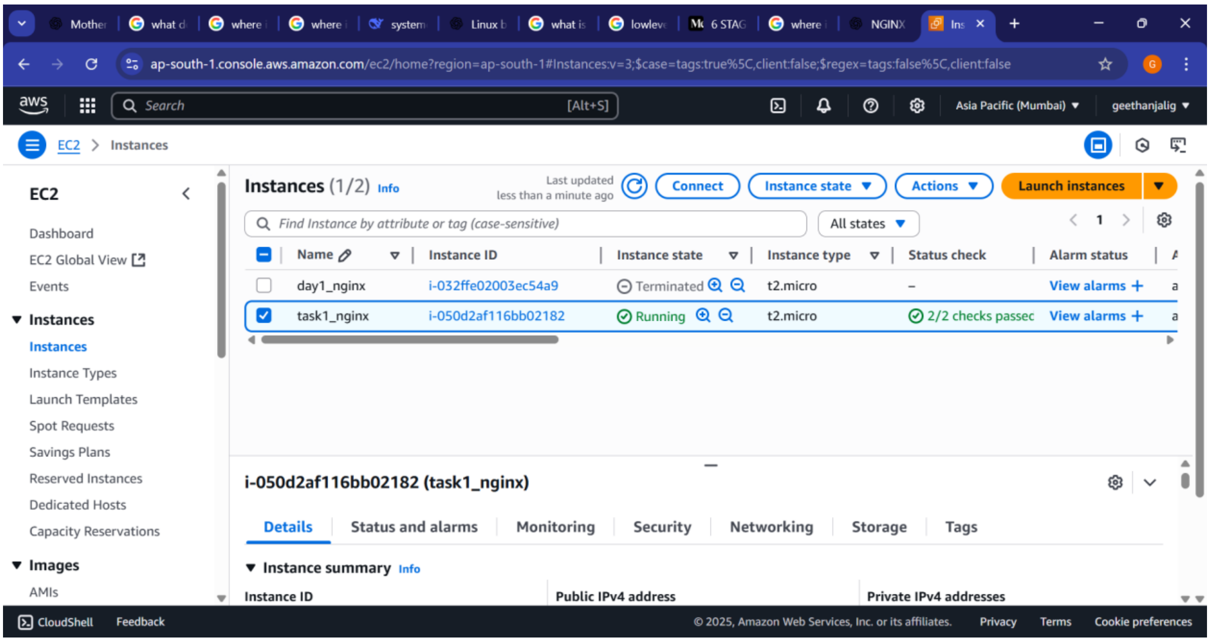
1.Install Nginx web server on your local machine
2. Host a simple website[index.html] in the default document root, by using Nginx web server.call the website using "firstnginx.test"
3.study in deep about nginx service, hosting types and default configurations in Nginx web server

ANSWER:

- Instance creation:



ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#Instances:v=3;$case=tags:true%5C,client:false;$regex=tags:false%5C,client:false

Instances (1/2)

Last updated less than a minute ago

☐	Name	Instance ID	Instance state	Instance type	Status check	Alarm status
☐	day1_nginx	i-032ffe02003ec54a9	Terminated	t2.micro	–	View alarms +
☑	task1_nginx	i-050d2af116bb02182	Running	t2.micro	2/2 checks passec	View alarms +

i-050d2af116bb02182 (task1_nginx)

