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ICT 171

Introduction To Server Environments & Architectures

Documentation

IP Address: 16.16.93.15

Domain Name: https://burgerdxb.online/

Contents

Step 1: Make an Amazon AWS account .

- Go to https://signin.aws.amazon.com/signup?request_type=register to make an account.
- Fill in all your details.

Step 2: Login to AWS console.

- Go to https://aws.amazon.com/
- Click “Sign In to the Console”.
- Enter your email and password.

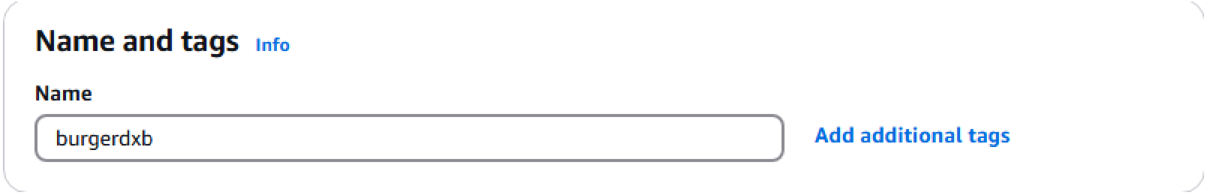
Step 3: Open the EC2 Dashboard.

- In the search bar at the top, type “EC2”.
- Click on “EC2” under Services.

Step 4: Lauch a New Instance .

- On the EC2 Dashboard, click on “Launch Instance”.

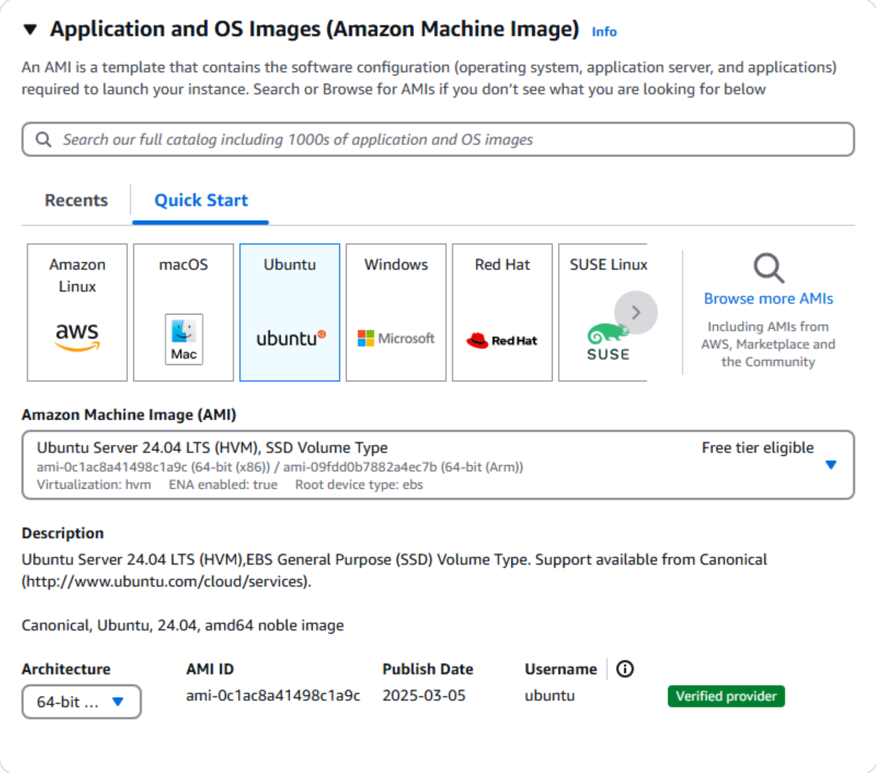
Step 5: Configuring the web server.

- Give a name for you web server.
- 

Name and tags

Name: burgerdxb

- Configuring the Amazon Machine Image.



▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Amazon Machine Image (AMI)

Ubuntu Server 24.04 LTS (HVM), SSD Volume Type — Free tier eligible
ami-0c1ac8a41498c1a9c (64-bit (x86)) / ami-09fdd0b7882a4ec7b (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

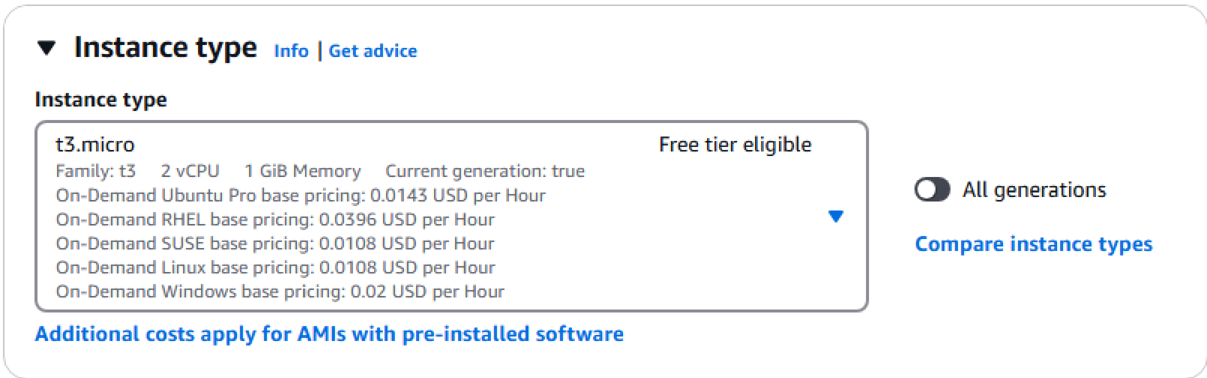
Description

Ubuntu Server 24.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).

Canonical, Ubuntu, 24.04, amd64 noble image

Architecture	AMI ID	Publish Date	Username	
64-bit ... ▼	ami-0c1ac8a41498c1a9c	2025-03-05	ubuntu	Verified provider

- Instance type .

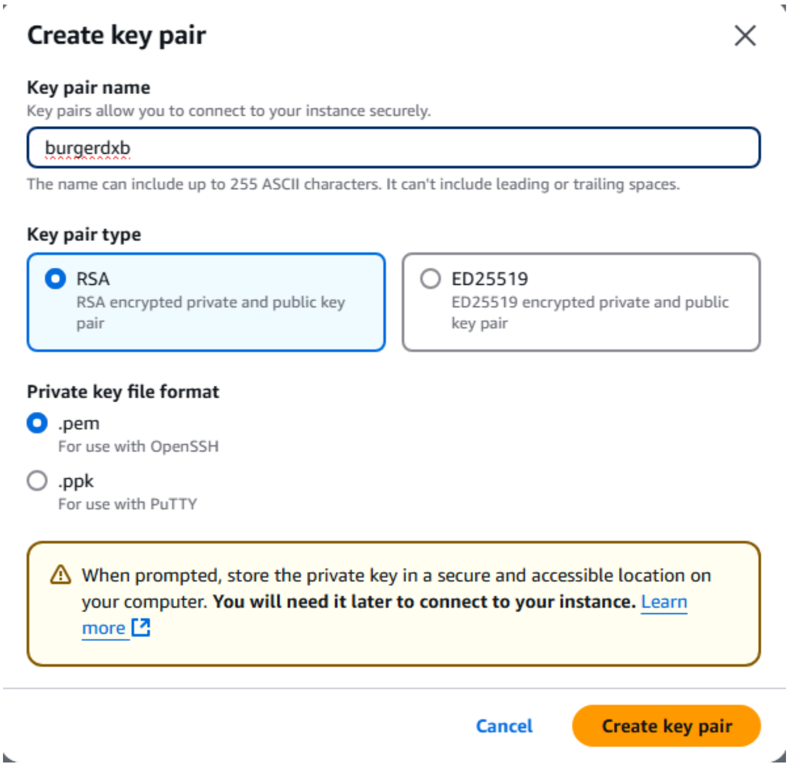


▼ Instance type Info | Get advice

Instance type

t3.micro — Free tier eligible
Family: t3 2 vCPU 1 GiB Memory Current generation: true
On-Demand Ubuntu Pro base pricing: 0.0143 USD per Hour
On-Demand RHEL base pricing: 0.0396 USD per Hour
On-Demand SUSE base pricing: 0.0108 USD per Hour
On-Demand Linux base pricing: 0.0108 USD per Hour
On-Demand Windows base pricing: 0.02 USD per Hour

- Create a keypair .



