



ICT 171-Introduction to Server
Environments and Architectures

ASSIGNMENT 2

CLOUD SERVER PROJECT

Global IP Address:

54.151.182.193

DNS: 54.151.182.193

<https://www.snapshotshare.one>

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Setting up Web Server and Linking with a DNS Entry:

Launching Ubuntu instance and associating Elastic IP Address:

The screenshot shows the AWS Management Console interface. At the top, there's a navigation bar with the AWS logo, a search bar, and the region 'Asia Pacific (Singapore)'. On the left, the 'EC2' sidebar is visible with links to 'Dashboard', 'EC2 Global View', and 'Events'. The main content area is titled 'Elastic IP addresses (1/3)'. It features a search bar and a table with columns 'Name' and 'Allocated IPv4 address'. A single entry is shown with an empty name and the IP address '54.151.182.193'. To the right of the table, an 'Actions' dropdown menu is open, showing options: 'View details', 'Release Elastic IP addresses', 'Associate Elastic IP address' (highlighted with a red box), and 'Disassociate Elastic IP address'. An 'Allocate Elastic IP address' button is also visible at the top right.

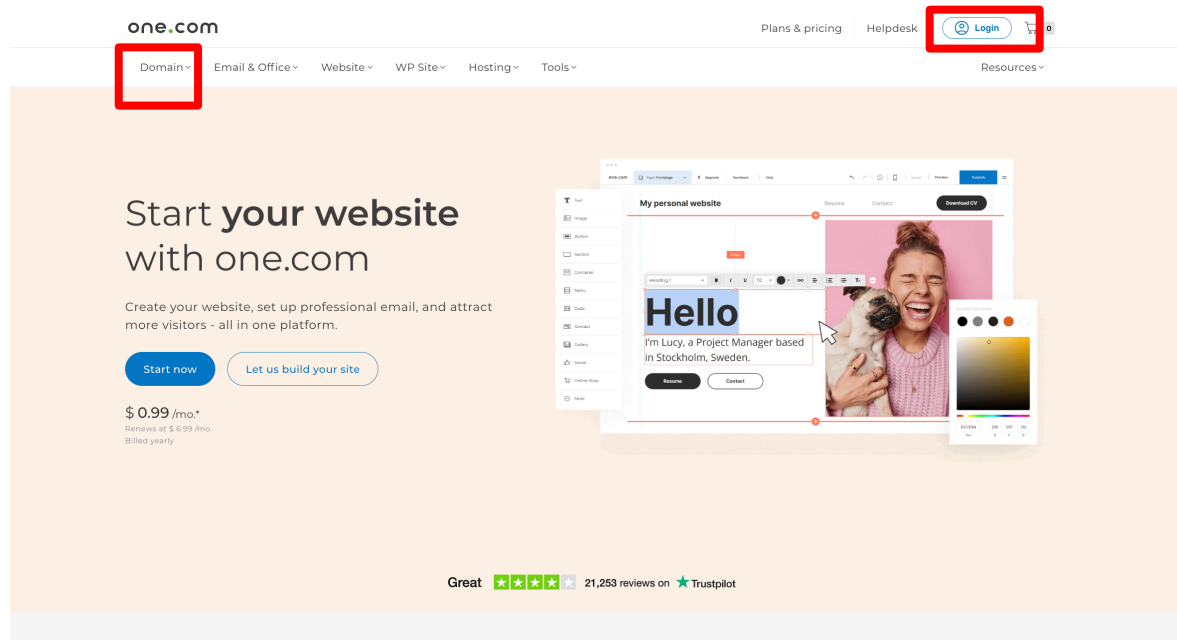
Complete this setup by entering the required details followed by clicking the associate button.

The screenshot shows the 'Associate Elastic IP address' dialog box. At the top, it says 'Choose the instance or network interface to associate to this Elastic IP address (13.113.161.113)'. Below this, the 'Elastic IP address: 13.113.161.113' is displayed. Under 'Resource type', the 'Instance' radio button is selected and highlighted with a red box. A warning message states: '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'. Below the warning, the 'Instance' field contains the ID 'i-0494c4099825bdf0a' and is highlighted with a red box. The 'Private IP address' field contains '172.31.30.95' and is also highlighted with a red box. At the bottom, the 'Reassociation' section has a checked checkbox 'Allow this Elastic IP address to be reassociated'. The 'Associate' button at the bottom right is highlighted with a blue box.

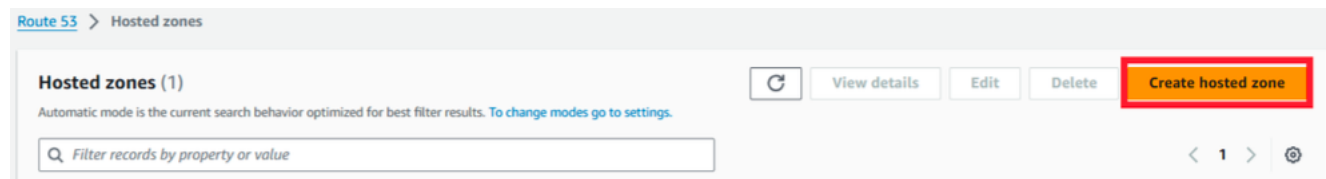
The elastic IP is now set.