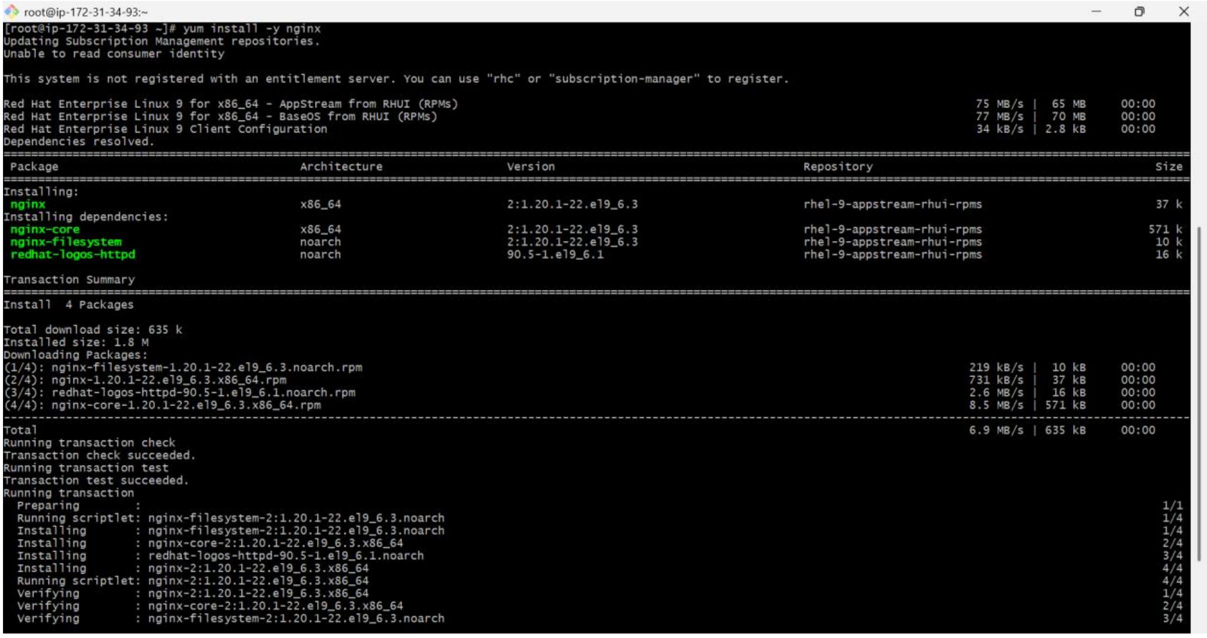
Instance summary

Instance ID

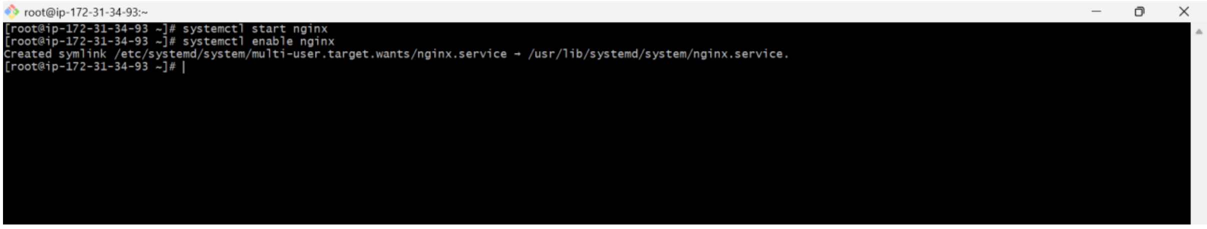
Public IPv4 address

Private IPv4 addresses

- Installing , starting and enabling the nginx service:

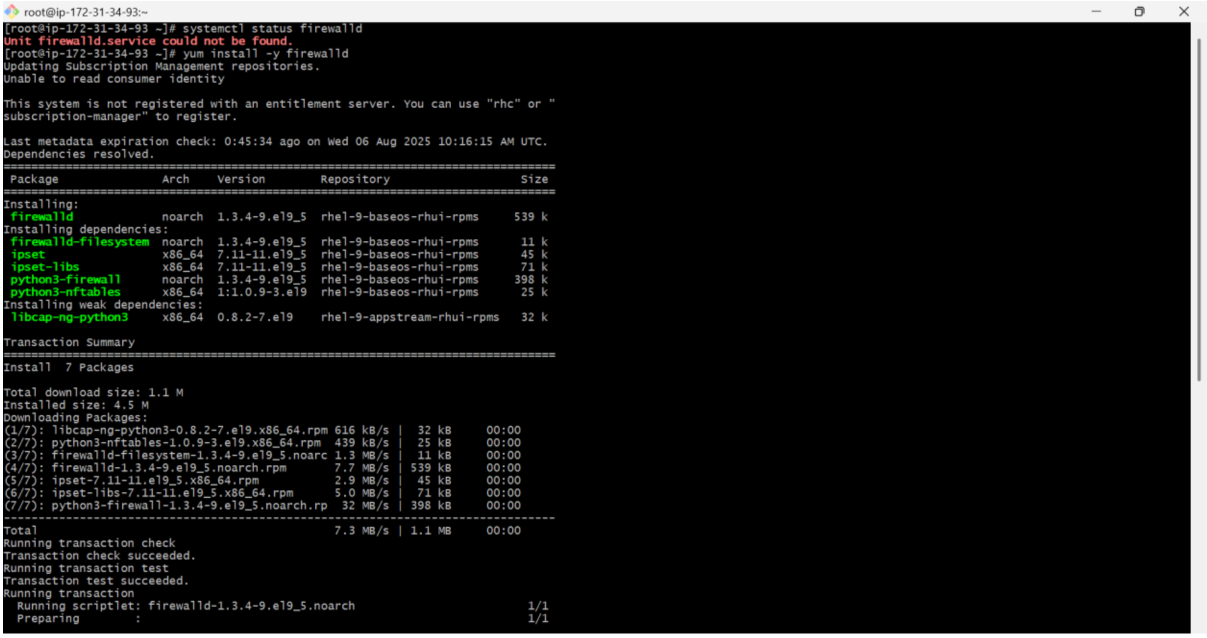


```
[root@ip-172-31-34-93 ~]# yum install -y nginx
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use "rhc" or "subscription-manager" to register.

Red Hat Enterprise Linux 9 for x86_64 - AppStream from RHUI (RPMs)                                                                           75 MB/s |  65 MB     00:00
Red Hat Enterprise Linux 9 for x86_64 - BaseOS from RHUI (RPMs)                                                                              77 MB/s |  70 MB     00:00
Red Hat Enterprise Linux 9 Client Configuration                                                                                              34 kB/s | 2.8 kB     00:00
Dependencies resolved.
===========================================================================================================================================================================
 Package                                   Architecture                  Version                                   Repository                                          Size
===========================================================================================================================================================================
Installing:
 nginx                                     x86_64                        2:1.20.1-22.el9_6.3                       rhel-9-appstream-rhui-rpms                          37 k
Installing dependencies:
 nginx-core                                x86_64                        2:1.20.1-22.el9_6.3                       rhel-9-appstream-rhui-rpms                         571 k
 nginx-filesystem                          noarch                        2:1.20.1-22.el9_6.3                       rhel-9-appstream-rhui-rpms                          10 k
 redhat-logos-httpd                        noarch                        90.5-1.el9_6.1                            rhel-9-appstream-rhui-rpms                          16 k

Transaction Summary
===========================================================================================================================================================================
Install  4 Packages

Total download size: 635 k
Installed size: 1.8 M
Downloading Packages:
(1/4): nginx-filesystem-1.20.1-22.el9_6.3.noarch.rpm                                                                                        219 kB/s |  10 kB     00:00
(2/4): nginx-1.20.1-22.el9_6.3.x86_64.rpm                                                                                                   731 kB/s |  37 kB     00:00
(3/4): redhat-logos-httpd-90.5-1.el9_6.1.noarch.rpm                                                                                         2.6 MB/s |  16 kB     00:00
(4/4): nginx-core-1.20.1-22.el9_6.3.x86_64.rpm                                                                                              8.5 MB/s | 571 kB     00:00
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------
Total                                                                                                                                       6.9 MB/s | 635 kB     00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing        :                                                                                                                                                    1/1
  Running scriptlet: nginx-filesystem-2:1.20.1-22.el9_6.3.noarch                                                                                                        1/4
  Installing       : nginx-filesystem-2:1.20.1-22.el9_6.3.noarch                                                                                                        1/4
  Installing       : nginx-core-2:1.20.1-22.el9_6.3.x86_64                                                                                                              2/4
  Installing       : redhat-logos-httpd-90.5-1.el9_6.1.noarch                                                                                                           3/4
  Installing       : nginx-2:1.20.1-22.el9_6.3.x86_64                                                                                                                   4/4
  Running scriptlet: nginx-2:1.20.1-22.el9_6.3.x86_64                                                                                                                   4/4
  Verifying        : nginx-2:1.20.1-22.el9_6.3.x86_64                                                                                                                   1/4
  Verifying        : nginx-core-2:1.20.1-22.el9_6.3.x86_64                                                                                                              2/4
  Verifying        : nginx-filesystem-2:1.20.1-22.el9_6.3.noarch                                                                                                        3/4
```