Create key pair

Key pair name

Key pairs allow you to connect to your instance securely.

burgerdxb

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

● RSA
RSA encrypted private and public key pair

○ ED25519
ED25519 encrypted private and public key pair

Private key file format

● .pem
For use with OpenSSH

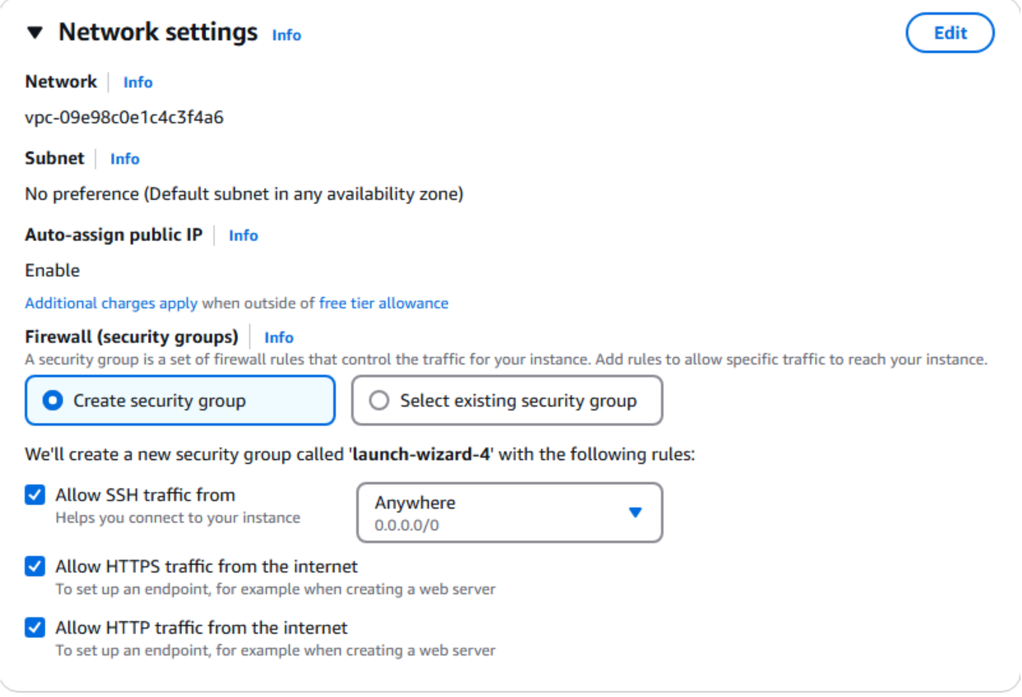
○ .ppk
For use with PuTTY

When prompted, store the private key in a secure and accessible location on your computer. **You will need it later to connect to your instance.** Learn more

Cancel

Create key pair

- Network settings .



Network settings Info

Edit

Network | Info

vpc-09e98c0e1c4c3f4a6

Subnet | Info

No preference (Default subnet in any availability zone)

Auto-assign public IP | Info

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups) | Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

● Create security group

○ Select existing security group

We'll create a new security group called '**launch-wizard-4**' with the following rules:

☑ Allow SSH traffic from
Helps you connect to your instance

Anywhere
0.0.0.0/0

☑ Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server

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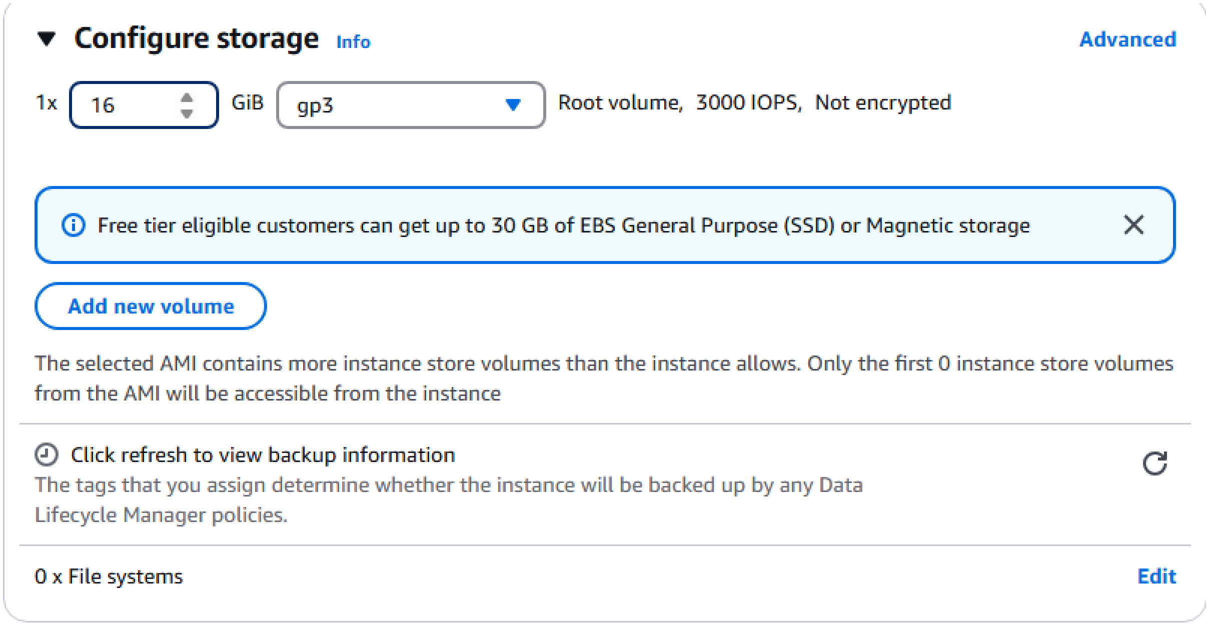
To set up an endpoint, for example when creating a web server

- Configure storage .


▼ Configure storage Info

Advanced

1x 16 GiB gp3 Root volume, 3000 IOPS, Not encrypted

ⓘ Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage ✕

The selected AMI contains more instance store volumes than the instance allows. Only the first 0 instance store volumes from the AMI will be accessible from the instance

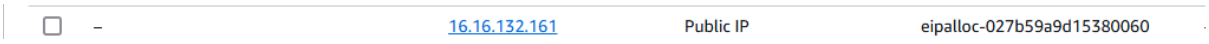
Click refresh to view backup information
The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

