



ICT 171-Introduction to Server
Environments and Architectures

ASSIGNMENT 2

CLOUD SERVER PROJECT



Global IP Address:

54.151.182.193

DNS:

<https://www.snapshare.one>

Table of Contents

Setting up Web Server and Linking with a DNS Entry:	3
Downloading Wordpress:.....	8
Setting up Wordpress:.....	10
SSL/TLS Documentation	14

Setting up Web Server and Linking with a DNS Entry:

Launching Ubuntu instance and associating Elastic IP Address:

The screenshot shows the AWS EC2 console with the 'Elastic IP addresses' section. A specific IP address, 54.151.182.193, is selected. In the 'Actions' dropdown menu, the 'Associate Elastic IP address' option is highlighted with a red box.

Complete this setup by entering the required details followed by clicking the associate button.

The screenshot shows the 'Associate Elastic IP address' wizard. The 'Resource type' section has 'Instance' selected. The 'Instance' field contains 'i-0494c4099825bdf0a'. The 'Private IP address' field contains '172.31.30.95'. The 'Associate' button is highlighted with a blue box.

The elastic IP is now set.

Public IPv4 ...	Elastic IP	IPv6 IPs	Monitoring
54.151.182.193	54.151.182.193	-	disabled

Login/Create an account and buy a domain from a website like one.com

The screenshot shows the homepage of one.com. At the top, there's a navigation bar with links for 'Plans & pricing', 'Helpdesk', 'Login' (which is highlighted with a red box), and a shopping cart icon. Below the navigation is a dropdown menu for 'Domain' (also highlighted with a red box). The main content area features a large banner with the text 'Start your website with one.com'. It includes a subtext about creating a professional website, two buttons ('Start now' and 'Let us build your site'), and a price of '\$ 0.99 /mo.*'. A Trustpilot review section shows a rating of 'Great' with 21,253 reviews. On the right side, there's a preview of a website builder interface with a photo of a woman holding a dog.

Side by side, purchase a domain and link it to the public IP address. Here's how:

The screenshot shows the 'Hosted zones' page in the AWS Route 53 console. The top navigation bar includes 'Route 53' and 'Hosted zones'. Below the navigation is a search bar and a 'Create hosted zone' button (highlighted with a red box). The main content area displays a table with one entry: 'Hosted zones (1)'. The table includes columns for 'Hosted zone name', 'Type', and 'Record count'. The first row shows 'snapshare.one' as the host zone name, 'Public' as the type, and '3' as the record count. There are also 'View details', 'Edit', and 'Delete' buttons for this entry.

Link the domain bought to the public IP address using a hosted zone. The result should look like this:

The screenshot shows the 'Hosted zones (1/1)' page in the AWS Route 53 console. The top navigation bar includes 'Route 53' and 'Hosted zones'. Below the navigation is a search bar and a 'Create hosted zone' button. The main content area displays a table with one entry: 'Hosted zones (1/1)'. The table includes columns for 'Hosted zone name', 'Type', and 'Record count'. The first row shows 'snapshare.one' as the host zone name, 'Public' as the type, and '3' as the record count. There are also 'View details', 'Edit', and 'Delete' buttons for this entry. To the right of the table, there's a 'details' panel. This panel contains information about the hosted zone, including its name ('snapshare.one'), ID ('Z0322625JK4QZ9THZQL9'), and description ('-'). It also shows the 'Type' as 'Public hosted zone' and 'Record count' as '3'. A 'Name servers' section at the bottom lists four nameservers: ns-923.awsdns-51.net, ns-1649.awsdns-14.co.uk, ns-1034.awsdns-01.org, and ns-247.awsdns-30.com. The entire 'details' panel is highlighted with a red box.

Go to DNS Settings on one.com and edit the name servers:

Services



Advanced settings

[DNS settings](#)

[Guest users](#)

[Referrals](#)

[Activity log](#)



Files & Security

[Domain lock](#) New

Redirect DNS records Nameservers Secondary DNS

Nameserver administration

When using external nameservers, you can't use one.com's services for web hosting, including your web space, Website Builder and email.

