

# AWS - EXERCISE 1

## 1. Create a new EC2 instance. Name it "UbuntuDockerAWS".

### Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

Launch instance ▲

Migrate a server ↗

Launch instance

Launch instance from template on

### Name and tags [Info](#)

Name

UbuntuDockerAWS

[Add additional tags](#)

### ▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

vockey ▼

[↻ Create new key pair](#)

▼ Network settings Info

Edit

Network Info

vpc-0319a0fe077aa36dc

Subnet Info

No preference (Default subnet in any availability zone)

Auto-assign public IP Info

Enable

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-2' 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

☒ Allow HTTP traffic from the internet

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

⚠

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

×

▼ Summary

Number of instances Info

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...read more  
ami-00874d747dde814fa

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

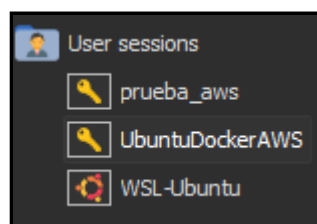
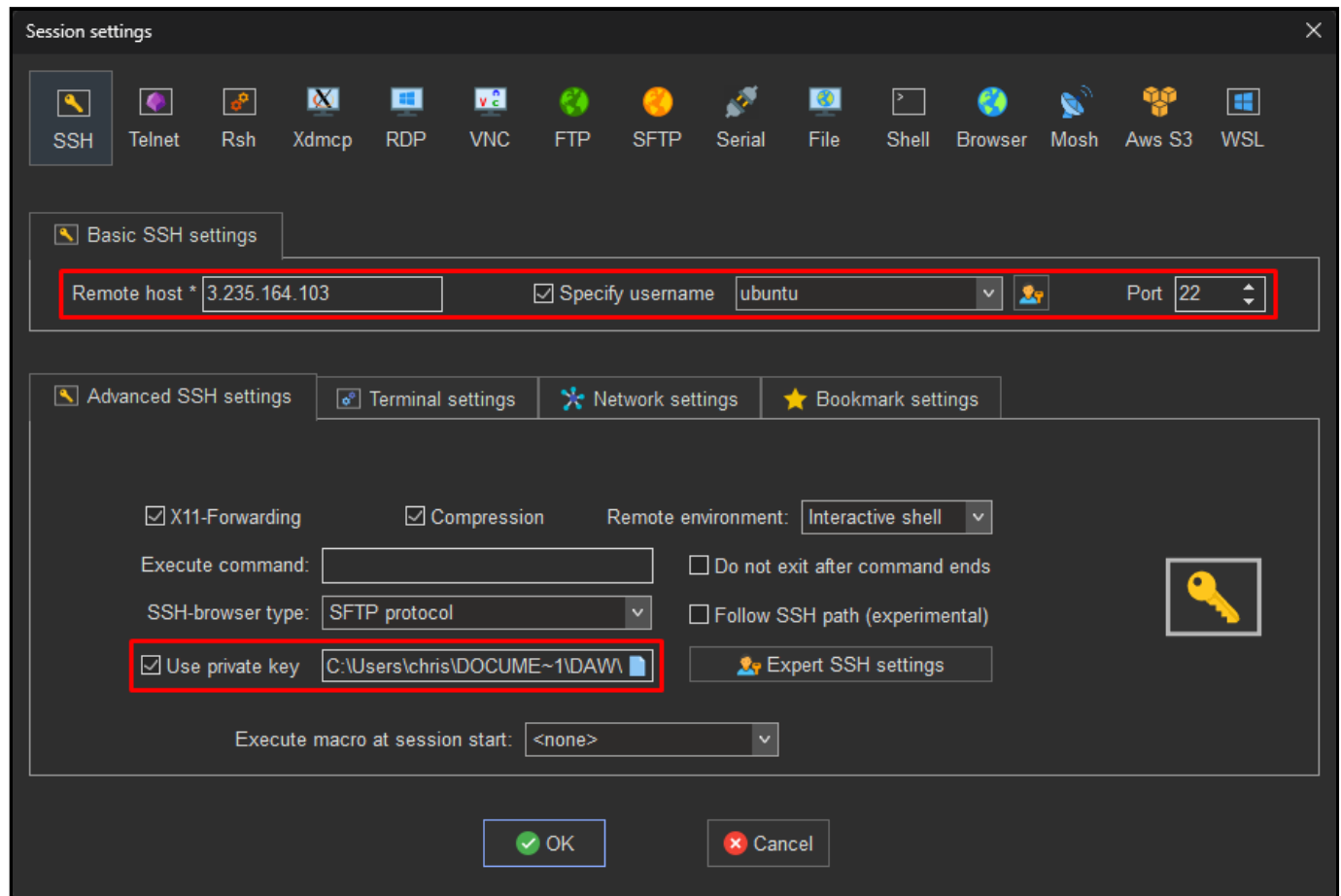
Cancel