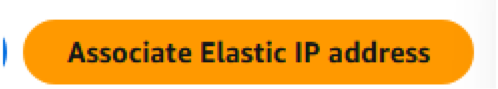
0 x File systems Edit

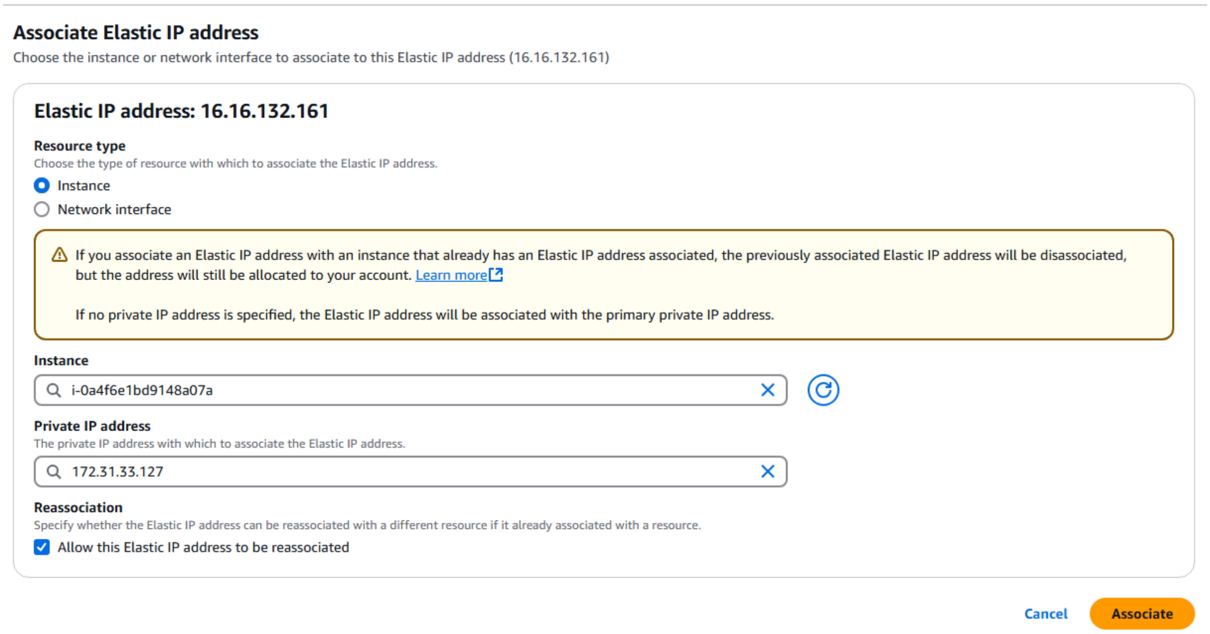
- Then we can launch our instance.

Step 6: Setting up an elastic ip for ease of access .

- In EC2 under Network & Security →Elastic IPs.
- Click on Allocate Elastic IP address.
- Keep default settings and click “Allocate”.
- Click on your elastic ip to allocate it to your web server.


☐ – 16.16.132.161 Public IP eipalloc-027b59a9d15380060



- 

  Associate Elastic IP address

  Choose the instance or network interface to associate to this Elastic IP address (16.16.132.161)

  Elastic IP address: 16.16.132.161

  Resource type

  Choose the type of resource with which to associate the Elastic IP address.

  ● Instance

  ○ Network interface

  ⚠ If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. Learn more

  If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

  Instance

  i-0a4f6e1bd9148a07a

  Private IP address

  The private IP address with which to associate the Elastic IP address.

  172.31.33.127

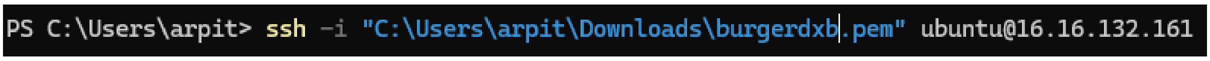
  Reassociation

  Specify whether the Elastic IP address can be reassociated with a different resource if it already associated with a resource.

  ☑ Allow this Elastic IP address to be reassociated

Step 7: SSH into the web server.

- Open terminal on your PC.
- ssh -i "location of keypair saved on your PC" ubuntu@ip address of server
- eg:



```
PS C:\Users\arpit> ssh -i "C:\Users\arpit\Downloads\burgerdxb.pem" ubuntu@16.16.132.161
```

Step 8: Installing Apache , Wordpress, MySQL .

- Follow the steps provided in the video .

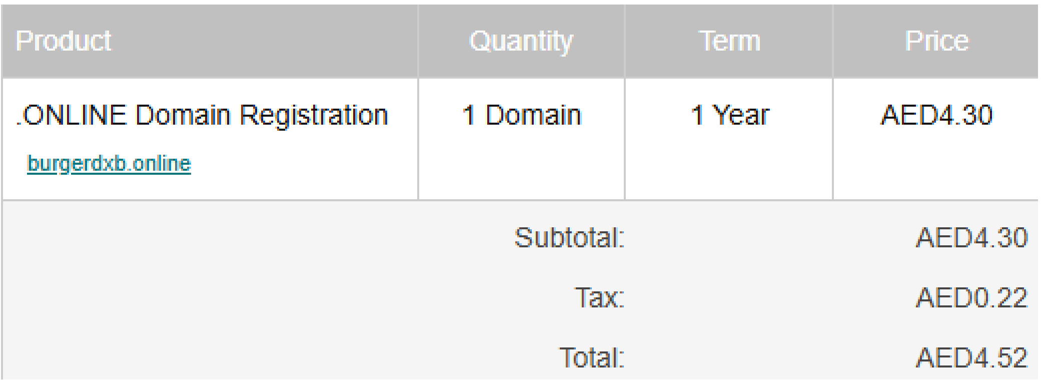
  https://youtu.be/18rfWZYbS7o?si=Owj6a9VclTLl7PZX