Please note that it can take up to 24 hours for the changes to update across the internet. [Learn more](#)

Nameservers

DNSSEC DS Records

Nameservers for your domain

Your domain's nameservers determine where your website is hosted. So when using one.com's nameservers, you're using our services. DNSSEC adds protection against spoofing and attacks.

one.com nameservers (default)
ns01.one.com
ns02.one.com

Change to custom nameservers

Name server 1 ns-923.awsdns-51.net	✓	IP address (optional)
Name server 2 ns-1649.awsdns-14.co.uk	✓	IP address (optional)
Name server 3 ns-1034.awsdns-01.org	✓	IP address (optional)
Name server 4 ns-247.awsdns-30.com	✓	IP address (optional)

[Delete](#) [Add another server](#)

[Save](#)

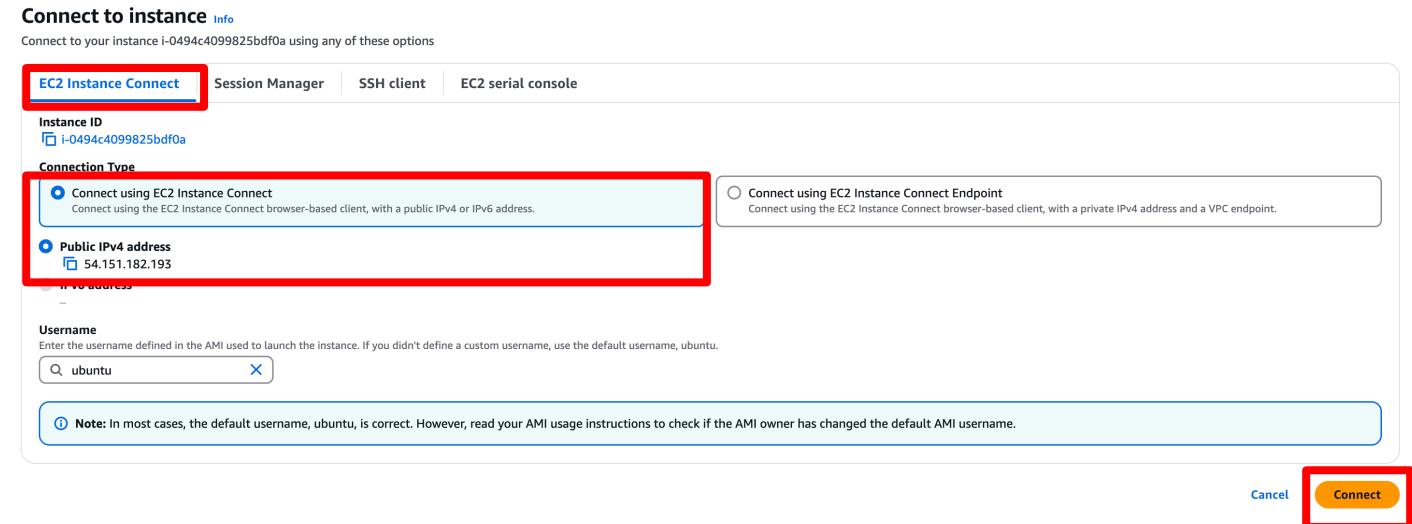
Come back to AWS and Click ‘Connect’ in order to connect using EC2 instance connect. This step is required for gaining access to the terminal.

Instances (1/1) [Info](#)

Last updated 12 minutes ago [Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

Find Instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input checked="" type="checkbox"/> i-0494c4099825bdf0a	Running	t2.micro	2/2 checks passed	View alarms +	ap-southeast-1a	ec2-54-151-182-193.ap...	



The terminal will now open.

```
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-1026-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Tue Apr  8 19:27:13 UTC 2025

System load: 0.08           Processes:          111
Usage of /: 53.3% of 6.71GB   Users logged in:    0
Memory usage: 66%            IPv4 address for enX0: 172.31.30.95
Swap usage:  0%

* Ubuntu Pro delivers the most comprehensive open source security and
  compliance features.

  https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Tue Apr  8 13:16:54 2025 from 3.0.5.36
ubuntu@ip-172-31-30-95:~$
```

Run the following commands:

For installing Apache server on Ubuntu:

Update and upgrade packages:

```
sudo apt update
sudo apt upgrade -y
```

Install Apache server on Ubuntu:

```
sudo apt install apache2
```

Install PHP and PHP-FPM:

```
sudo apt install -y nginx php-dom php-simplexml php-ssh2 php-xml php-
xmlreader php-curl php-exif php-ftp php-gd php-iconv php-imagick php-json
php-mbstring php-posix php-sockets php-tokenizer php-fpm php-mysql php-gmp
php-intl php-cli
```

Check PHP Version:

```
php --version
```

```
ubuntu@ip-172-31-30-95:~$ php --version
PHP 8.3.6 (cli) (built: Mar 19 2025 10:08:38) (NTS)
Copyright (c) The PHP Group
Zend Engine v4.3.6, Copyright (c) Zend Technologies
    with Zend OPcache v8.3.6, Copyright (c), by Zend Technologies
ubuntu@ip-172-31-30-95:~$
```

Configure PHP:

```
sudo nano /etc/php/8.3/fpm/php.ini
```

Make the following changes in the file:

- upload_max_filesize = 200M
- post_max_filesize = 500M
- memory_limit = 512M
- cgi.fix_pathinfo = 0
- max_execution_time = 360

Save and Exit the File using:

```
ctrl 0 + ctrl x + y + enter key
```

Restart the PHP and enable it

```
sudo systemctl restart php8.3-fpm.service
```

```
sudo systemctl enable php8.3-fpm.service
```

Check the status of PHP-FPM and confirm if its running:

```
systemctl status php8.3-fpm.service
```

```
ubuntu@ip-172-31-30-95:~$ sudo systemctl restart php8.3-fpm.service
ubuntu@ip-172-31-30-95:~$ systemctl status php8.3-fpm.service
● php8.3-fpm.service - The PHP 8.3 FastCGI Process Manager
   Loaded: loaded (/usr/lib/systemd/system/php8.3-fpm.service; enabled; preset: enabled)
   Active: active (running) since Tue 2025-04-08 12:17:37 UTC; 38s ago
     Docs: man:php-fpm8.3(8)
   Main PID: 2427 (php-fpm8.3)
   Status: "Processes active: 0, idle: 2, Requests: 0, slow: 0, Traffic: 0req/sec"
      Tasks: 3 (limit: 1129)
     Memory: 11.7M (peak: 12.5M)
        CPU: 71ms
       CGROUP: /system.slice/php8.3-fpm.service
           ├─2427 php-fpm: master process (/etc/php/8.3/fpm/php-fpm.conf)
           ├─2428 php-fpm: pool www
           └─2429 php-fpm: pool www

Apr 08 12:17:36 ip-172-31-30-95 systemd[1]: Starting php8.3-fpm.service - The PHP 8.3 FastCGI Process Manager...
Apr 08 12:17:37 ip-172-31-30-95 systemd[1]: Started php8.3-fpm.service - The PHP 8.3 FastCGI Process Manager.
ubuntu@ip-172-31-30-95:~$
```

Downloading Wordpress:

Download Wordpress using this command:

```
wget https://wordpress.org/latest.tar.gz
```

Extract the Wordpress Archive: not

```
tar -xvzf latest.tar.gz
```

Move Wordpress to Web Directory:

```
sudo mv wordpress /var/www/wordpress
```

Set Correct Permissions and assign ownership:

```
sudo chown -R www-data:www-data /var/www/wordpress/
```

```
sudo chmod -R 755 /var/www/wordpress/
```

Next, install MySQL:

```
sudo apt install mysql-server
```

Secure the installation:

```
sudo mysql_secure_installation
```

Check status:

```
sudo systemctl status mysql
```

Log in to MySQL:

```
sudo mysql
```

```
ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY  
'your_new_password';
```

```
FLUSH PRIVILEGES;
```

```
EXIT;
```

```
mysql -u root -p
```

Create Database:

```
CREATE DATABASE wp_aiza;
```

Create a new user:

```
CREATE USER 'wpuser'@'localhost' IDENTIFIED WITH mysql_native_password BY  
'your_new_password';
```

Grant permissions:

```
GRANT ALL ON wordpress.* TO 'wpuser@'localhost' WITH GRANT OPTION;
```

Apply changes and exit:

```
FLUSH PRIVILEGES;  
EXIT;
```

Configure Nginx Web Server and switching it with Apache2.

Verify if apache is still running:

```
sudo systemctl status apache2
```

Install nginx:

```
sudo apt update  
sudo apt install -y nginx
```

Disable Apache:

```
sudo systemctl stop apache2  
sudo systemctl disable apache2
```

Start and enable Nginx:

```
sudo systemctl start nginx  
sudo systemctl enable nginx
```

Check running status:

```
sudo systemctl status nginx
```

Create and configure a server block for wordpress and make necessary changes to the file (adding dns url and php version number)

```
sudo nano /etc/nginx/sites-enabled/wordpress
```

Test the configuration for errors:

```
sudo nginx -t
```

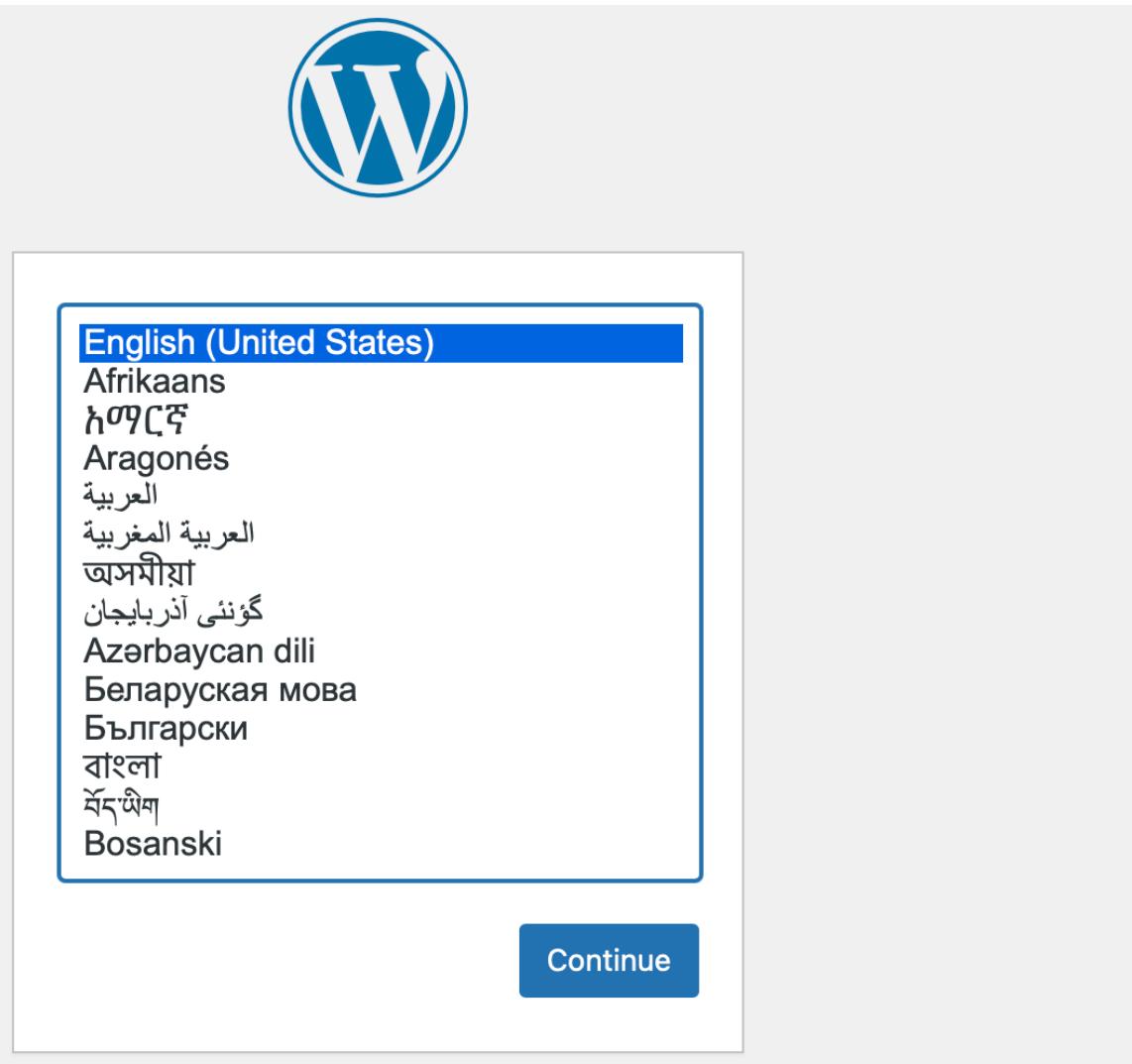
If successful, restart nginx:

```
sudo systemctl restart nginx
```

Setting up Wordpress:

Enter your domain URL in a new tab:

Select English and continue:





Welcome to WordPress. Before getting started, you will need to know the following items.

