# EC2

## Console

Create ubuntu instance on ec2:

A screenshot of a computer

Description automatically generated

Create new key pair:

A screenshot of a computer

Description automatically generated

Ssh into the instance using a key pair:

A black screen with white text

Description automatically generated

### Installing

Update instance:

***Sudo apt-get update -y***

Aws:

***curl "https://awscli.amazonaws.com/awscli-exe-linux-x86\_64.zip" -o "awscliv2.zip"***

***unzip awscliv2.zip***

***sudo ./aws/install***

credentials:

***mkdir ~/.aws***

***cd ~/.aws***

add credentials here

nginx:

***sudo apt install nginx -y***

php:

***sudo apt install php -y***

***sudo apt-get install php8.1-fpm -y***

Enable php for nginx:

In the sites available/defaults file

A screenshot of a computer screen

Description automatically generated

And this:

A computer screen with blue and white text

Description automatically generated

Restart nginx and php-fm:

***sudo systemctl reload nginx.service php8.1-fpm.service***

Copy file from bucket:

***Sudo aws s3 cp s3://r0745616-lab2-bucket/index.php /var/www/html/index.php***

Change the Security rules to allow http and https:

A screenshot of a computer

Description automatically generated

## Bash script:

Simple script that can be run to configure the entire web server:

#!/bin/bash

***sudo apt-get update -y***

***sudo apt install awscli -y***

***sudo apt install nginx -y***

***sudo apt install php -y***

***sudo apt-get install php8.1-fpm -y***

***sudo rm /var/www/html/index.html***

***wget https://r0745616-lab2-bucket.s3.eu-west-1.amazonaws.com/index.php***

***sudo mv index.php /var/www/html/index.php***

***wget https://r0745616-lab2-bucket.s3.eu-west-1.amazonaws.com/default***

***sudo mv default /etc/nginx/sites-available/default***

***sudo systemctl reload nginx.service php8.1-fpm.service***

### Termination protection:

You can turn it on in the instance:

A screenshot of a computer

Description automatically generated

When restarting an instance your IP address changes.

Can be solved with a Elastic IP address:

A screenshot of a computer

Description automatically generated

Associate this ip address with the instance:

A screenshot of a computer

Description automatically generated

### Encrypted volume:

A screenshot of a computer

Description automatically generated

Enable EC2 encryption:

A screenshot of a computer

Description automatically generated

Only newly created volumes will be encrypted. Old ones cannot be encrypted.

### EFS file system

Create a new Elastic file system.

A screenshot of a computer

Description automatically generated

Put it in the same vpc as the EC2 instance.

The mount can only be done through the CLI.

Needs the nfs-client package:

***Sudo apt install nfs-client***

A screenshot of a computer program

Description automatically generated

### Creating image:

A screenshot of a computer

Description automatically generated

Give it a name and you should be able to deploy it.

Launch new instance from AMI instead of quick start:

A screenshot of a computer

Description automatically generated

It has a new public IP address.

If you change a file on one instance on the nfs, it will be changed on both. After you reload nginx it

## Bash script

### Ubuntu AMI:

***aws ec2 run-instances \***

***--image-id ami-0694d931cee176e7d \***

***--instance-type t2.micro \***

***--key-name "ubuntu key pair" \***

***--user-data '***#!/bin/bash

***sudo apt-get update -y***

***sudo apt install awscli -y***

***sudo apt install nginx -y***

***sudo apt install php -y***

***sudo apt-get install php8.1-fpm -y***

***sudo rm /var/www/html/index.html***

***wget https://r0745616-lab2-bucket.s3.eu-west-1.amazonaws.com/index.php***

***sudo mv index.php /var/www/html/index.php***

***wget https://r0745616-lab2-bucket.s3.eu-west-1.amazonaws.com/default***

***sudo mv default /etc/nginx/sites-available/default***

***sudo systemctl reload nginx.service php8.1-fpm.service'***

### Premade AMI:

***aws ec2 run-instances \***

***--image-id ami-0f5d632c877652f68*** ***\***

***--instance-type t2.micro \***

***--key-name "ubuntu key pair"***