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



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



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

Hosted zones (1/1)

[View details](#) [Edit](#) [Delete](#) [Create hosted zone](#)

Automatic mode is the current search behavior optimized for best filter results. [To change modes go to settings.](#)

Hosted zone name	Type	Create...	Record
snapshare.one	Public	Route 53	3

details

Hosted zone name
snapshare.one

Hosted zone ID
Z0322625JK4QZ9THZQL9

Description
-

Query log
-

Type
Public hosted zone

Record count
3

Name servers

- ns-923.awsdns-51.net
- ns-1649.awsdns-14.co.uk
- ns-1034.awsdns-01.org
- ns-247.awsdns-30.com

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

Nameserver 1 ns-923.awsdns-51.net ✓	IP address (optional)
Nameserver 2 ns-1649.awsdns-14.co.uk ✓	IP address (optional)
Nameserver 3 ns-1034.awsdns-01.org ✓	IP address (optional) Delete
Nameserver 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) [All states](#)

<input checked="" type="checkbox"/>	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...

Connect to instance [Info](#)

Connect to your instance i-0494c4099825bdf0a using any of these options

EC2 Instance Connect

[Session Manager](#)[SSH client](#)[EC2 serial console](#)

Instance ID

i-0494c4099825bdf0a

Connection Type

☒ Connect using EC2 Instance Connect

Connect using the EC2 Instance Connect browser-based client, with a public IPv4 or IPv6 address.

☐ Connect using EC2 Instance Connect Endpoint

Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.

☒ Public IPv4 address

54.151.182.193

Username

Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ubuntu.

Q ubuntu



Note: In most cases, the default username, ubuntu, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

[Cancel](#)[Connect](#)

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 O + 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)
   Process: 2430 ExecStartPost=/usr/lib/php/php-fpm-socket-helper install /run/php/php-fpm.sock /etc/php/8.3/fpm/pool.d/www.conf 83 (code=exited, status=0/SUCCESS)
  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: 7ms
    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:



English (United States)

Afrikaans

አማርኛ

Aragonés

العربية

العربية المغربية

অসমীয়া

گۆنئی آذربایجان

Azərbaycan dili

Беларуская мова

Български

বাংলা

བོད་ཡིག

Bosanski

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

Username

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

Password [Hide](#)
Strong

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

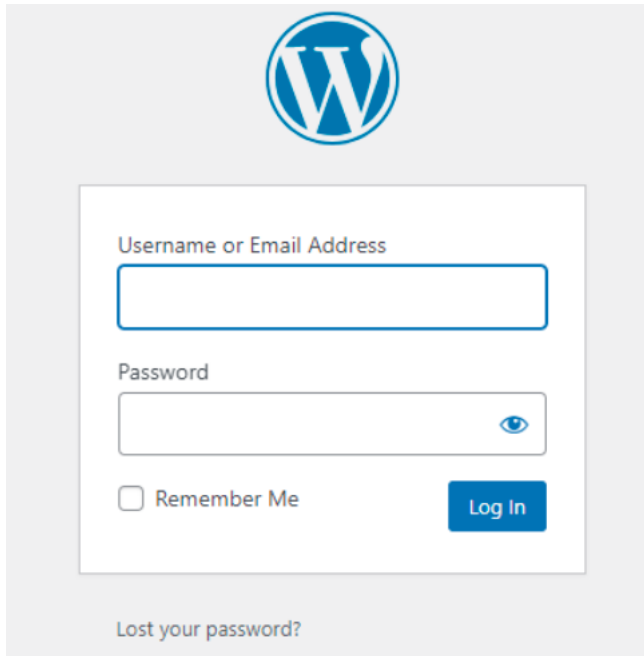
Your Email

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 the WordPress login interface. At the top center is the WordPress logo, a blue circle with a white 'W'. Below the logo is a white rectangular form with a thin blue border. Inside the form, the text 'Username or Email Address' is above a text input field. Below that, the text 'Password' is above another text input field, which has a small blue eye icon to its right. At the bottom left of the form is a checkbox followed by the text 'Remember Me'. At the bottom right is a blue button with the text 'Log In' in white. Below the form, the text 'Lost your password?' is displayed.

Fill in the correct details and log in.

SSL/TLS Documentation

Enabling HTTPS with Certbot on Ubuntu 20.04 Using Apache.

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 Apache plugin to obtain and install the SSL certificate:

```
sudo certbot -apache
```

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:

