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

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>

❖ 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>
```

❖ 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