

*Third Year B. Tech., Semester V [2021-22]*

## **Programming Lab 3**

***Practical 4: To install and configure a Web Server.***

**\*PRN: 2020BTECS00206      \*Batch: T8**

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➤ **Problem Statement 1:**

- 1. Install a web server on your machine. Run the server locally.**
- 2. Locate and study its configuration 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.**
- 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.**

**Some web servers: Apache Tomcat, Microsoft IIS, XAMPP, LAMP, Nginx**

## 1. Install a web server on your machine.

Run the server locally. XAMPP is a release made available by the non-profit project Apache Friends. Versions with PHP 7.3.30 / PHP 7.3.30, 7.4.23 / PHP 7.4.23, 8.0.10 / PHP 8.0.10 are available for download on the Apache Friends website.

Download XAMPP

XAMPP Download Success

apachefriends.org/download.html

Apache Friends

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# Download

XAMPP is an easy to install Apache distribution containing MariaDB, PHP, and Perl. Just download and start the installer. It's that easy.

**XAMPP for Windows 7.3.30, 7.4.23 & 8.0.10**

Version	Checksum	Size
7.3.30 / PHP 7.3.30	What's Included? md5 sha1	Download (64 bit) 158 Mb
7.4.23 / PHP 7.4.23	What's Included? md5 sha1	Download (64 bit) 160 Mb
8.0.10 / PHP 8.0.10	What's Included? md5 sha1	Download (64 bit) 161 Mb

Requirements Add-ons More Downloads »

Windows XP or 2003 are not supported. You can download a compatible version of XAMPP for these platforms [here](#).

**Documentation/FAQs**

There is no real manual or handbook for XAMPP. We wrote the documentation in the form of FAQs. Have a burning question that's not answered here? Try the Forums or Stack Overflow.

- Linux FAQs
- Windows FAQs
- OS X FAQs
- OS X XAMPP-VM FAQs

**Add-ons**

Cookie Settings

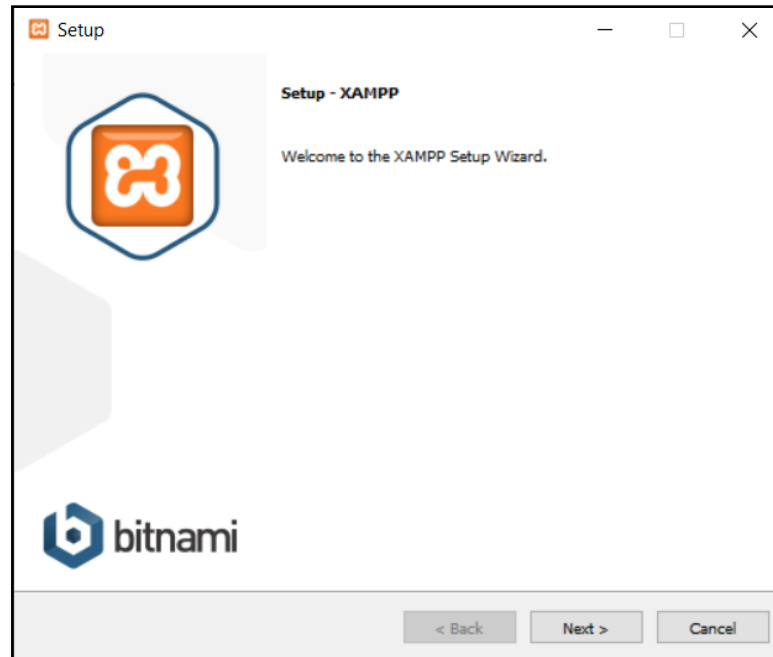
xampp-windows-x...exe  
92.7/161 MB, 2 mins left

