

## EC2-Assignment---1

**Problem Statement:** You work for XYZ Corporation. Your corporation wants to launch a new web-based application using AWS Virtual Machines. Configure the resources accordingly for the tasks.

### Tasks To Be Performed:

1. Create an instance in the US-East-1 (N. Virginia) region with an Ubuntu OS and install Nginx for making them web servers.
2. Change the default website with a page displaying the message: “Hello World”

### ANSWER:

1. An Ubuntu Ec2 instance created in Us-east-1 region

The screenshot displays the AWS Management Console interface for an EC2 instance. The instance is named 'ubuntu-nginx' and is in the 'Running' state. It is located in the 'us-east-1' region. The instance type is 't2.micro'. The public IPv4 address is '107.20.83.55'. The instance is running on the 'ec2-107-20-83-55.compute-1.amazonaws.com' public IP. The instance is associated with the 'vpc-0cc7f12f99a9d7686' VPC and the 'subnet-0759728e5e9dd5fbd' subnet. The instance is associated with the 'iam-role-0759728e5e9dd5fbd' IAM role. The instance is associated with the 'sg-0c17d90cf454dd637' security group. The instance is associated with the 'elastic-ip-0759728e5e9dd5fbd' elastic IP.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
ubuntu-nginx	i-0f31166a6aad0a92	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-107-20-83-55.com...	107.20.83.55	-

**Instance: i-0f31166a6aad0a92 (ubuntu-nginx)**

**Details** | Status and alarms | Monitoring | Security | Networking | Storage | Tags

**Instance summary**

Instance ID: i-0f31166a6aad0a92 (ubuntu-nginx)

IPV6 address: -

Hostname type: IP name: ip-172-31-42-124.ec2.internal

Answer private resource DNS name: IPV4 (A)

Auto-assigned IP address: 107.20.83.55 [Public IP]

IAM Role: -

IMDSv2: Required

Public IPv4 address: 107.20.83.55 [open address]

Instance state: Running

Private IP DNS name (IPv4 only): ip-172-31-42-124.ec2.internal

Instance type: t2.micro

VPC ID: vpc-0cc7f12f99a9d7686

Subnet ID: subnet-0759728e5e9dd5fbd

Private IPv4 addresses: 172.31.42.124

Public IPv4 DNS: ec2-107-20-83-55.compute-1.amazonaws.com [open address]

Elastic IP addresses: -

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. [Learn more]

Auto Scaling Group name: -

- a. Update Security Group Inbound rules

The screenshot displays the AWS Management Console interface for a Security Group. The security group is named 'sg-0c17d90cf454dd637' and is associated with the 'launch-wizard-1' VPC. The security group is associated with the 'vpc-0cc7f12f99a9d7686' VPC. The security group is associated with the 'iam-role-0759728e5e9dd5fbd' IAM role. The security group is associated with the 'elastic-ip-0759728e5e9dd5fbd' elastic IP.

**sg-0c17d90cf454dd637 - launch-wizard-1**

**Details**

Security group name: launch-wizard-1

Security group ID: sg-0c17d90cf454dd637

Description: launch-wizard-1 created 2024-01-27T14:55:49.911Z

VPC ID: vpc-0cc7f12f99a9d7686

Owner: 590184123293

Inbound rules count: 3 Permission entries

Outbound rules count: 1 Permission entry

**Inbound rules** | Outbound rules | Tags

**Inbound rules (3)**

Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
-	sgr-0422a0007e0ec08fc	IPv4	SSH	TCP	22	0.0.0.0/0	-
-	sgr-0601e475778deb...	IPv4	HTTP	TCP	80	0.0.0.0/0	-
-	sgr-07da2c81980e046...	IPv4	HTTPS	TCP	443	0.0.0.0/0	-

## b. Installed nginx webserver

```
Setting up libnginx-mod-http-xslt-filter (1.18.0-6ubuntu14.4) ...
Setting up fontconfig-config (2.37-2ubuntu1) ...
Setting up libjpeg-turboamd64 (2.1.2-0ubuntu1) ...
Setting up libwebp7amd64 (1.2.2-0ubuntu0.22.04.2) ...
Setting up libnginx-mod-http-gzip (1.18.0-6ubuntu14.4) ...
Setting up libjpeg8amd64 (8c-2ubuntu10) ...
Setting up libnginx-mod-mail (1.18.0-6ubuntu14.4) ...
Setting up fontconfig (2.13.1-4.2ubuntu5) ...
Setting up libnginx-mod-stream (1.18.0-6ubuntu14.4) ...
Setting up libtiff5amd64 (4.3.0-6ubuntu0.7) ...
Setting up libfontconfig1amd64 (2.13.1-4.2ubuntu5) ...
Setting up libnginx-mod-stream-gzip (1.18.0-6ubuntu14.4) ...
Setting up libgd3amd64 (2.3.0-2ubuntu2) ...
Setting up libnginx-mod-http-image-filter (1.18.0-6ubuntu14.4) ...
Setting up nginx-core (1.18.0-6ubuntu14.4) ...
* Upgrading binary nginx
Setting up nginx (1.18.0-6ubuntu14.4) ...
Processing triggers for ufw (0.36.1-4ubuntu0.1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.4) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-42-124:~$ nginx -v
nginx version: nginx/1.18.0 (Ubuntu)
ubuntu@ip-172-31-42-124:~$ history
  1 sudo apt-get update
  2 sudo apt-get install nginx -y
  3 nginx -v
  4 history
ubuntu@ip-172-31-42-124:~$
```

