Linux Based Apache Server Hosting Guide
(MERN Stack)

If hosting server is running on Domain with SSL
- ❖ To serve React Client build on hosting server on domain.
  - o Example: https://theupvote.com/

Step 1:
- ➢ Ensure Required Modules are enabled.
- ➢ You need to have proxy and proxy_http modules enabled.
- ➢ Run the following commands to enable them.
  Ex:
  sudo a2enmod proxy
  sudo a2enmod proxy_http
  sudo systemctl restart apache2

  sudo a2enmod rewrite (Enable this for solving React Routing Issue)

Step 2:
- ➢ Set Up a Virtual Host for React.
- ➢ Create a virtual host configuration for your React app.
- ➢ Create a file named react-app.conf in /etc/apache2/sites-available/

  sudo nano /etc/apache2/sites-available/react-app.conf
  Ex:
  <IfModule mod_ssl.c>
       <VirtualHost *:443>
         ServerAdmin webmaster@localhost
        DocumentRoot /var/www/html/client

        ErrorLog ${APACHE_LOG_DIR}/client_error.log
        CustomLog ${APACHE_LOG_DIR}/client_access.log combined

        ServerName theupvote.com
        SSLCertificateFile /etc/letsencrypt/live/theupvote.com/fullchain.pem
        SSLCertificateKeyFile/etc/letsencrypt/live/theupvote.com/privkey.pem
        Include /etc/letsencrypt/options-ssl-apache.conf

        <Directory /var/www/html/client >
           Options Indexes FollowSymLinks
           AllowOverride All
           Require all granted
        </Directory>

```
        </VirtualHost>
    </IfModule>
```

Step 3:
➤ Enable the New Virtual Host.
    Ex:
    sudo a2ensite react-app.conf
    sudo systemctl reload apache2

Step 4:
➤ Restart Apache
    Ex:
    sudo systemctl restart apache2

Step 5:
➤ Upload your build files to /var/www/html/client folder and create .htaccess file in the client folder.
➤ Write the below configuration in .htaccess file.
    Ex:
```
<IfModule mod_rewrite.c>
        RewriteEngine On
        RewriteBase /

        RewriteRule ^index\.html$ - [L]
        RewriteCond %{REQUEST_FILENAME} !-f
        RewriteCond %{REQUEST_FILENAME} !-d
        RewriteRule ^ /index.html [L]
</IfModule>
```

Step 5: OR
➤ Add a fallback resource line in Virtual Host configuration file like below.
    Ex:
    FallbackResource /index.html

❖ To serve Admin build on hosting server on domain.
    o Example: https://admin.theupvote.com/

Step 1:
➤ Ensure Required Modules are enabled.
➤ You need to have proxy and proxy_http modules enabled.
➤ Run the following commands to enable them.
    Ex:
    sudo a2enmod proxy
    sudo a2enmod proxy_http

```
sudo systemctl restart apache2
```

Step 2:
- ➢ Set Up a Virtual Host for React Admin.
- ➢ Create a virtual host configuration for your React Admin app.
- ➢ Create a file named admin.theupvote.com.conf in /etc/apache2/sites-available/

```
sudo nano /etc/apache2/sites-available/admin.theupvote.com.conf
```
Ex:
```
<IfModule mod_ssl.c>
   <VirtualHost *:443>
      ServerAdmin webmaster@localhost
      DocumentRoot /var/www/html/admin

      ErrorLog ${APACHE_LOG_DIR}/admin_error.log
      CustomLog ${APACHE_LOG_DIR}/admin_access.log combined

      ServerName admin.theupvote.com
      SSLCertificateFile /etc/letsencrypt/live/admin.theupvote.com/fullchain.pem
      SSLCertificateKeyFile/etc/letsencrypt/live/admin.theupvote.com/privkey.pem
      Include /etc/letsencrypt/options-ssl-apache.conf

      <Directory /var/www/html/admin>
         Options Indexes FollowSymLinks
         AllowOverride All
         Require all granted
      </Directory>
   </VirtualHost>
</IfModule>
```

Step 3:
- ➢ Enable the New Virtual Host.
  Ex:
```
sudo a2ensite admin.theupvote.com.conf
sudo systemctl reload apache2
```

