

Apache HTTP Server – Domain Setup and Free SSL Configuration

[Let's Encrypt](#)

Let's Encrypt is a free, automated, and open Certificate Authority brought to you by the nonprofit [Internet Security Research Group \(ISRG\)](#). Read all about our nonprofit work this year in our [2025 Annual Report](#).

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Domain Creation from <https://www.bigrock.in>

Apache HTTP Server – Domain Setup and Free SSL Configuration

1. Create Domain Directory

Create a directory inside the Apache htdocs directory. The directory name should be the domain name.

```
mkdir -p /opt/apache_2.4.68/htdocs/venkatsamrat1.info
```

Directory path:

```
/opt/apache_2.4.68/htdocs/venkatsamrat1.info
```

Inside this directory, create the website's index.html page.

```
/opt/apache_2.4.68/htdocs/venkatsamrat1.info/index.html
```

2. Verify DNS Resolution

Run:

```
dig +short venkatsamrat1.info
```

Expected output:

```
3.7.87.133
```

This confirms that the domain is resolving to the server's public IP address.

3. Install Certbot

Install Certbot using dnf:

```
dnf install -y certbot
```

Verify the installation:

```
certbot --version
```

Expected output:

```
certbot 2.6.0
```

4. Generate SSL Certificate Using Certbot

Run Certbot with the Apache webroot:

```
certbot certonly --webroot -w /opt/apache_2.4.68/htdocs/venkatsamrat1.info -d venkatsamrat1.info
```

During the process:

- Enter your email ID when prompted.
- Accept the Terms of Service by entering **Y**
- Choose the required option when asked about email/newsletter communications (Y or N) **N**

After successful completion, the SSL certificates will be available under:

```
/etc/letsencrypt/live/venkatsamrat1.info/
```

Apache HTTP Server – Domain Setup and Free SSL Configuration

5. Enable SSL Modules in httpd.conf / add Listen port “443” / update DocumentRoot

Open the Apache configuration file:

/opt/apache_2.4.68/conf/httpd.conf

Enable the following modules:

LoadModule socache_shmcb_module modules/mod_socache_shmcb.so

LoadModule ssl_module modules/mod_ssl.so

Listen Port

```
#Listen 12.34.56.78:80
Listen 80
Listen 443
```

DocumentRoot

```
DocumentRoot "/opt/apache_2.4.68/htdocs/venkatsamrat1.info"
<Directory "/opt/apache_2.4.68/htdocs">
```

6. Configure SSL Virtual Host

Add the following SSL VirtualHost configuration to httpd.conf:

```
<VirtualHost *:443>

    ServerName venkatsamrat1.info
    ServerAlias www.venkatsamrat1.info

    DocumentRoot "/opt/apache_2.4.68/htdocs/venkatsamrat1.info"

    <Directory "/opt/apache_2.4.68/htdocs/venkatsamrat1.info">
        Options Indexes FollowSymLinks
        AllowOverride All
        Require all granted
    </Directory>

    SSLEngine on

    SSLCertificateFile "/etc/letsencrypt/live/venkatsamrat1.info/fullchain.pem"
    SSLCertificateKeyFile "/etc/letsencrypt/live/venkatsamrat1.info/privkey.pem"

    ErrorLog "/opt/apache_2.4.68/logs/venkatsamrat1.info-ssl-error.log"
    CustomLog "/opt/apache_2.4.68/logs/venkatsamrat1.info-ssl-access.log" combined

</VirtualHost>
```

Apache HTTP Server – Domain Setup and Free SSL Configuration

7. Configure HTTP Virtual Host

Add the following HTTP VirtualHost configuration:

```
<VirtualHost *:80>

    ServerName venkatsamrat1.info
    ServerAlias www.venkatsamrat1.info

    DocumentRoot "/opt/apache_2.4.68/htdocs/venkatsamrat1.info"

    <Directory "/opt/apache_2.4.68/htdocs/venkatsamrat1.info">
        Options Indexes FollowSymLinks
        AllowOverride All
        Require all granted
    </Directory>

    ErrorLog "/opt/apache_2.4.68/logs/venkatsamrat1.info-error.log"
    CustomLog "/opt/apache_2.4.68/logs/venkatsamrat1.info-access.log" combined

</VirtualHost>
```

8. Enable HTTP and HTTPS Listen Ports

In httpd.conf, make sure the following ports are enabled:

Listen 80

Listen 443

Note: The correct directive is Listen 443, not Lsisten 443.

9. SSL Certificate Files

Certbot creates the following certificate-related files:

cert.pem

chain.pem

fullchain.pem

privkey.pem

They are located under:

/etc/letsencrypt/live/venkatsamrat1.info/

Important Files Used by Apache

Certificate:

/etc/letsencrypt/live/venkatsamrat1.info/fullchain.pem

Private key:

/etc/letsencrypt/live/venkatsamrat1.info/privkey.pem

Apache uses these two files in the SSL VirtualHost configuration.