Show all

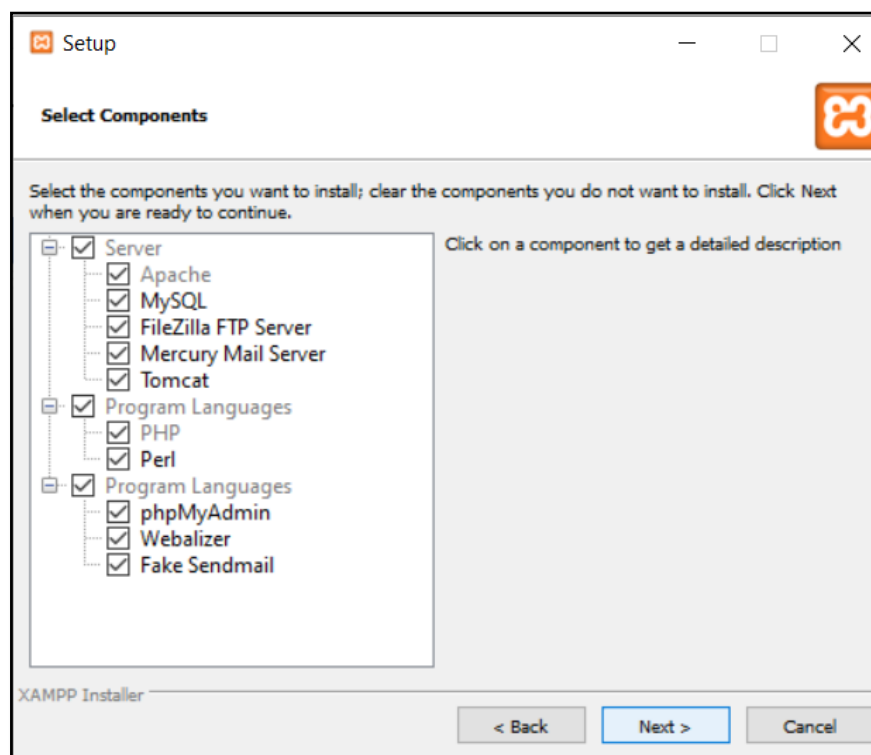
Once the software bundle has been downloaded, you can start the installation by double clicking on the file with the ending .exe.

Since an active antivirus program can negatively affect the installation process, it's recommended to temporarily pause any antivirus software until all XAMPP components have successfully been installed.

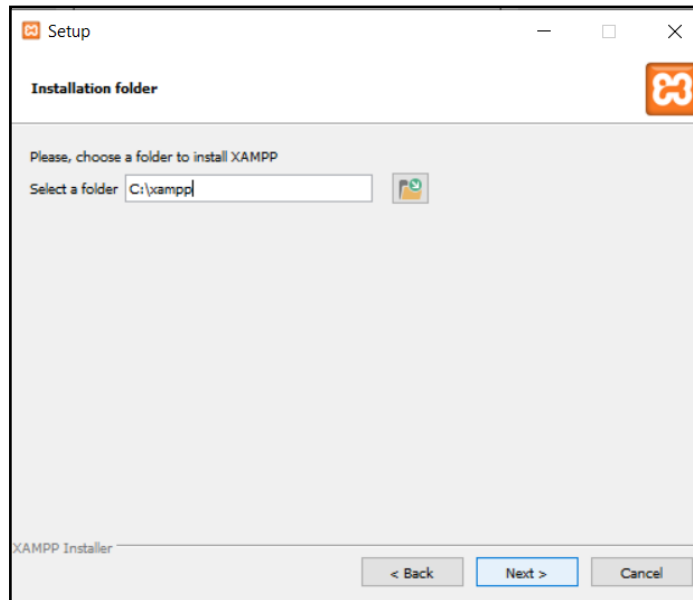
After you've opened the .exe file (after deactivating your antivirus program(s) and taken note of the User Account Control, the start screen of the XAMPP setup wizard should appear automatically. Click on 'Next' to configure the installation settings.



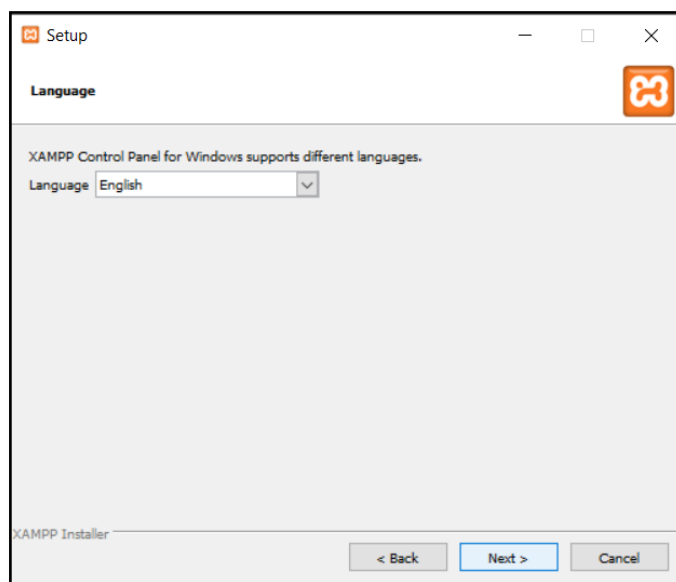
Under 'Select Components', you have the option to exclude individual components of the XAMPP software bundle from the installation. But for a full local test server, we recommend you install using the standard setup and all available components. After making your choice, click 'Next'.

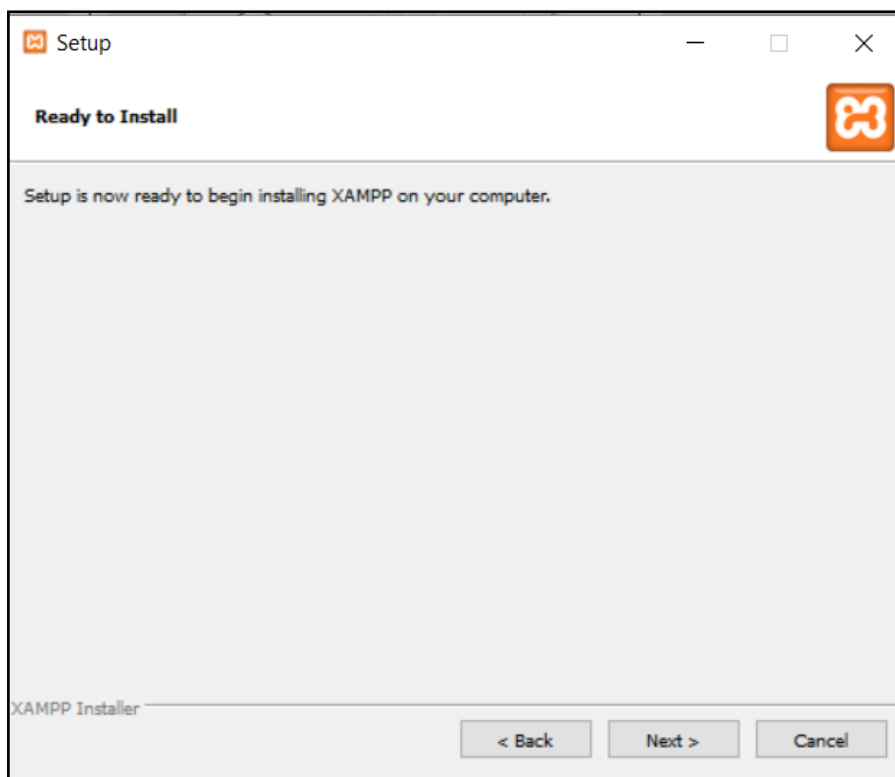
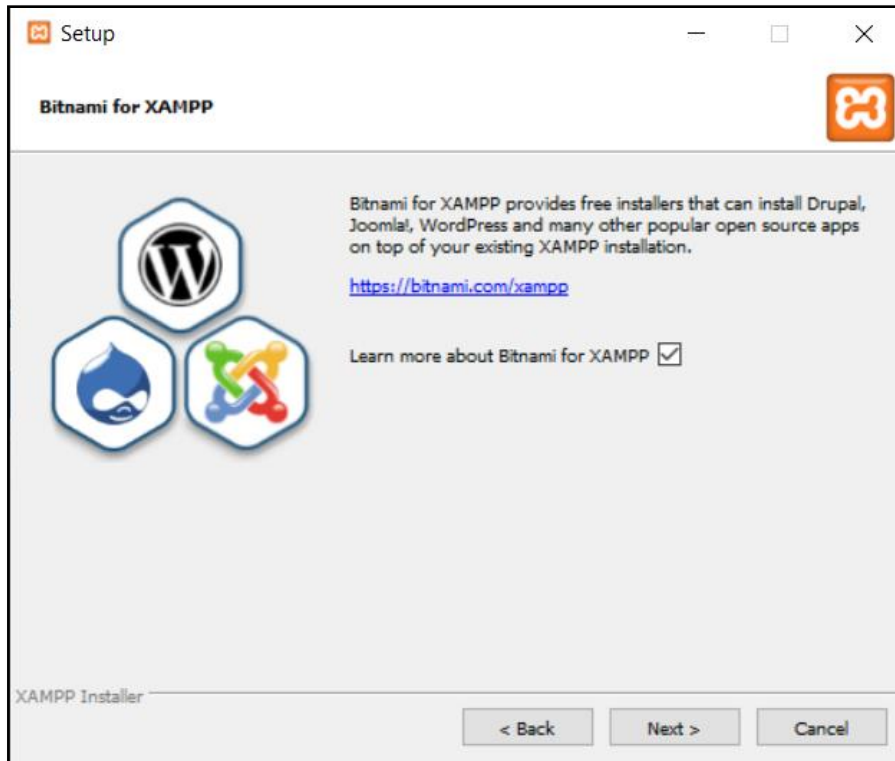


In this next step, you have the chance to choose where you'd like the XAMPP software packet to be installed. If you opt for the standard setup, then a folder with the name XAMPP will be created under C:\ for you. After you've chosen a location, click 'Next'.



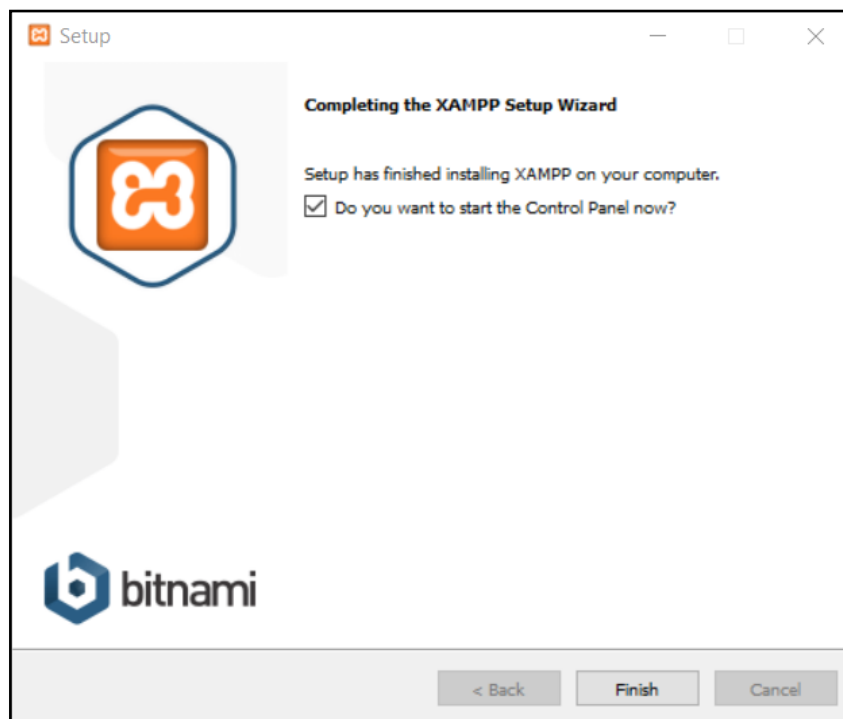
Once all the aforementioned preferences have been decided, click to start the installation. The setup wizard will unpack and install the selected components and save them to the designated directory. This process can take several minutes in total. You can follow the progress of this installation by keeping an eye on the green loading bar in the middle of the screen





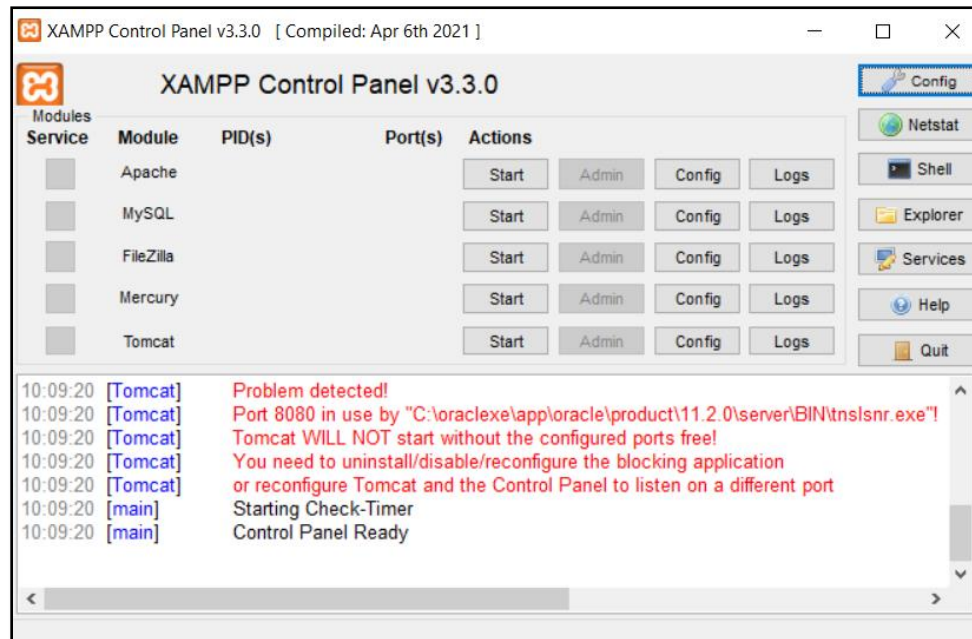


Once all the components are unpacked and installed, you can close the setup wizard by clicking on 'Finish'. Click to tick the corresponding check box and open the XAMPP Control Panel once the installation process is finished.



## 2. Locate and study its configuration file.

Start the XAMPP control panel through the "Run as administrator" option. "XAMPP Control Panel" will appear on the screen and click on "Start" action to start the "Apache" and "MySQL" modules.