## c. Default message displayed in the website



## d. Editing default configuration file

```
# Please see /usr/share/doc/nginx-doc/examples/ for more detailed examples.
#
# Default server configuration
#
server {
    listen 80 default_server;
    listen [::]:80 default_server;

    listen 443 ssl default_server;
    listen [::]:443 ssl default_server;

    # SSL configuration
    #
    # listen 443 ssl default_server;
    # listen [::]:443 ssl default_server;
    #
    # Note: You should disable gzip for SSL traffic.
    # See: https://bugs.debian.org/773332
    #
    # Read up on ssl_ciphers to ensure a secure configuration.
    # See: https://bugs.debian.org/765762
    #
    # Self signed certs generated by the ssl-cert package
    # Don't use them in a production server!
    #
    # include snippets/ssl-openssl.conf;

    root /var/www/html;

    # Add index.php to the list if you are using PHP
    #index index.html index.htm index.nginx-debian.html;
    index index.html index.htm index.nginx-bellowebb.html;

    server_name _;

    location / {
        # First attempt to serve request as file, then
        # as directory, then fall back to displaying a 404.
    }
}
```

## e. Created HTML file to display Hello World

```

# concurs with nginx's one
#
#location ~ /\.ht {
#    deny all;
#}

# Virtual Host configuration for example.com
#
# You can move that to a different file under sites-available/ and symlink that
# to sites-enabled/ to enable it.
#
#server {
#    listen 80;
#    listen [::]:80;
#
#    server_name example.com;
#
#    root /var/www/example.com;
#    index index.html;
#
#    location / {
#        try_files $uri $uri/ =404;
#    }
#}

ubuntu@ip-172-31-42-124:/etc/nginx/sites-available$ sudo vi default
ubuntu@ip-172-31-42-124:/etc/nginx/sites-available$ sudo nginx -t && sudo nginx -s reload
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
ubuntu@ip-172-31-42-124:/etc/nginx/sites-available$ cd /var/www/html
ubuntu@ip-172-31-42-124:/var/www/html$ vi index.nginx-helloweb.html
ubuntu@ip-172-31-42-124:/var/www/html$ sudo vi index.nginx-helloweb.html
ubuntu@ip-172-31-42-124:/var/www/html$ ls -l
total 8
-rw-r--r-- 1 root root 612 Jan 27 15:07 index.nginx-debian.html
-rw-r--r-- 1 root root 24 Jan 27 15:41 index.nginx-helloweb.html
ubuntu@ip-172-31-42-124:/var/www/html$ cat index.nginx-helloweb.html
<h1> Hello World! </h1>
ubuntu@ip-172-31-42-124:/var/www/html$

i-0f31166a6adcd0a92 (ubuntu-nginx)
PublicPks: 107.20.83.55 PrivatePks: 172.31.42.124
```

## f. The webpage displaying the required message “Hello World”



## COMMAND HISTORY:

```

ubuntu@ip-172-31-42-124:/var/www/html$ cat index.nginx-helloweb.html
<h1> Hello World! </h1>
ubuntu@ip-172-31-42-124:/var/www/html$ history
 1 sudo apt-get update
 2 sudo apt-get install nginx -y
 3 nginx -v
 4 history
 5 cd /var/www/html
 6 ls
 7 ls -l
 8 cd /etc
 9 ls
10 cd nginx
11 ls
12 cd sites-available/
13 ls
14 cat default
15 cd -
16 cd sites-enabled
17 ls
18 cat default
19 cd -
20 ls
21 cat nginx.conf
22 cd sites-available/
23 ls -l
24 sudo chmod 777 default
25 ls -l
26 sudo vi default
27 sudo nginx -t && sudo nginx -s reload
28 cat default
29 sudo vi default
30 sudo nginx -t && sudo nginx -s reload
31 cd /var/www/html
32 vi index.nginx-helloweb.html
33 sudo vi index.nginx-helloweb.html
34 ls -l
35 cat index.nginx-helloweb.html
36 history
ubuntu@ip-172-31-42-124:/var/www/html$

i-0f31166a6adcd0a92 (ubuntu-nginx)
PublicPks: 107.20.83.55 PrivatePks: 172.31.42.124
```