- And copy paste the commands from the below website.

  https://portforwarded.com/install-wordpress-on-ubuntu-22-04-lts-lamp-stack/

Step 9: Buying a domain name.

- Go to https://www.godaddy.com/
- Buy a domain name .



Product	Quantity	Term	Price
.ONLINE Domain Registration burgerdxb.online	1 Domain	1 Year	AED4.30
	Subtotal:		AED4.30
	Tax:		AED0.22
	Total:		AED4.52

Step 10: Changing NameServers from godaddy to AWS.

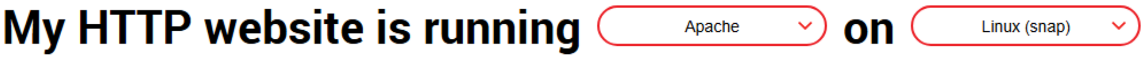
- Follow the following video .

  https://youtu.be/RI8oy-HGkIQ?si=px-ZXntsABxBtlMU

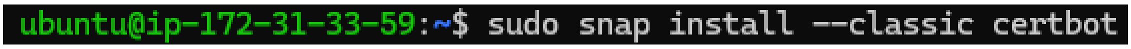
Step 11: Obtaining SSL/TLS certification .

- Follow the instructions and commands provided in the following website.

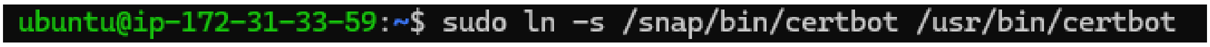
  https://certbot.eff.org/instructions?ws=apache&os=snap

- 

  My HTTP website is running Apache on Linux (snap)

- SSH into your server then, follow the commands
- 

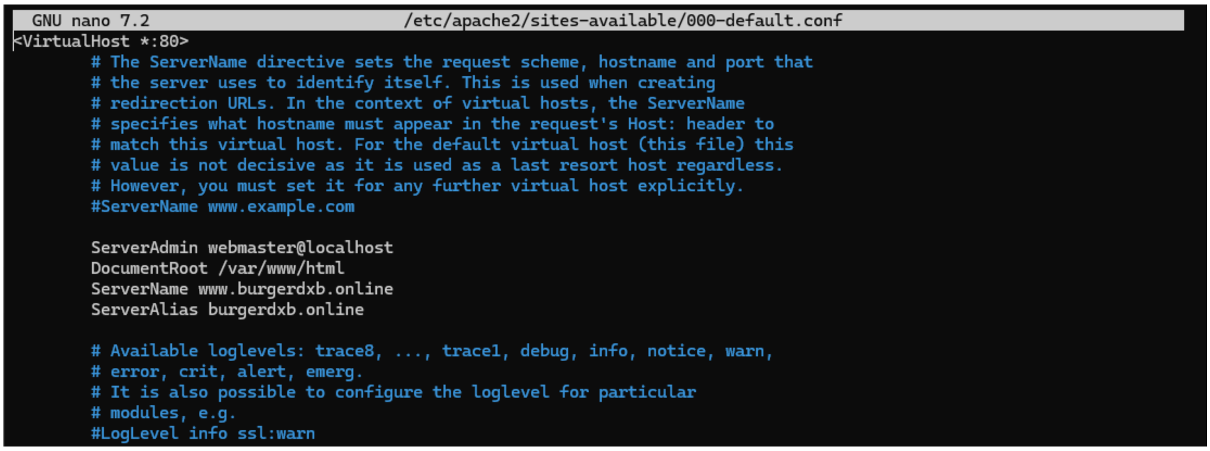
  ```
  ubuntu@ip-172-31-33-59:~$ sudo snap install --classic certbot
  ```