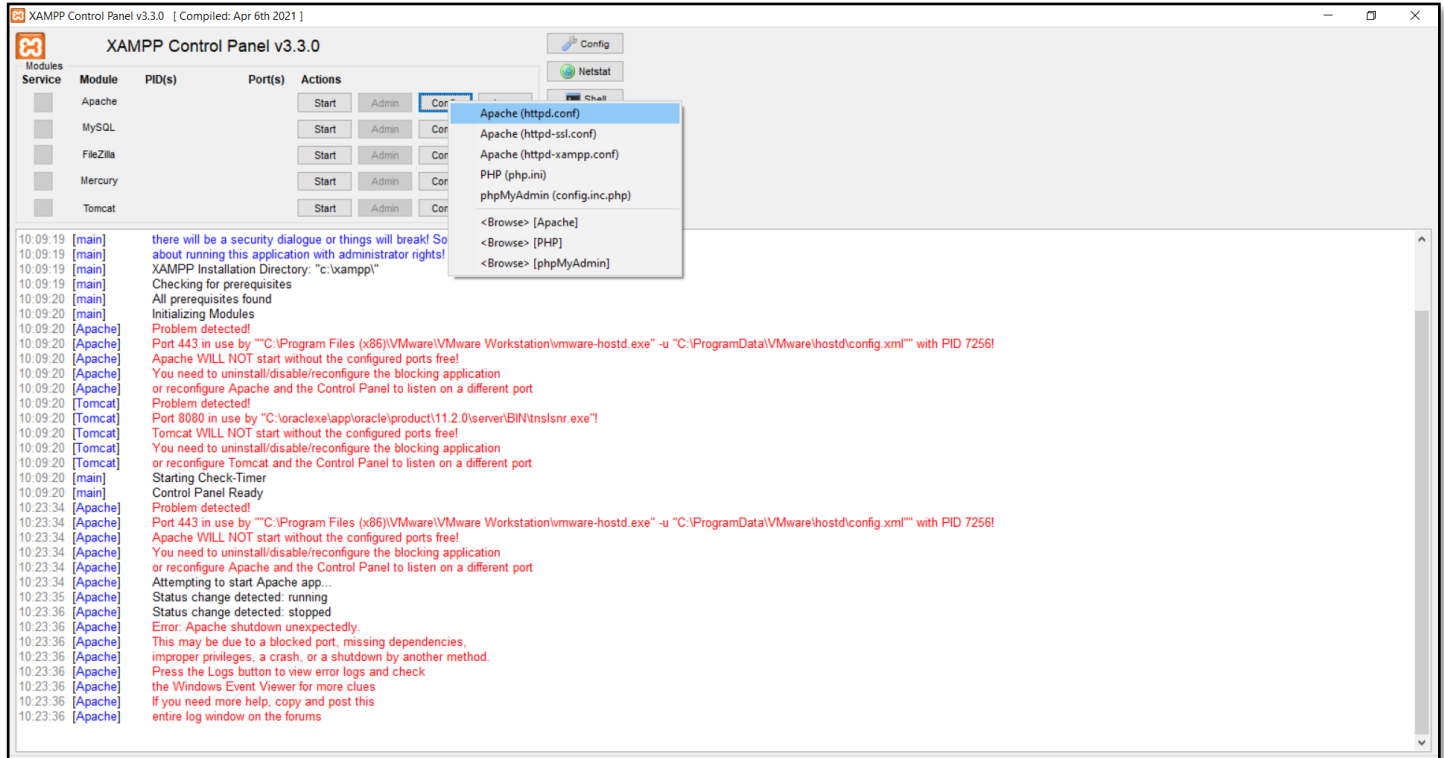


The XAMPP Control Panel also offers you various other buttons, including:

- **Config:** allows you to configure the XAMPP as well as the individual components
- **Netstat:** shows all running processes on the local computer
- **Shell:** opens a UNIX shell
- **Explorer:** opens the XAMPP folder in Windows Explorer
- **Services:** shows all services currently running in the background
- **Help:** offers links to user forums
- **Quit:** closes the XAMPP Control Panel

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.

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.





```

*httpd.conf - Notepad
File Edit Format View Help
# ServerRoot: The top of the directory tree under which the server's
# configuration, error, and log files are kept.
#
# 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 12.34.56.78:8080
Listen 8080

#
# Dynamic Shared Object (DSO) Support
#
# To be able to use the functionality of a module which was built as a DSO you
# have to place corresponding 'LoadModule' lines at this location so the
# directives contained in it are actually available _before_ they are used.
# Statically compiled modules (those listed by 'httpd -l') do not need
# to be loaded here.
<

```

```

*httpd.conf - Notepad
File Edit Format View Help
#
User daemon
Group daemon

</IfModule>

# 'Main' server configuration
#
# The directives in this section set up the values used by the 'main'
# server, which responds to any requests that aren't handled by a
# <VirtualHost> definition. These values also provide defaults for
# any <VirtualHost> containers you may define later in the file.
#
# All of these directives may appear inside <VirtualHost> containers,
# in which case these default settings will be overridden for the
# virtual host being defined.
#
#
# 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:8080

#
# 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
<

```

XAMPP Control Panel v3.3.0 [Compiled: Apr 6th 2021]

**XAMPP Control Panel v3.3.0**

Service	Module	PID(s)	Port(s)	Actions
Apache				Start Admin <b>Config</b> Logs Shell
MySQL				Start Admin C
FileZilla				Start Admin C
Mercury				Start Admin C
Tomcat				Start Admin C

Log output:

```

10:09:19 [main] there will be a security dialogue or things will break! S
10:09:19 [main] about running this application with administrator rights
10:09:19 [main] XAMPP Installation Directory: "c:\xampp\"
10:09:19 [main] Checking for prerequisites
10:09:20 [main] All prerequisites found
10:09:20 [main] Initializing Modules
10:09:20 [Apache] Problem detected!
10:09:20 [Apache] Port 443 in use by ""C:\Program Files (x86)\VMware\VMware Workstation\vmware-hostd.exe" -u "C:\ProgramData\VMware\hostd\config.xml"" with PID 7256!
10:09:20 [Apache] Apache WILL NOT start without the configured ports free!
10:09:20 [Apache] You need to uninstall/disable/reconfigure the blocking application
10:09:20 [Apache] or reconfigure Apache and the Control Panel to listen on a different port
10:09:20 [Tomcat] Problem detected!
10:09:20 [Tomcat] Port 8080 in use by "C:\oracle\app\oracle\product\11.2.0\server\BIN\tnslsnr.exe"
10:09:20 [Tomcat] Tomcat WILL NOT start without the configured ports free!
10:09:20 [Tomcat] You need to uninstall/disable/reconfigure the blocking application
10:09:20 [Tomcat] or reconfigure Tomcat and the Control Panel to listen on a different port
10:09:20 [main] Starting Check-Timer
10:09:20 [main] Control Panel Ready
10:23:34 [Apache] Problem detected!
10:23:34 [Apache] Port 443 in use by ""C:\Program Files (x86)\VMware\VMware Workstation\vmware-hostd.exe" -u "C:\ProgramData\VMware\hostd\config.xml"" with PID 7256!
10:23:34 [Apache] Apache WILL NOT start without the configured ports free!
10:23:34 [Apache] You need to uninstall/disable/reconfigure the blocking application
10:23:34 [Apache] or reconfigure Apache and the Control Panel to listen on a different port
10:23:34 [Apache] Attempting to start Apache app...
10:23:35 [Apache] Status change detected: running
10:23:36 [Apache] Status change detected: stopped
10:23:36 [Apache] Error: Apache shutdown unexpectedly.
10:23:36 [Apache] This may be due to a blocked port, missing dependencies,
10:23:36 [Apache] improper privileges, a crash, or a shutdown by another method.
10:23:36 [Apache] Press the Logs button to view error logs and check
10:23:36 [Apache] the Windows Event Viewer for more clues
10:23:36 [Apache] If you need more help, copy and post this
10:23:36 [Apache] entire log window on the forums

```

Context menu options for Apache:

- Apache (httpd.conf)
- Apache (httpd-ssl.conf)
- Apache (httpd-xampp.conf)
- PHP (php.ini)
- phpMyAdmin (config.inc.php)
- <Browse> [Apache]
- <Browse> [PHP]
- <Browse> [phpMyAdmin]

\*httpd-ssl.conf - Notepad

File Edit Format View Help

```

#
# This is the Apache server configuration file providing SSL support.
# It contains the configuration directives to instruct the server how to
# serve pages over an https connection. For detailed information about these
# directives see <URL:http://httpd.apache.org/docs/2.4/mod/mod_ssl.html>
#
# Do NOT simply read the instructions in here without understanding
# what they do. They're here only as hints or reminders. If you are unsure
# consult the online docs. You have been warned.
#
# Required modules: mod_log_config, mod_setenvif, mod_ssl,
#                  socache_shmcb_module (for default value of SSLSessionCache)
#
# Pseudo Random Number Generator (PRNG):
# Configure one or more sources to seed the PRNG of the SSL library.
# The seed data should be of good random quality.
# WARNING! On some platforms /dev/random blocks if not enough entropy
# is available. This means you then cannot use the /dev/random device
# because it would lead to very long connection times (as long as
# it requires to make more entropy available). But usually those
# platforms additionally provide a /dev/urandom device which doesn't
# block. So, if available, use this one instead. Read the mod_ssl User
# Manual for more details.
#
#SSLRandomSeed startup file:/dev/random 512
#SSLRandomSeed startup file:/dev/urandom 512
#SSLRandomSeed connect file:/dev/random 512
#SSLRandomSeed connect file:/dev/urandom 512
#
# When we also provide SSL we have to listen to the
# standard HTTP port (see above) and to the HTTPS port
#
Listen 1443
#
##
## SSL Global Context
##
## All SSL configuration in this context applies both to
## the main server and all SSL-enabled virtual hosts.

