

# Configure Apache2 for PHP, cgi-bin, Virtual Hosts on Linux System

#For Linux System

## 1. Install Apache2

#1.1 - 1.5 steps are for earlier installed apache2 package which may be partially installed which may cause problems

1.1 apt list --installed check all packages related to apache2 and php

1.2 sudo apt-get purge all\_apache\_packages to remove all apache2 packages

1.3 sudo apt-get autoremove to remove dependencies installed with apache2 packages

1.4 whereis apache2 to see all directories related to apache2

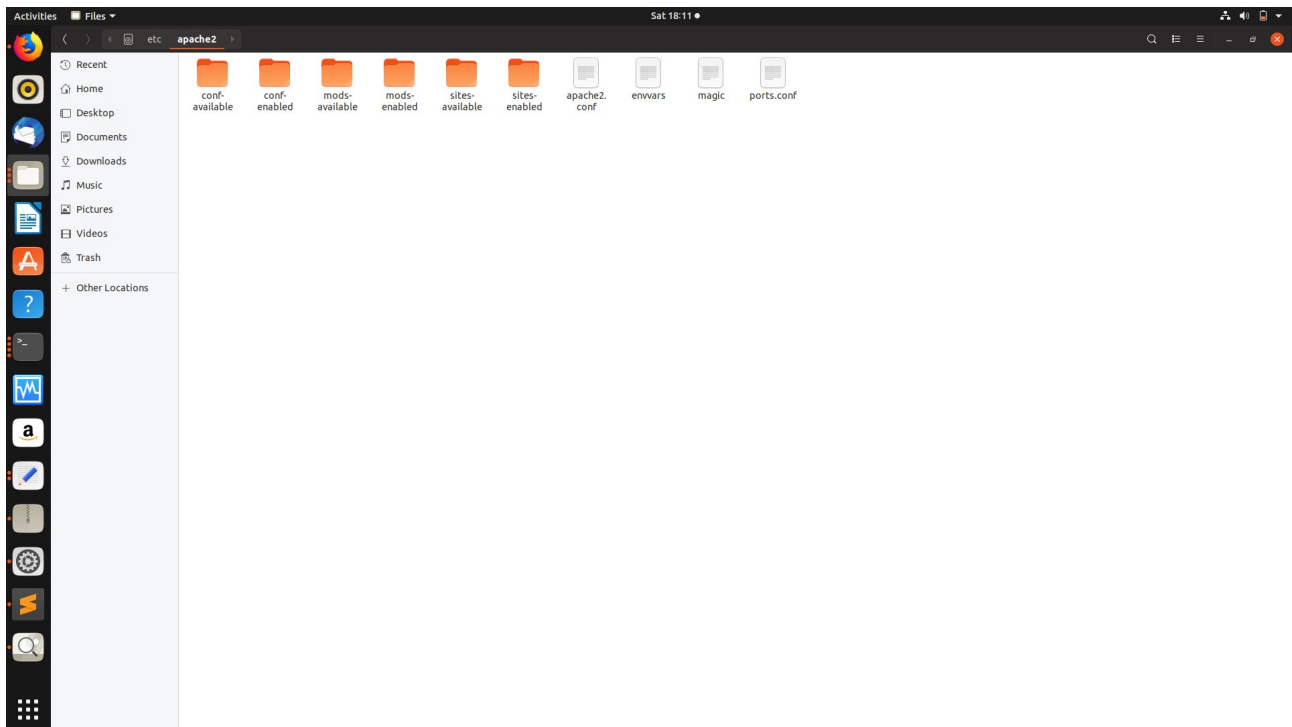
1.5 sudo rm -rf all\_directories\_of\_apache2 to delete those directories

1.6 sudo apt-get update to update

1.7 sudo apt-get install apache2 to install apache2

1.8 systemctl start apache2 to start service of apache2

1.9 systemctl status apache2 to check status of apache2 service



## 2. Configure with PHP

2.1 sudo apt-get purge all\_php\_packages to remove all php packages as given in list --installed