1. Database name
2. Database username
3. Database password
4. Database host
5. Table prefix (if you want to run more than one WordPress in a single database)

This information is being used to create a `wp-config.php` file. **If for any reason this automatic file creation does not work, do not worry. All this does is fill in the database information to a configuration file. You may also simply open `wp-config-sample.php` in a text editor, fill in your information, and save it as `wp-config.php`.** Need more help? [Read the support article on `wp-config.php`.](#)

In all likelihood, these items were supplied to you by your web host. If you do not have this information, then you will need to contact them before you can continue. If you are ready...

[Let's go!](#)



Welcome

Welcome to the famous five-minute WordPress installation process! Just fill in the information below and you'll be on your way to using the most extendable and powerful personal publishing platform in the world.

Information needed

Please provide the following information. Do not worry, you can always change these settings later.

Site Title Snapshare

Username AizaAdmin

Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.

Password pjkJ5DsU4zujkCPWzX  Hide

Strong

Important: You will need this password to log in. Please store it in a secure location.

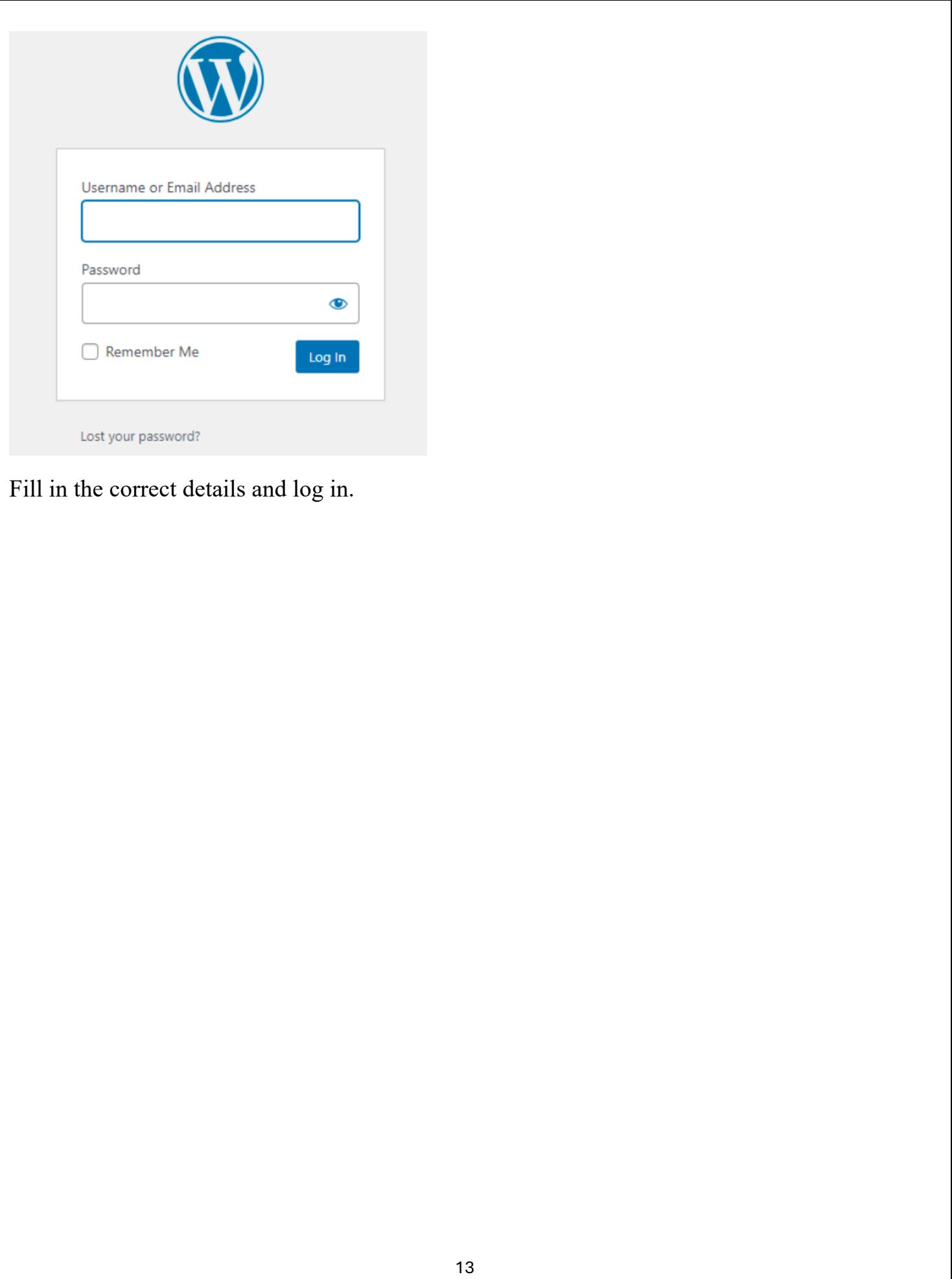
Your Email aizatalha06@gmail.com

Double-check your email address before continuing.

Search engine visibility Discourage search engines from indexing this site

It is up to search engines to honor this request.

[Install WordPress](#)



The image shows a WordPress login screen. At the top center is the classic blue 'W' logo. Below it is a light gray rectangular form. The first field is labeled "Username or Email Address" and contains a blank input box. The second field is labeled "Password" and also contains a blank input box with a small blue eye icon to its right for password visibility. Below these fields are two buttons: a white checkbox labeled "Remember Me" and a blue "Log In" button. At the bottom left of the form is a link "Lost your password?".