```

\*httpd-ssl.conf - Notepad  
File Edit Format View Help

```
# OCSP Stapling (requires OpenSSL 0.9.8h or later)
#
# This feature is disabled by default and requires at least
# the two directives SSLUseStapling and SSLStaplingCache.
# Refer to the documentation on OCSP Stapling in the SSL/TLS
# How-To for more information.
#
# Enable stapling for all SSL-enabled servers:
SSLUseStapling On

# Define a relatively small cache for OCSP Stapling using
# the same mechanism that is used for the SSL session cache
# above. If stapling is used with more than a few certificates,
# the size may need to be increased. (AH01929 will be logged.)
SSLStaplingCache "shmcb:${SRVROOT}/logs/ssl_stapling(32768)"

# Seconds before valid OCSP responses are expired from the cache
SSLStaplingStandardCacheTimeout 3600

# Seconds before invalid OCSP responses are expired from the cache
SSLStaplingErrorCacheTimeout 600

##
## SSL Virtual Host Context
##
```

```
<VirtualHost _default_:1443>

# General setup for the virtual host
DocumentRoot "C:/xampp/htdocs"
ServerName www.example.com:443
ServerAdmin admin@example.com
ErrorLog "C:/xampp/apache/logs/error.log"
TransferLog "C:/xampp/apache/logs/access.log"
```

XAMPP Control Panel v3.2.4 [ Compiled: Jun 5th 2019 ]

**XAMPP Control Panel v3.2.4**

Service	Module	PID(s)	Port(s)	Actions
Apache	3272 2948	80, 443	Stop Admin Config Logs	
MySQL	11128	3306	Stop Admin Config Logs	
FileZilla			Start Admin Config Logs	
Mercury			Start Admin Config Logs	
Tomcat			Start Admin Config Logs	

Config Netstat Shell Explorer Services Help Quit

```
12:32:16 [main] Initializing Control Panel
12:32:16 [main] Windows Version: Pro SP1 64-bit
12:32:16 [main] XAMPP Version: 7.2.31
12:32:16 [main] Control Panel Version: 3.2.4 [ Compiled: Jun 5th 2019 ]
12:32:16 [main] You are not running with administrator rights! This will work for
12:32:16 [main] most application stuff but whenever you do something with services
12:32:16 [main] there will be a security dialogue or things will break! So think
12:32:16 [main] about running this application with administrator rights!
12:32:16 [main] XAMPP Installation Directory: "e:\xampp\"
12:32:16 [main] Checking for prerequisites
12:32:16 [main] All prerequisites found
12:32:16 [main] Initializing Modules
12:32:16 [Tomcat] Problem detected!
12:32:16 [Tomcat] Port 8080 in use by "C:\oracle\app\oracle\product\11.2.0\server\BIN\tnslsnr.exe"
12:32:16 [Tomcat] Tomcat WILL NOT start without the configured ports free!
12:32:16 [Tomcat] You need to uninstall/disable/reconfigure the blocking application
12:32:16 [Tomcat] or reconfigure Tomcat and the Control Panel to listen on a different port
12:32:16 [main] Starting Check-Timer
12:32:16 [main] Control Panel Ready
12:37:03 [Apache] Attempting to start Apache app...
12:37:04 [Apache] Status change detected: running
12:37:04 [mysql] Attempting to start MySQL app...
12:37:05 [mysql] Status change detected: running
```