Launch instance

## 2. Use this EC2 instance to do the following tasks:

### a. Access to this instance using SSH client. Create a new profile.

First, I create a new session and configure it to use my new instance's host and the default user "ubuntu". Also, I downloaded the "PPK" file, since I configured it to use a vockey.



### b. Update the Ubuntu packages.

```
sudo apt update -y && sudo apt upgrade -y && sudo apt auto-remove -y
```

```

ubuntu@ip-172-31-11-232:~$ sudo apt update -y && sudo apt upgrade -y && sudo apt auto-remove -y
Hit:1 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [107 kB]
Get:4 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-universe amd64 Packages [14.1 MB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:6 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5802 kB]
Get:7 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [288 kB]
Get:8 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [874 kB]
Get:12 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [192 kB]
Get:13 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [13.2 kB]
Get:14 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [587 kB]
Get:15 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [90.9 kB]
Get:16 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [550 B]
Get:17 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [801 kB]
Get:18 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [144 kB]
Get:19 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [15.1 kB]
Get:20 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [9364 B]
Get:21 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [3168 B]
Get:22 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [450 B]
Get:23 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [40.7 kB]
Get:24 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [9800 B]
Get:25 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [116 B]
Get:26 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:27 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [19.5 kB]
Get:28 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [13.8 kB]
Get:29 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [392 B]
Get:30 http://us-east-1-ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:31 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [622 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [130 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [8184 B]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [550 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [84.7 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [556 B]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [639 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [97.9 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [11.3 kB]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [4960 B]
Get:41 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [996 B]
Get:42 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [240 B]
Fetched 254.7 MB in 4s (6250 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
33 packages can be upgraded. Run 'apt list --upgradable' to see them.
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
#
# News about significant security updates, features and services will
# appear here to raise awareness and perhaps tease r/r/linux :)
# Use 'pro config set apt_news=false' to hide this and future APT news.
#
The following packages have been kept back:

```

### c. Install Docker in this server.

```
sudo apt install docker.io
```

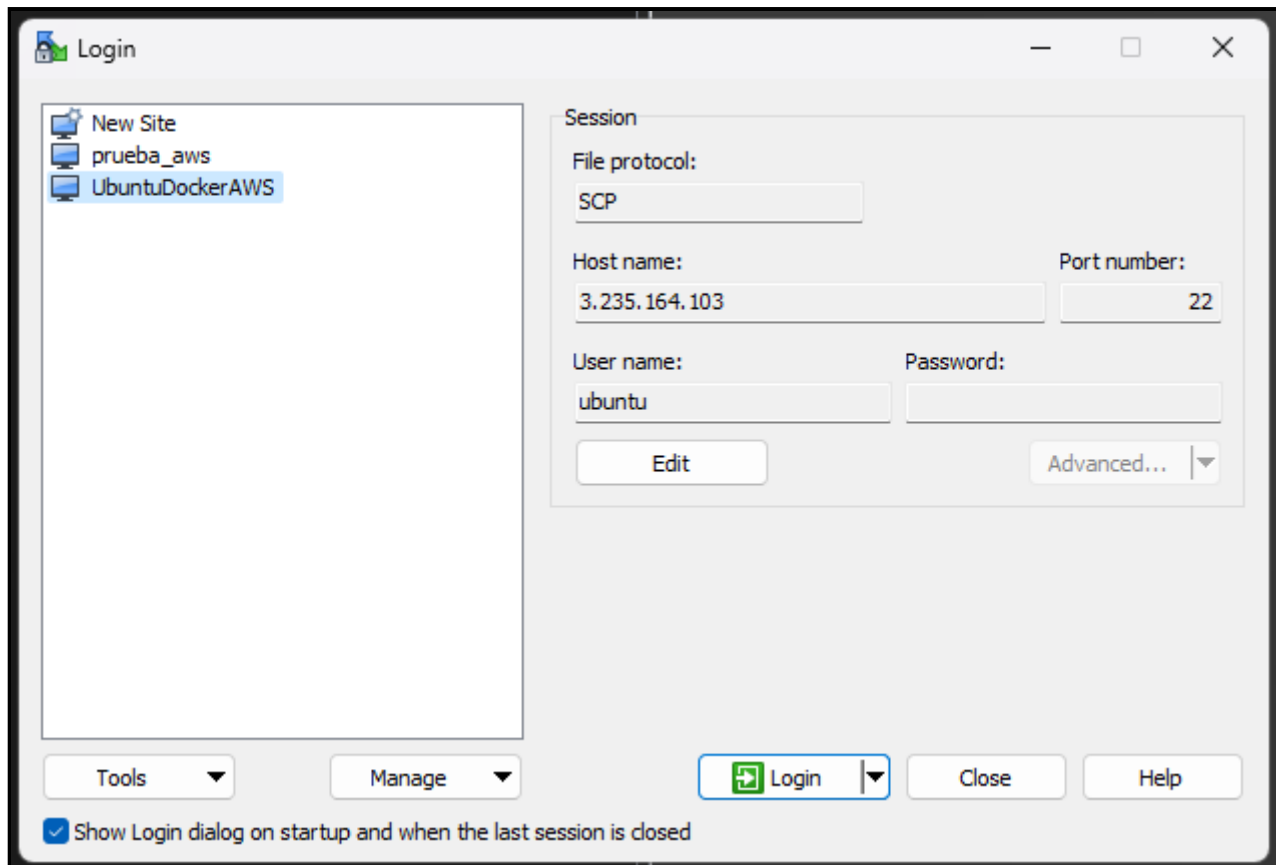
```

ubuntu@ip-172-31-11-232:~$ sudo apt install docker.io
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 6 not upgraded.
Need to get 66.8 MB of archives.
After this operation, 287 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.0-0ubuntu1.1 [4242 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.5.9-0ubuntu3.1 [28.1 MB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 dns-root-data all 2021011101 [5256 B]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dnsmasq-base amd64 2.86-1.1ubuntu0.1 [354 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 docker.io amd64 20.10.12-0ubuntu4 [34.0 MB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 66.8 MB in 2s (40.3 MB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 63571 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.6-1_amd64.deb ...
Unpacking pigz (2.6-1) ...
Selecting previously unselected package bridge-utils.
Preparing to unpack .../1-bridge-utils_1.7-1ubuntu3_amd64.deb ...
Unpacking bridge-utils (1.7-1ubuntu3) ...
Selecting previously unselected package runc.
Preparing to unpack .../2-runc_1.1.0-0ubuntu1.1_amd64.deb ...
Unpacking runc (1.1.0-0ubuntu1.1) ...
Selecting previously unselected package containerd.
Preparing to unpack .../3-containerd_1.5.9-0ubuntu3.1_amd64.deb ...
Unpacking containerd (1.5.9-0ubuntu3.1) ...
Selecting previously unselected package dns-root-data.
Preparing to unpack .../4-dns-root-data_2021011101_all.deb ...
Unpacking dns-root-data (2021011101) ...
Selecting previously unselected package dnsmasq-base.
Preparing to unpack .../5-dnsmasq-base_2.86-1.1ubuntu0.1_amd64.deb ...
Unpacking dnsmasq-base (2.86-1.1ubuntu0.1) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../6-docker.io_20.10.12-0ubuntu4_amd64.deb ...
Unpacking docker.io (20.10.12-0ubuntu4) ...
Selecting previously unselected package ubuntu-fan.
Preparing to unpack .../7-ubuntu-fan_0.12.16_all.deb ...
Unpacking ubuntu-fan (0.12.16) ...
Setting up dnsmasq-base (2.86-1.1ubuntu0.1) ...
Setting up runc (1.1.0-0ubuntu1.1) ...
Setting up dns-root-data (2021011101) ...
Setting up bridge-utils (1.7-1ubuntu3) ...
Setting up pigz (2.6-1) ...
Setting up containerd (1.5.9-0ubuntu3.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /lib/systemd/system/containerd.service.

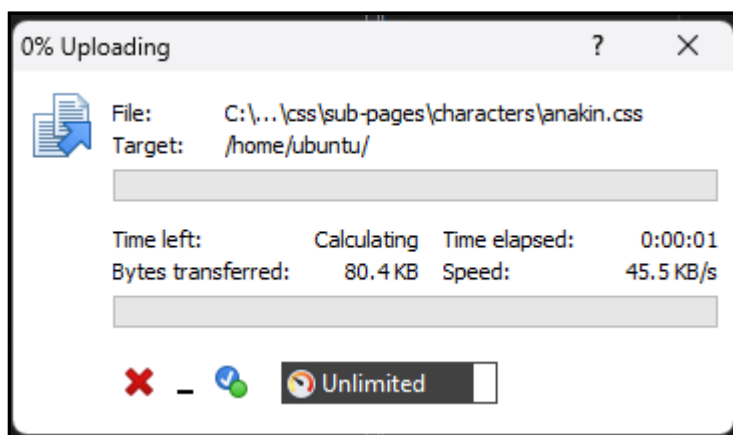
```

#### d. Use WinSCP to transfer the content of a static web page to home directory.

I create a new SCP connection with the host in WinSCP.



And now I can transfer my static project to the server home directory.

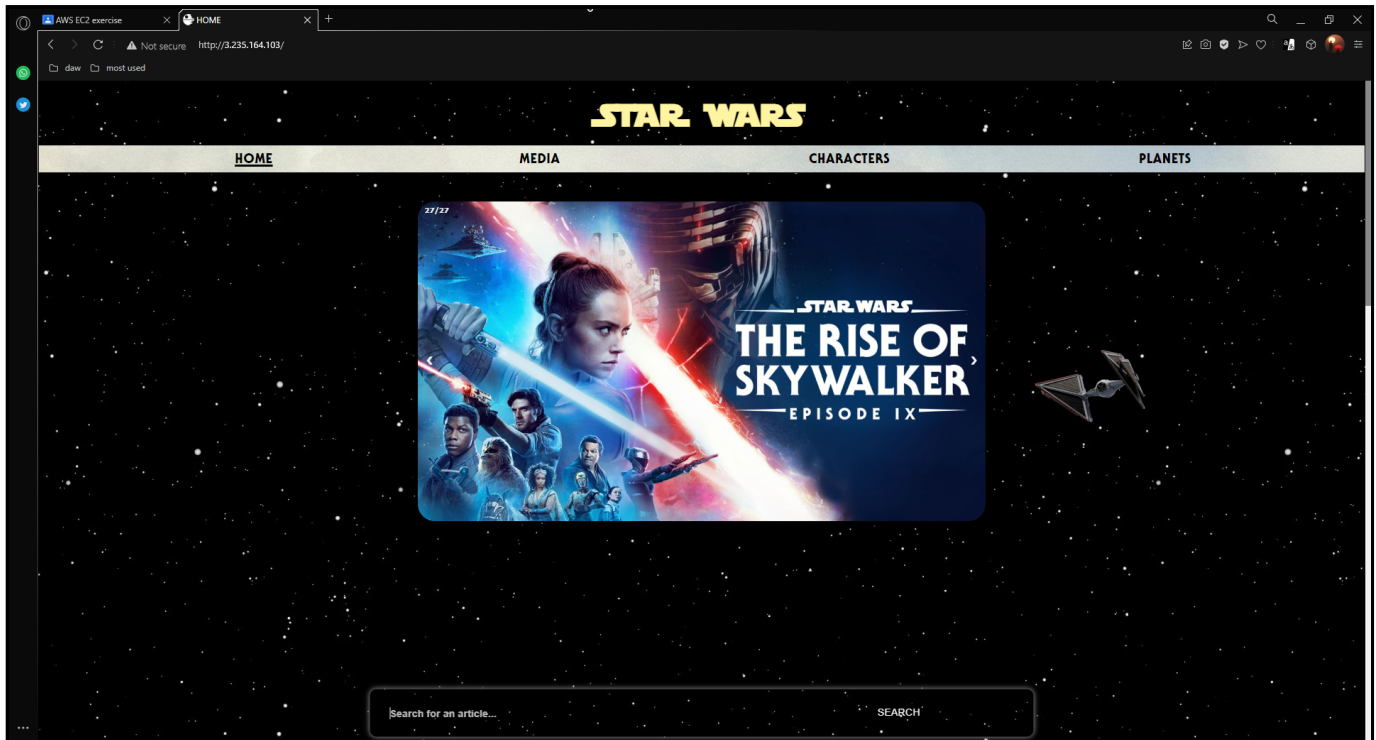


**e. Run a "nginx:1.22.1" docker to publish this static web page (port 80).**

```
sudo docker run -d -p 80:80 -v ~/fin_1er_trimestre:/usr/share/nginx/html
nginx:1.22.1
```

```
ubuntu@ip-172-31-11-232:~$ sudo docker run -d -p 80:80 -v ~/fin_1er_trimestre:/usr/share/nginx/html nginx:1.22.1
Unable to find image 'nginx:1.22.1' locally
1.22.1: Pulling from library/nginx
bb263680fed1: Pull complete
c13df232596d: Pull complete
2b1f6cfd11a1: Pull complete
cef27009be5d: Pull complete
9317a4486630: Pull complete
023932eaae7e: Pull complete
Digest: sha256:6b9d1c6e9826964d65710927416b526ec5939545e66ad42326ccb338880f2c5d
Status: Downloaded newer image for nginx:1.22.1
00e308bf23a5d4e5731d1f58345314df83074606ce599cdfc3c8ea476e37256
```

It is now possible to visit "3.235.164.103:80" and visit the page, located on the docker nginx server.



### 3. Now consider you are not using Windows but an Ubuntu console:

#### a. Access to previous "UbuntuDockerAWS" EC2 instance.

To be able to do this, I first need to download the "PEM" vockey file for the instance.

```
chmod 400 labsuser.pem
```

```
christian@christianms13:/mnt/c/Users/chris/Documents/DAW/.extra/aws_ej1$ chmod 400 labsuser.pem
christian@christianms13:/mnt/c/Users/chris/Documents/DAW/.extra/aws_ej1$ ls -la
total 8
drwxrwxrwx 1 christian christian 512 Feb  9 17:57 
drwxrwxrwx 1 christian christian 512 Feb  9 17:24 
-r-xr-xr-x 1 christian christian 1678 Feb  9 17:57 labsuser.pem
-rwxrwxrwx 1 christian christian 1438 Feb  9 17:24 labsuser.ppk
```

Once I have this file, I need to change it's permissions:

```
ssh -i "labsuser.pem" ubuntu@ec2-3-235-164-103.compute-1.amazonaws.com
```