2.2 sudo apt-get autoremove to remove dependencies

2.3 whereis php to see all directories related to php

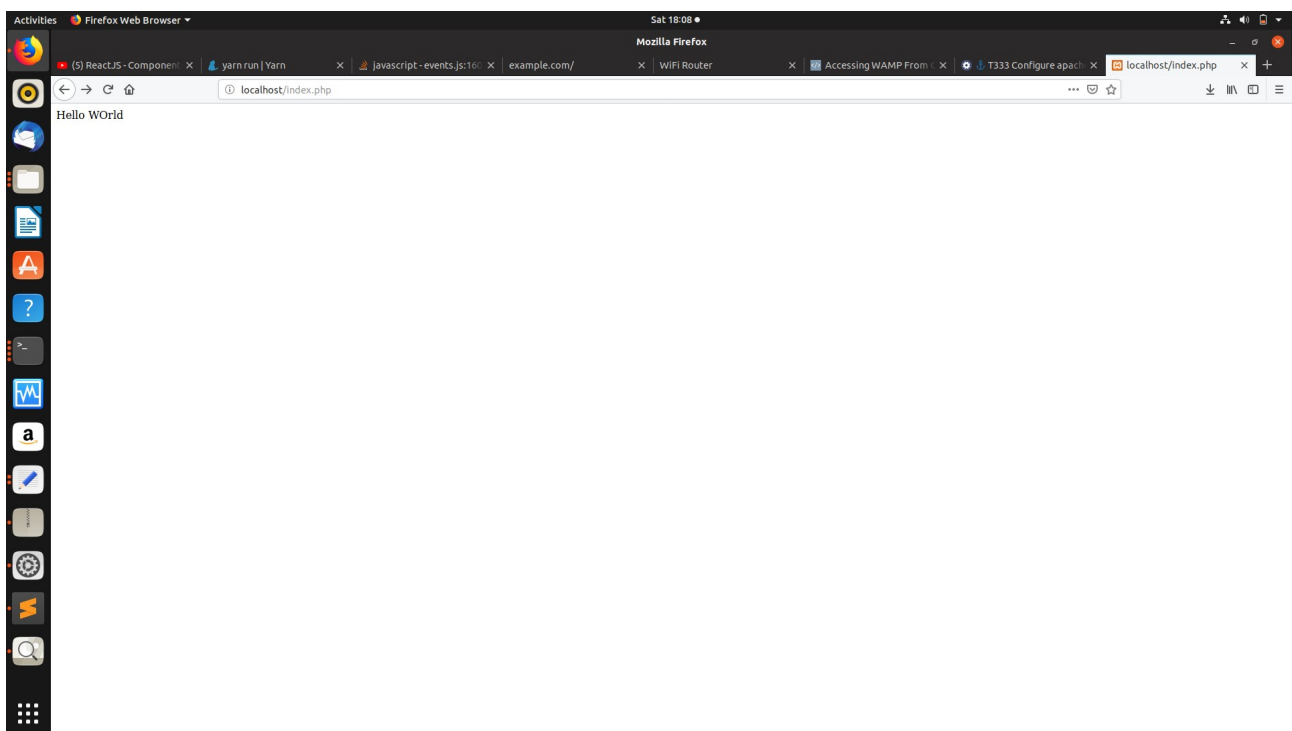
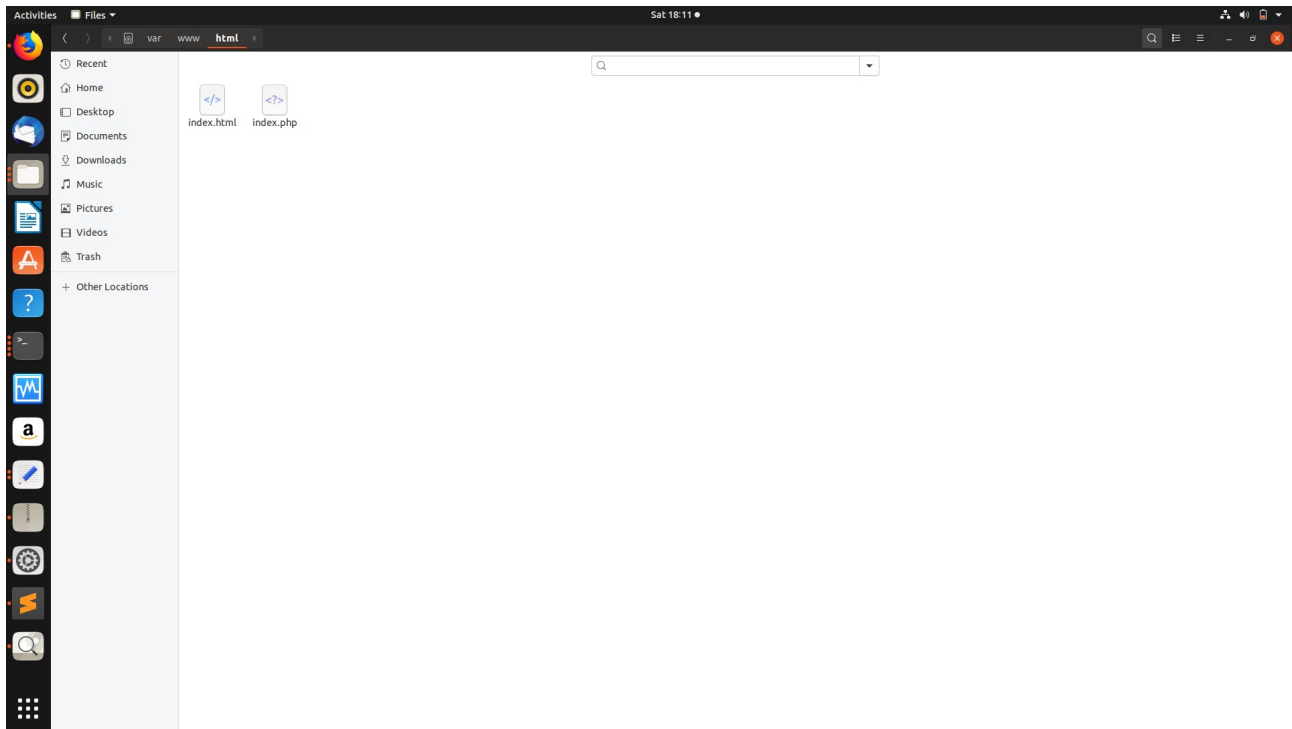
2.4 sudo rm -rf all\_directories\_of\_php to delete those directories