Apache HTTP Server – Domain Setup and Free SSL Configuration

10. Final Configuration Flow

Domain

|

v

venkatsamrat1.info

|

v

DNS Resolution

|

v

13.204.119.46

|

v

Apache HTTP Server

|

+---- Port 80 ----> HTTP VirtualHost

|

+---- Port 443 ----> HTTPS VirtualHost

|

v

Let's Encrypt SSL

|

v

/etc/letsencrypt/live/

|

v

fullchain.pem + privkey.pem

Apache HTTP Server – Domain Setup and Free SSL Configuration

11. Final Verification

Check Apache configuration syntax:

```
/opt/apache_2.4.68/bin/apachectl -t
```

Expected:

Syntax OK

Then restart Apache:

```
/opt/apache_2.4.68/bin/apachectl restart
```

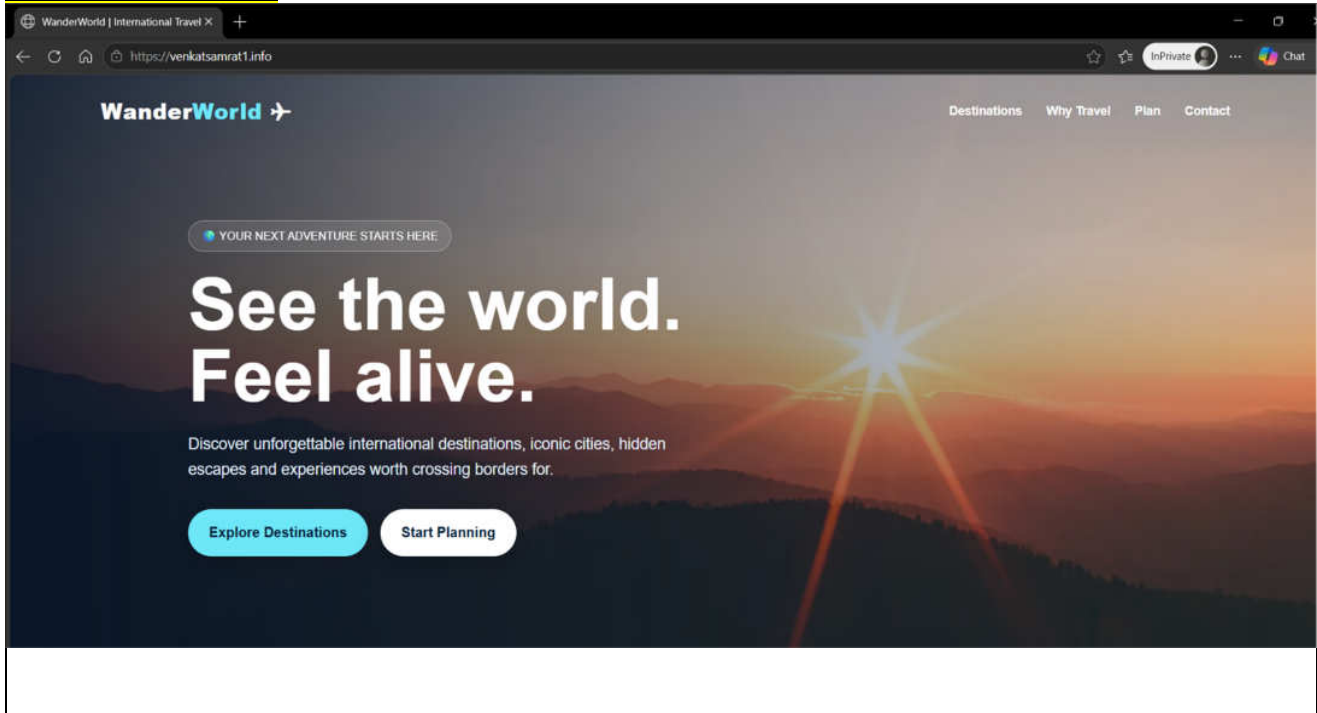
Finally, test:

<http://venkatsamrat1.info>

<https://venkatsamrat1.info>

The HTTPS URL should load the website using the Let's Encrypt SSL certificate.

