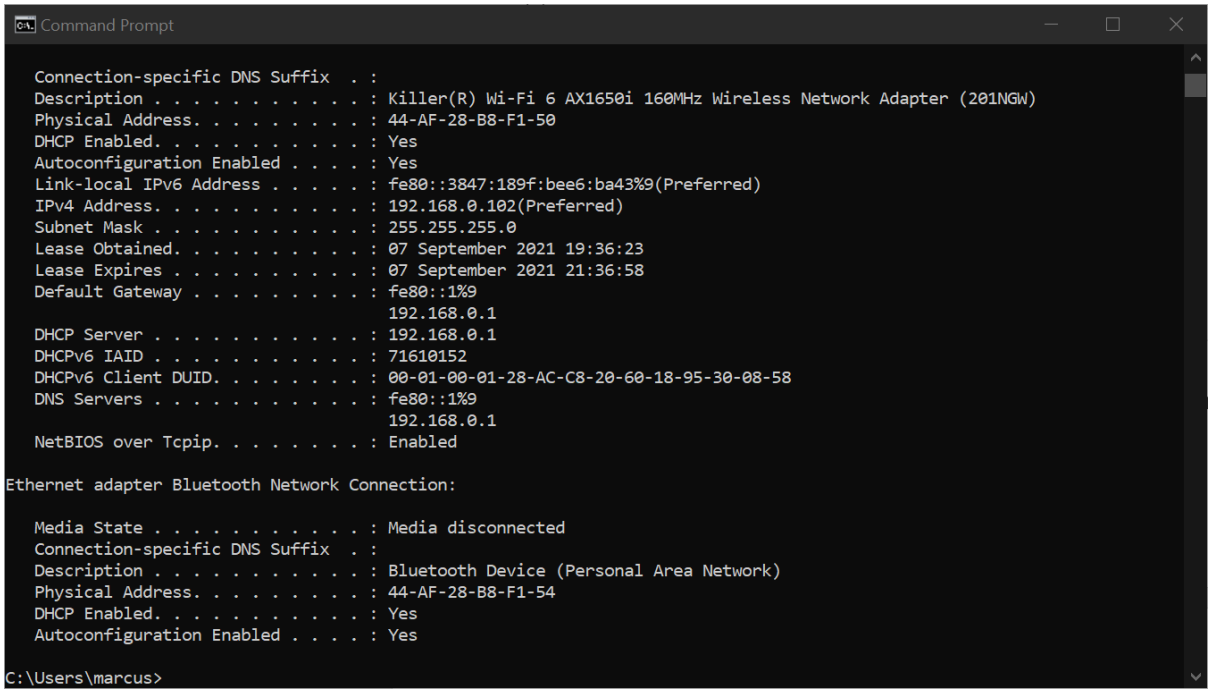
```
221   #
222   # ServerName gives the name and port that the server uses to identify itself.
223   # This can often be determined automatically, but we recommend you specify
224   # it explicitly to prevent problems during startup.
225   #
226   # If your host doesn't have a registered DNS name, enter its IP address here.
227   #
228   ServerName localhost:8000
229
```

```
#
# Listen: Allows you to bind Apache to specific IP addresses and/or
# ports, instead of the default. See also the <VirtualHost>
# directive.
#
# Change this to Listen on specific IP addresses as shown below to
# prevent Apache from glomming onto all bound IP addresses.
#
#Listen 12.34.56.78:80
Listen 8000
```

Let’s check the port 8000.

4. Change the default IP address (127.0.0.1 or localhost) and port number of the server in the configuration file to any other valid IP address and port number. Re-run the server and access it in a network from another machine.

Let’s find our default IP address of the network.



We find that it is 192.168.0.102

Let’s change our port to 192.168.0.102:8000 in both the listening and IP port.

```
#
# Listen: Allows you to bind Apache to specific IP addresses and/or
# ports, instead of the default. See also the <VirtualHost>
# directive.
#
# Change this to Listen on specific IP addresses as shown below to
# prevent Apache from glomming onto all bound IP addresses.
#
#Listen 12.34.56.78:80
# Listen 8000

Listen 192.168.0.102:8000
```

```
#
# ServerName gives the name and port that the server uses to identify itself.
# This can often be determined automatically, but we recommend you specify
# it explicitly to prevent problems during startup.
#
# If your host doesn't have a registered DNS name, enter its IP address here.
#
ServerName 192.168.0.102:8000
```

Let’s check on our local device.

From another device – a Ubuntu laptop connected on the same network.