2.5 sudo apt-get update to update

2.6 sudo apt-get install php to automatically install all packages related to php (php-common, php7.3-cli, php7.3-common, php7.3-fpm, php7.3-json, php7.3-opcache, php7.3-readline, php7.3) may be necessary or not

2.7 go to /var/www/html and put/create your php page here (eg. index.php)

2.8 go to browser add url -> localhost/index.php (or 127.0.0.1/index.php or ip\_address/index.php)



### 3 Configure with cgi-bin

3.1 check if present -> /etc/apache2/conf-available/serve-cgi-bin.conf and symbolic link from /etc/apache2/conf-enabled/serve-cgi-bin.conf

3.2 open /etc/apache2/conf-available/serve-cgi-bin.conf and check if below code is present

```
<IfModule mod_alias.c>
    <IfModule mod_cgi.c>
        Define ENABLE_USR_LIB_CGI_BIN
    </IfModule>

    <IfModule mod_cgid.c>
```

```

        Define ENABLE_USR_LIB_CGI_BIN
    </IfModule>

    <IfDefine ENABLE_USR_LIB_CGI_BIN>
        ScriptAlias /cgi-bin/ /usr/lib/cgi-bin/
        <Directory "/usr/lib/cgi-bin">
            AllowOverride None
            Options +ExecCGI -MultiViews +SymLinksIfOwnerMatch
            Require all granted
        </Directory>
    </IfDefine>
</IfModule>

```

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet

3.3 check if present -> /etc/apache2/mods-available/serve-cgi-bin.conf

3.4 according to observation symbolic link at /etc/apache2/mods-enabled/serve-cgi-bin.conf is not present so

cd /etc/apache2/mods-enabled

sudo ln -s ../mods-available/cgi.load to add symbolic link

3.5 systemctl reload apache2

3.6 go to /usr/lib/cgi-bin and create a script (sh or pl)(eg.index.sh)

