Cloud Server Project Documentation

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Website: studyuae.online
IP Address: 13.60.35.197
Cloud Provider: AWS EC2
OS: Ubuntu Linux
Web Server: Apache2
SSL/TLS: Configured
GitHub Repository: Yes
Submitted to: Hena Iqbal

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1. Setting up the AWS EC2 Instance

1. **Launch EC2 Instance:**

   o Log in to AWS Management Console.

   o Go to **EC2 Dashboard** → Click **Launch Instance**.

   o Select **Ubuntu 22.04 LTS** as the OS.

   o Choose **t2.micro (Free Tier Eligible)**.

   o Configure security group to allow ports **22 (SSH), 80 (HTTP), and 443 (HTTPS)**.

   o Assign an **Elastic IP** to the instance.

2. **Connect to the Server via SSH:**

2. Installing and Configuring Apache2 Web Server

Step 1: Update System Packages

```
ubuntu@ip-172-31-43-183:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ubuntu@ip-172-31-43-183:~$
```

Step 2: Install Apache2

```
ubuntu@ip-172-31-43-183:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.58-1ubuntu8.6).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ubuntu@ip-172-31-43-183:~$
```

Step 3: Verify Apache2 Installation

```
ubuntu@ip-172-31-43-183:~$ sudo service apache2 status
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
     Active: active (running) since Thu 2025-04-10 22:10:07 UTC; 33min ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 20896 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 20923 (apache2)
      Tasks: 55 (limit: 1077)
     Memory: 10.8M (peak: 11.2M)
        CPU: 180ms
     CGroup: /system.slice/apache2.service
             ├─20923 /usr/sbin/apache2 -k start
             ├─20926 /usr/sbin/apache2 -k start
             └─20927 /usr/sbin/apache2 -k start

Apr 10 22:10:07 ip-172-31-43-183 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Apr 10 22:10:07 ip-172-31-43-183 systemd[1]: Started apache2.service - The Apache HTTP Server.
ubuntu@ip-172-31-43-183:~$
```

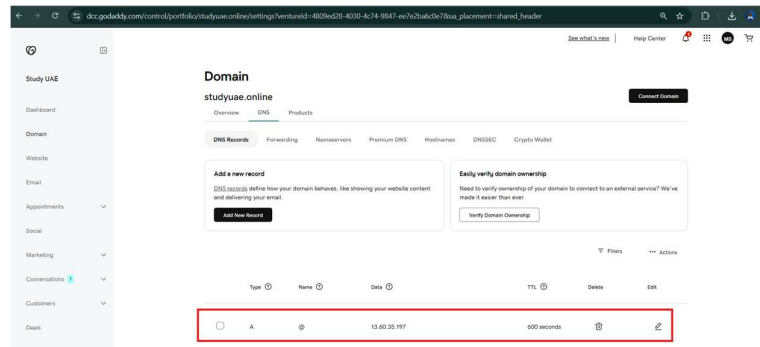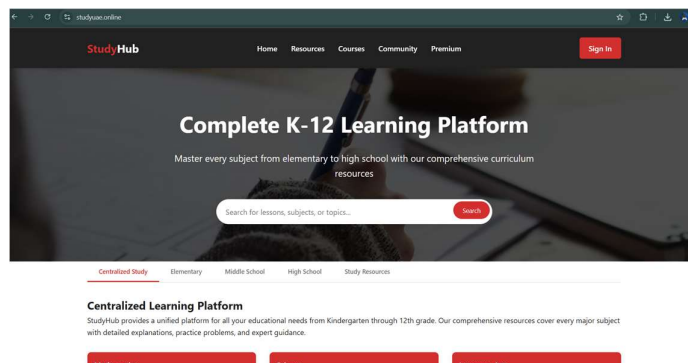**Step 4: Test Web Server**

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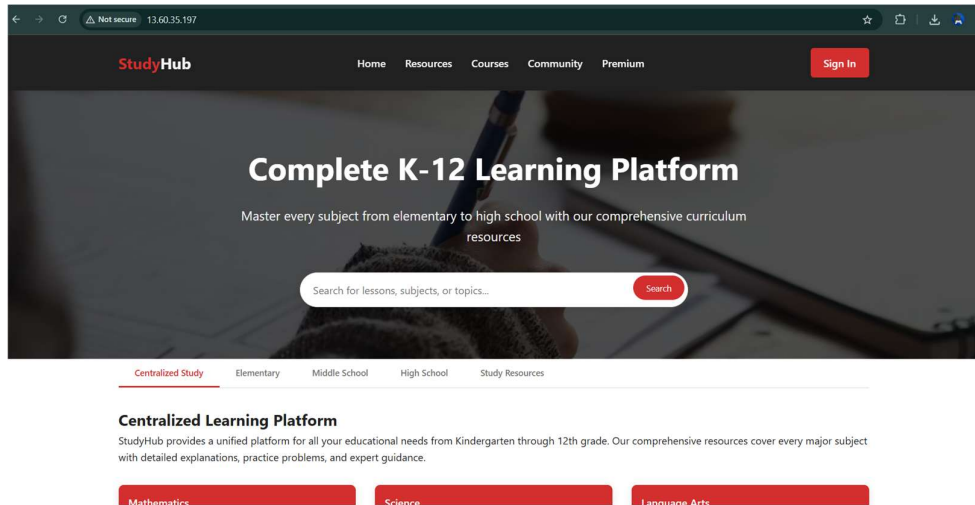
3. Linking Domain Name (DNS Setup)

1. **Go to Your Domain Registrar (e.g., Namecheap, GoDaddy).**

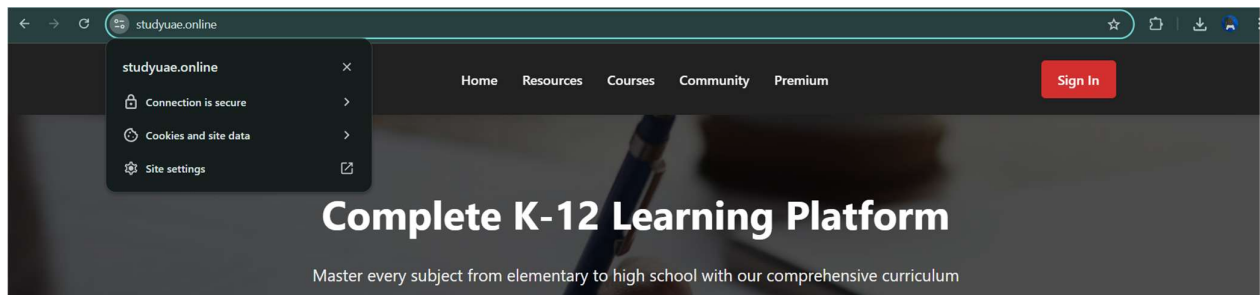2. **Update the A Record:**

3. **Verify DNS Setup:**

4. Configuring SSL/TLS with Let's Encrypt and Obtain SSL Certificate

Step 1: Install Certbot

sudo apt install certbot python3-certbot-apache -y

yes, my website has a secure connection.