Step 4:
- ➢ Restart Apache
  Ex:
```
sudo systemctl restart apache2
```

Step 5:
- ➤ Upload your build files to /var/www/html/admin folder and create .htaccess file in the admin folder.
- ➤ Write the below configuration in .htaccess file.
  Ex:
  <IfModule mod_rewrite.c>
        RewriteEngine On
        RewriteBase /

        RewriteRule ^index\.html$ - [L]
        RewriteCond %{REQUEST_FILENAME} !-f
        RewriteCond %{REQUEST_FILENAME} !-d
        RewriteRule ^ /index.html [L]
  </IfModule>

Step 5: OR
- ➤ Add a fallback resource line in Virtual Host configuration file like below.
  Ex:
  FallbackResource /index.html

- ❖ To Host Node backend server code on Linux based Apache Server using pm2 with SSL
  Step 1:
  - ➤ Ensure Required Modules are enabled.
  - ➤ You need to have proxy and proxy_http modules enabled.
  - ➤ Run the following commands to enable them.
    Ex:
    sudo a2enmod proxy
    sudo a2enmod proxy_http
    sudo systemctl restart apache2

  Step 2:
  - ➤ Set Up a Virtual Host for Server.
  - ➤ Create a virtual host configuration for your Server.
  - ➤ Create a file named server.theupvote.com.conf in /etc/apache2/sites-available/

    sudo nano /etc/apache2/sites-available/server.theupvote.com.conf
    Ex:
    <VirtualHost *:80>
       ServerName server.theupvote.com
       ProxyPreserveHost On

       ErrorLog ${APACHE_LOG_DIR}/server_error.log

```
        CustomLog ${APACHE_LOG_DIR}/server_access.log combined

        RewriteEngine on
        RewriteCond %{SERVER_NAME} =server.theupvote.com
        RewriteRule ^
https://%{SERVER_NAME}%{REQUEST_URI}[END,NE,R=permanent]
</VirtualHost>

<IfModule mod_ssl.c>
    <VirtualHost *:443>
        ServerName server.theupvote.com

        ProxyPreserveHost On
        ProxyPass / http://localhost:8080/
        ProxyPassReverse / http://localhost:8080/


        ErrorLog ${APACHE_LOG_DIR}/server_ssl_error.log
        CustomLog ${APACHE_LOG_DIR}/server_ssl_access.log combined

        SSLCertificateFile /etc/letsencrypt/live/server.theupvote.com/fullchain.pem
        SSLCertificateKeyFile/etc/letsencrypt/live/server.theupvote.com/privkey.pem
        Include /etc/letsencrypt/options-ssl-apache.conf

    </VirtualHost>
</IfModule>
```

Step 4:
- ➢ Set Up a Virtual Host for Server for specifying port.
- ➢ Create a virtual host configuration for your Server.
- ➢ Create a file named server.theupvote.com.8080.conf in /etc/apache2/sites-available/

```
sudo nano /etc/apache2/sites-available/server.theupvote.com.8080.conf
```
Ex:
```
<VirtualHost *:8080>
    ServerName server.theupvote.com
    DocumentRoot /var/www/html/server

    <Directory /var/www/html/server>
        Options Indexes FollowSymLinks
        AllowOverride All
        Require all granted
```

```
    </Directory>

    ErrorLog ${APACHE_LOG_DIR}/server_8080_error.log
    CustomLog ${APACHE_LOG_DIR}/server_8080_access.log combined
</VirtualHost>
```

Step 5:
- ➤ Enable the New Virtual Host.
    Ex:
    sudo a2ensite server.theupvote.com.8080.conf
    sudo systemctl reload apache2

Step 6:
- ➤ Restart Apache
    Ex:
    sudo systemctl restart apache2

Step 7:
- ➤ Upload all your backend code of files on /var/www/html/server folder

Step 8:
- ➤ Install pm2 globally on server
    Ex:
    npm i pm2 –g

Step 9:
- ➤ Start main file i.e index.js or app.js with specific pm2 service name and port
    Ex:
    pm2 start index.js or app.js --name "server_name" --env PORT=8080