- 

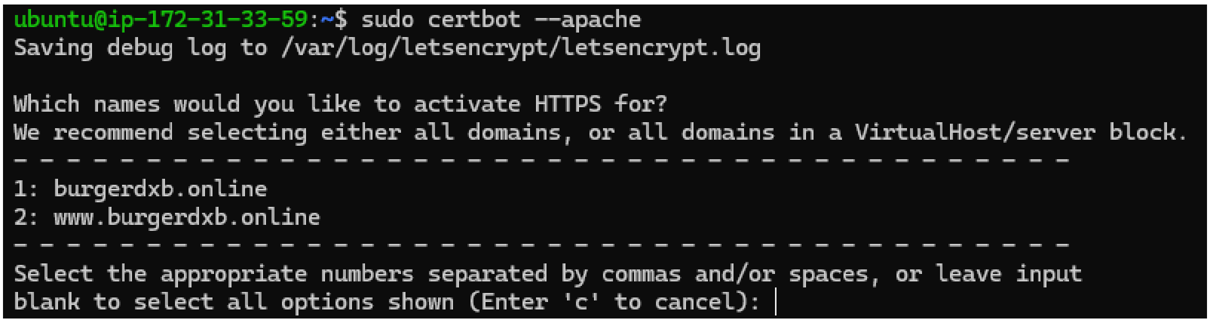
  ```
  ubuntu@ip-172-31-33-59:~$ sudo ln -s /snap/bin/certbot /usr/bin/certbot
  ```

- Next we go to “sudo nano /etc/apache2/sites-available/000-default.conf”

  and add our server name and server alias into the file.

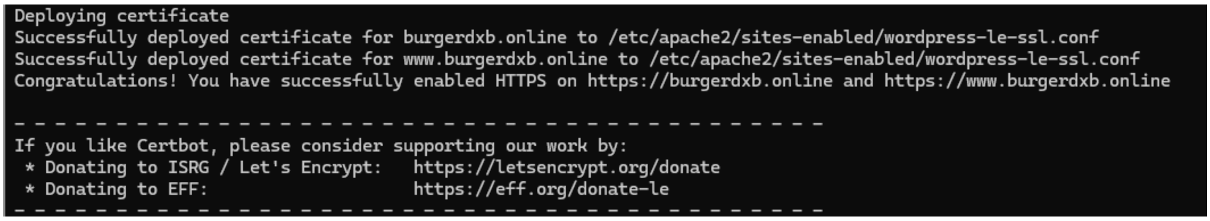


```
  GNU nano 7.2                                   /etc/apache2/sites-available/000-default.conf
<VirtualHost *:80>
        # The ServerName directive sets the request scheme, hostname and port that
        # the server uses to identify itself. This is used when creating
        # redirection URLs. In the context of virtual hosts, the ServerName
        # specifies what hostname must appear in the request's Host: header to
        # match this virtual host. For the default virtual host (this file) this
        # value is not decisive as it is used as a last resort host regardless.
        # However, you must set it for any further virtual host explicitly.
        #ServerName www.example.com

        ServerAdmin webmaster@localhost
        DocumentRoot /var/www/html
        ServerName www.burgerdxb.online
        ServerAlias burgerdxb.online

        # Available loglevels: trace8, ..., trace1, debug, info, notice, warn,
        # error, crit, alert, emerg.
        # It is also possible to configure the loglevel for particular
        # modules, e.g.
        #LogLevel info ssl:warn
```