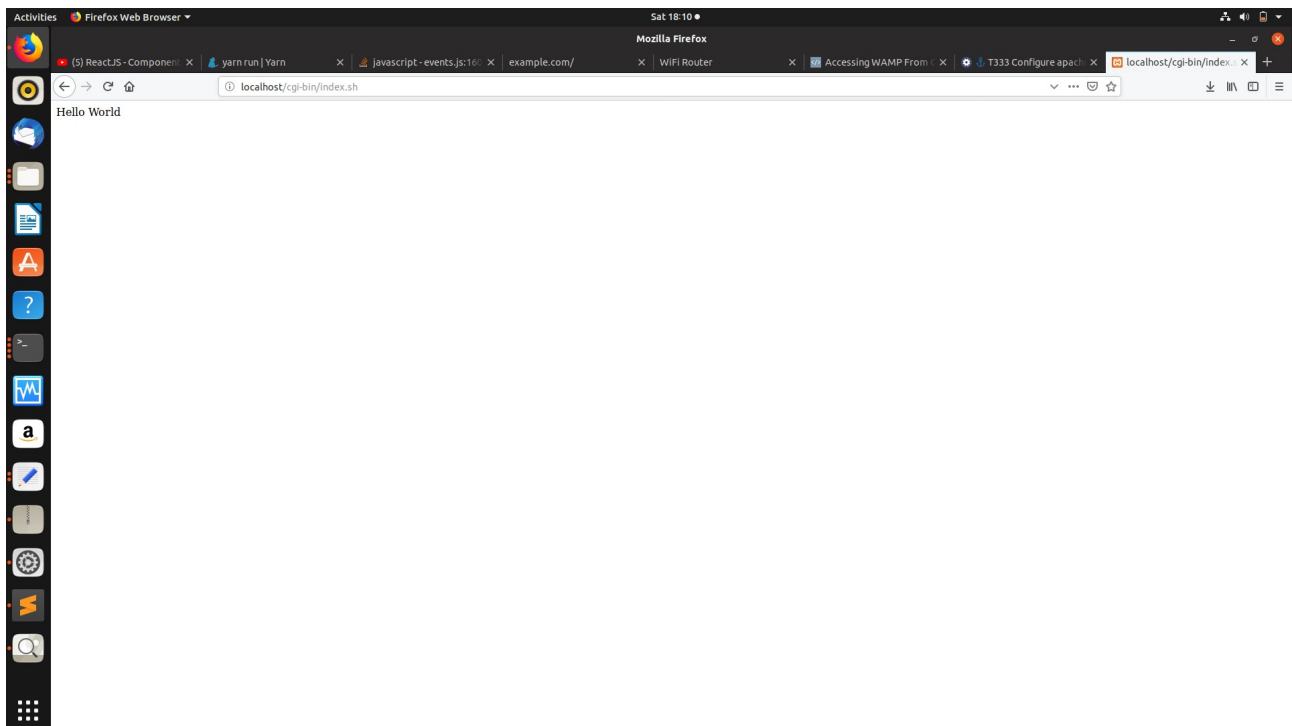
```

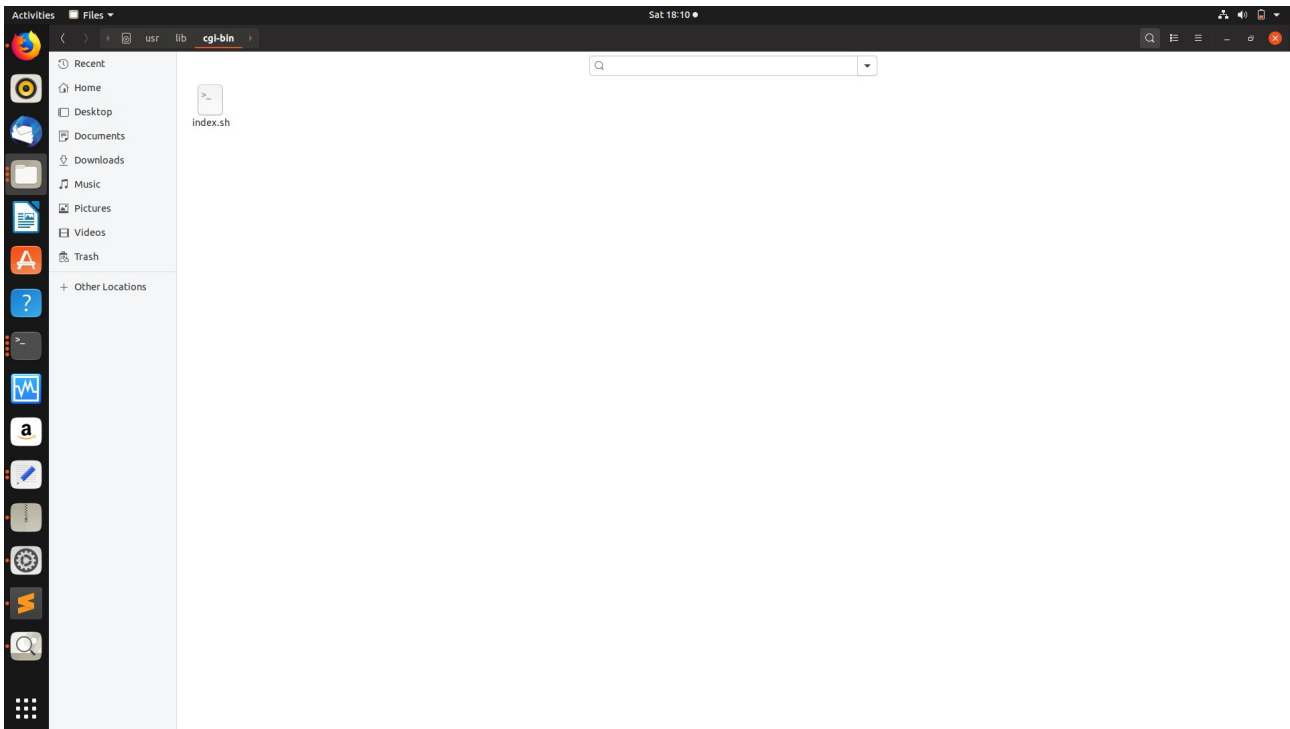
#!/bin/bash
printf "Content-type: text/html\n\n"#compulsary inorder to tell script type also
can use html tags in echo or printf
printf "Hello World\n"