Fill in the correct details and log in.

SSL/TLS Documentation

Enabling HTTPS with Certbot on Ubuntu 20.04 Using Nginx.

Ensure that TCP ports 22 and 80 are available through the firewall:

Port 22: For SSH access.

Port 80: For HTTP access.

Install Snapd and refresh core:

```
sudo snap install core  
sudo snap refresh core
```

Remove old certbot configurations:

```
sudo apt remove certbot
```

Install certbot via Snap:

```
sudo snap install --classic certbot
```

Create a symbolic link to ensure the certbot command can be run:

```
sudo ln -s /snap/bin/certbot /usr/bin/certbot
```

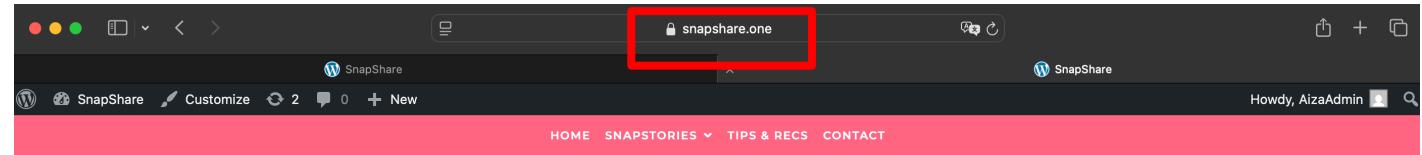
Run Certbot with Nginx plugin to obtain and install the SSL certificate:

```
sudo certbot -nginx
```

The output should look like this:

```
ubuntu@ip-172-31-30-95:~$ sudo certbot --nginx  
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: snapshare.one  
2: www.snapshare.one  
-----  
Select the appropriate numbers separated by commas and/or spaces, or leave input  
blank to select all options shown (Enter 'c' to cancel): 2  
Certificate not yet due for renewal  
  
You have an existing certificate that has exactly the same domains or certificate name you requested and isn't close to expiry.  
(ref: /etc/letsencrypt/renewal/www.snapshare.one.conf)  
  
What would you like to do?  
-----  
1: Attempt to reinstall this existing certificate  
2: Renew & replace the certificate (may be subject to CA rate limits)  
-----  
Select the appropriate number [1-2] then [enter] (press 'c' to cancel): 1  
Deploying certificate  
Successfully deployed certificate for www.snapshare.one to /etc/nginx/nginx.conf  
Congratulations! You have successfully enabled HTTPS on https://www.snapshare.one  
-----  
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
```

Refresh your webpage:



SnapShare

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