- 

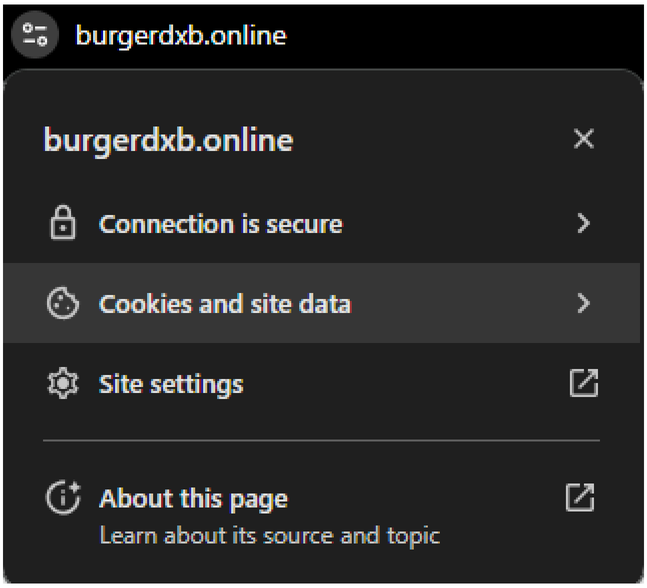
```
ubuntu@ip-172-31-33-59:~$ sudo certbot --apache
Saving debug log to /var/log/letsencrypt/letsencrypt.log

Which names would you like to activate HTTPS for?
We recommend selecting either all domains, or all domains in a VirtualHost/server block.
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
1: burgerdxb.online
2: www.burgerdxb.online
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Select the appropriate numbers separated by commas and/or spaces, or leave input
blank to select all options shown (Enter 'c' to cancel):
```

  Click enter to select all the domains.

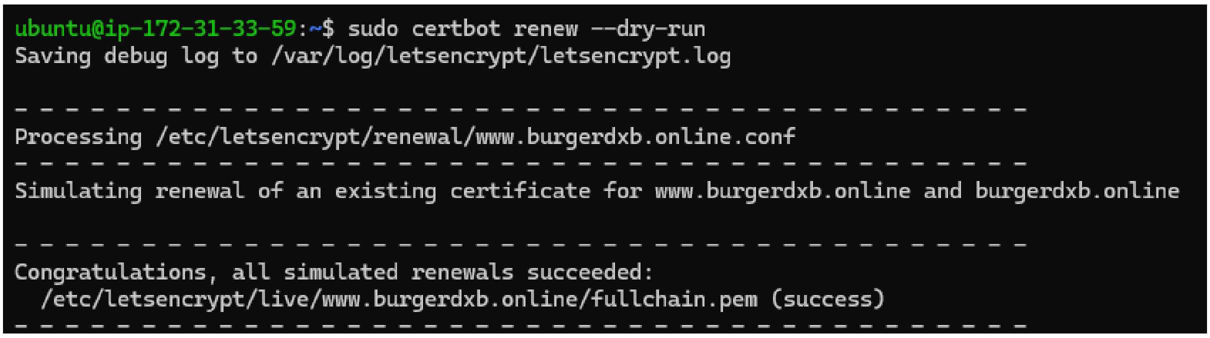
- 

```
Deploying certificate
Successfully deployed certificate for burgerdxb.online to /etc/apache2/sites-enabled/wordpress-le-ssl.conf
Successfully deployed certificate for www.burgerdxb.online to /etc/apache2/sites-enabled/wordpress-le-ssl.conf
Congratulations! You have successfully enabled HTTPS on https://burgerdxb.online and https://www.burgerdxb.online

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
If you like Certbot, please consider supporting our work by:
 * Donating to ISRG / Let's Encrypt:   https://letsencrypt.org/donate
 * Donating to EFF:                    https://eff.org/donate-le
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

  Now we have successfully obtained an SSL certification for our website.

- Testing automatic renewal for our website.



```
ubuntu@ip-172-31-33-59:~$ sudo certbot renew --dry-run
Saving debug log to /var/log/letsencrypt/letsencrypt.log

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Processing /etc/letsencrypt/renewal/www.burgerdxb.online.conf
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Simulating renewal of an existing certificate for www.burgerdxb.online and burgerdxb.online

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Congratulations, all simulated renewals succeeded:
  /etc/letsencrypt/live/www.burgerdxb.online/fullchain.pem (success)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```