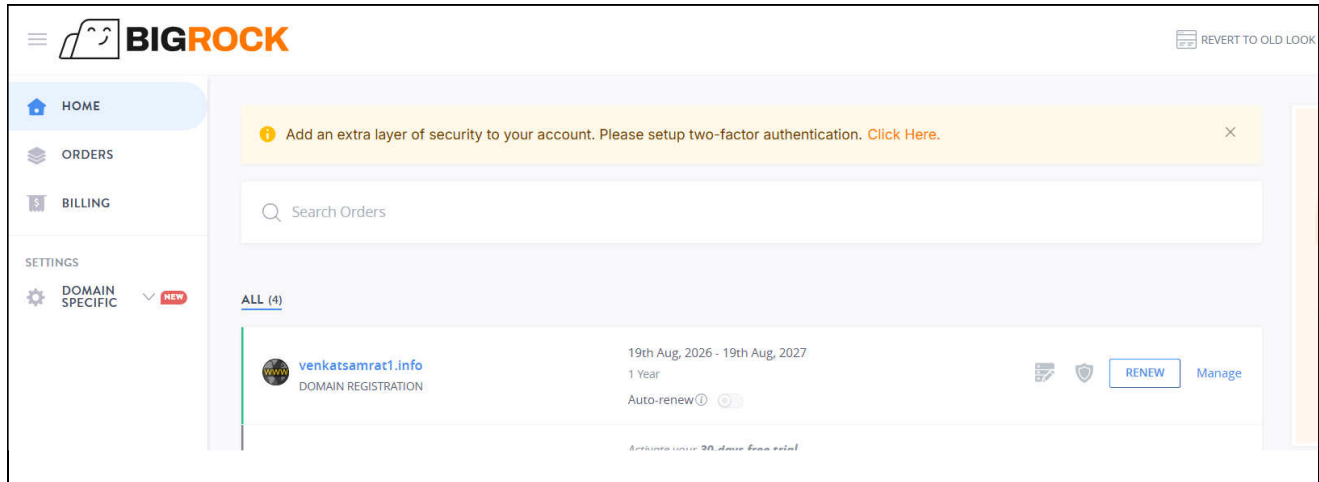
SSL Enabled with HTTPS



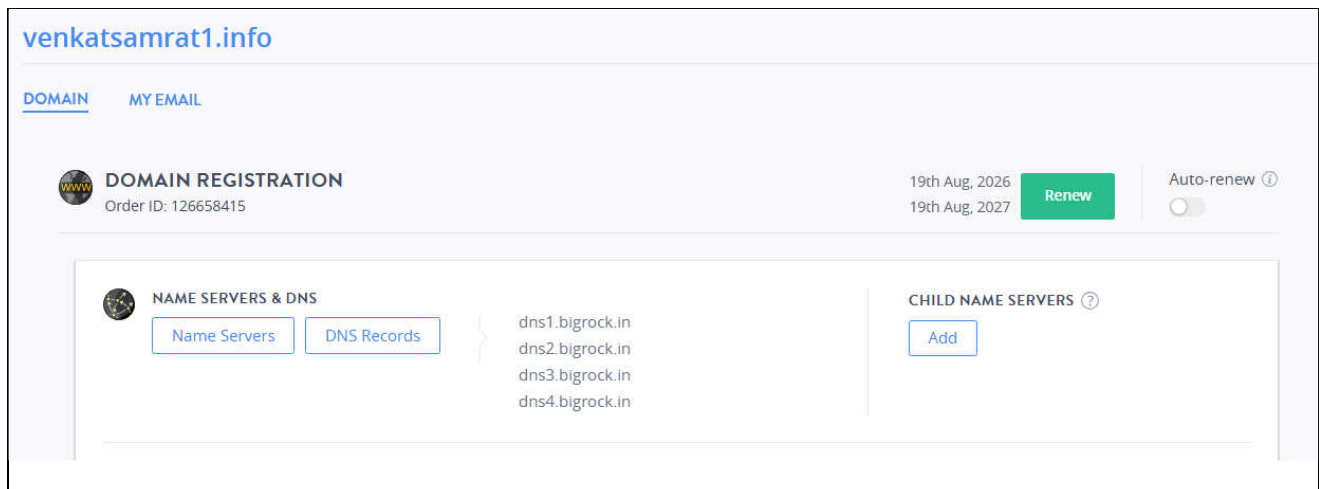
Apache HTTP Server – Domain Setup and Free SSL Configuration

Domain Creation in BigRock

See your domain name and right hand side select the manage option



Select DNS Records



Select Manage DNS Records and Select “A”

Under “DOMAIN/SUB-DOMAIN”

Give “@” IN A IPv4 ADDRESS* <your elastic-ip address> update and save

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MANAGE DNS RECORDS

For venkatsamrat1.info

[ALL RECORDS](#) | [A](#) | [AAAA](#) | [MX](#) | [CNAME](#) | [NS](#) | [TXT](#) | [SRV](#) | [SOA](#)



The record you are trying to add already exists.

[← Back to DNS Records](#)

ADD A RECORD

DOMAIN/SUB-DOMAIN	IN	A	IPv4 ADDRESS*
@			3.7.87.133
TTL (Time to Live) Choose TTL ▼			

These changes will take 4-6 hours to come into effect.

SAVE RECORD

CURRENT RECORDS (1)

venkatsamrat1.info	IN	A	3.7.87.133	▼		
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