```

3.7 chmod +x /usr/lib/cgi-bin/index.sh to change executable permission

3.8 go to browser localhost/cgi-bin/index.sh





#### 4. Configure with Virtual Host

4.1 `cd /var/www`

4.2 `sudo mkdir -p example.com/public_html test.com/public_html` -> create public\_html dir with parent directories example.com as well as test.com

4.3 `sudo chown -R $USER:$USER example.com/public_html test.com/public_html` -> to change ownership to logged in user

4.4 `sudo chmod -R 755 /var/www` -> to give writable permission to User only

4.5 `gedit example.com/public_html/index.html` and write basic html program -

```
<html>
<body>
<h1>example</h1>
</body>
</html>
```

4.6 `cp example.com/public_html/index.html test.com/public_html/index.html` make some changes to recognize uniquely

```
<html>
<body>
<h1>test</h1>
</body>
</html>
```

[Note1 - If you want to change name of html file from index.html to some abc.html then see in Note2  
]

4.7 go to `/etc/apache2/sites-available`

4.8 `sudo cp 000-default.conf example.com.conf`. Open example.com.conf and make following changes

```
<VirtualHost *:80>
```

```

        ServerAdmin admin@example.com # email where updates will be sent
        ServerName example.com # name of domain
        ServerAlias www.example.com # some other name expected to be used as
domain name
        DocumentRoot /var/www/example.com/public_html # the path where file will
be located
        ErrorLog ${APACHE_LOG_DIR}/error.log # Error logs
        CustomLog ${APACHE_LOG_DIR}/access.log combined # Custome logs
</VirtualHost>

```

4.9 sudo cp example.com.conf test.com.conf. Open test.com.conf and make following changes

```

<VirtualHost *:80>
    ServerAdmin admin@test.com # email where updates will be sent
    ServerName test.com # name of domain
    ServerAlias www.test.com # some other name expected to be used as domain
name
    DocumentRoot /var/www/test.com/public_html # the path where file will be
located
    ErrorLog ${APACHE_LOG_DIR}/error.log # Error logs
    CustomLog ${APACHE_LOG_DIR}/access.log combined # Custome logs
</VirtualHost>

```

4.10 sudo a2ensite example.com.conf test.com.conf -> to enable example.com.conf and test.com.conf and add them to sites-enabled which is IncludedOptional in apache2.conf

4.11 systemctl reload apache2

4.12 You can also disable default config file 000-default.conf by  
sudo a2dissite 000-default.conf

4.13 systemctl reload apache2

4.14 go to /etc/hosts file and add domain name and ip of the machine you are working on (may be static or dynamic)

```

127.0.0.1      localhost
127.0.1.1      piyush-HP-Laptop-15-bs0xx
192.168.0.5    example.com
192.168.0.5    test.com

```

```

# The following lines are desirable for IPv6 capable hosts
::1           ip6-localhost ip6-loopback
fe00::0       ip6-localnet
ff00::0       ip6-mcastprefix
ff02::1       ip6-allnodes
ff02::2       ip6-allrouters

```

4.15 set ip to 192.168.0.5 or put your ip instead and open browser and just put domain name(eg. example.com or test.com)

[Note2 -

1. go to /etc/apache2/mods-available/dir.conf
2. write name of file abc.html in the list of default files given i.e. infront of DirectoryIndex
  - OR -----
3. go to conf file if example.com dir then example.com.conf
4. add new field in <VirtualHost \*:80> DirectoryIndex abc.html
5. if necessary a2ensite example.com.conf and further reload apache2

]