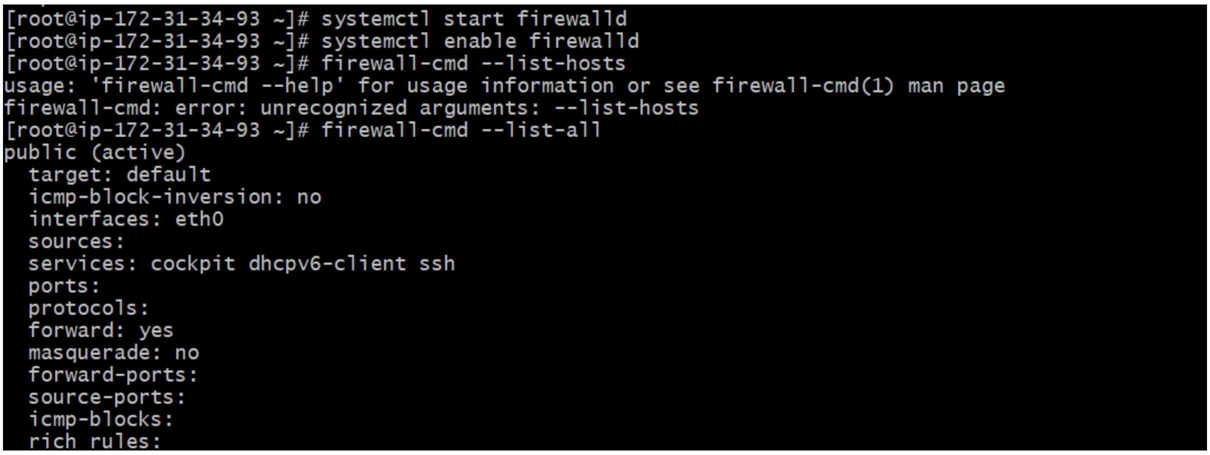


```
[root@ip-172-31-34-93 ~]# systemctl start nginx
[root@ip-172-31-34-93 ~]# systemctl enable nginx
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /usr/lib/systemd/system/nginx.service.
[root@ip-172-31-34-93 ~]# |
```

- Installing, starting and enabling firewalld service

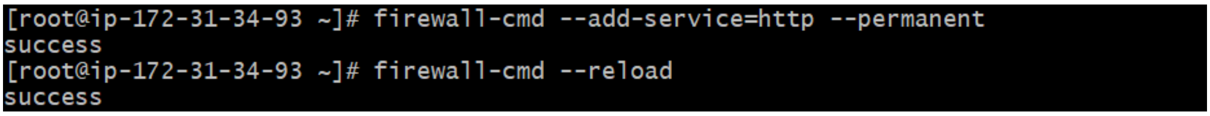


```
[root@ip-172-31-34-93 ~]# systemctl status firewalld
Unit firewalld.service could not be found.
[root@ip-172-31-34-93 ~]# yum install -y firewalld
Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use "rhc" or "
subscription-manager" to register.

Last metadata expiration check: 0:45:34 ago on Wed 06 Aug 2025 10:16:15 AM UTC.
Dependencies resolved.
================================================================================
 Package              Arch    Version        Repository                    Size
================================================================================
Installing:
 firewalld            noarch  1.3.4-9.el9_5  rhel-9-baseos-rhui-rpms      539 k
Installing dependencies:
 firewalld-filesystem noarch  1.3.4-9.el9_5  rhel-9-baseos-rhui-rpms       11 k
 ipset                x86_64  7.11-11.el9_5  rhel-9-baseos-rhui-rpms       45 k
 ipset-libs           x86_64  7.11-11.el9_5  rhel-9-baseos-rhui-rpms       71 k
 python3-firewall     noarch  1.3.4-9.el9_5  rhel-9-baseos-rhui-rpms      398 k
 python3-nftables     x86_64  1:1.0.9-3.el9  rhel-9-baseos-rhui-rpms       25 k
Installing weak dependencies:
 libcap-ng-python3    x86_64  0.8.2-7.el9    rhel-9-appstream-rhui-rpms   32 k

Transaction Summary
================================================================================
Install  7 Packages

Total download size: 1.1 M
Installed size: 4.5 M
Downloading Packages:
(1/7): libcap-ng-python3-0.8.2-7.el9.x86_64.rpm 616 kB/s |  32 kB     00:00
(2/7): python3-nftables-1.0.9-3.el9.x86_64.rpm  439 kB/s |  25 kB     00:00
(3/7): firewalld-filesystem-1.3.4-9.el9_5.noarc 1.3 MB/s |  11 kB     00:00
(4/7): firewalld-1.3.4-9.el9_5.noarch.rpm       7.7 MB/s | 539 kB     00:00
(5/7): ipset-7.11-11.el9_5.x86_64.rpm           2.9 MB/s |  45 kB     00:00
(6/7): ipset-libs-7.11-11.el9_5.x86_64.rpm      5.0 MB/s |  71 kB     00:00
(7/7): python3-firewall-1.3.4-9.el9_5.noarch.rp  32 MB/s | 398 kB     00:00
--------------------------------------------------------------------------------
Total                                           7.3 MB/s | 1.1 MB     00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Running scriptlet: firewalld-1.3.4-9.el9_5.noarch                         1/1
  Preparing        :                                                        1/1
```



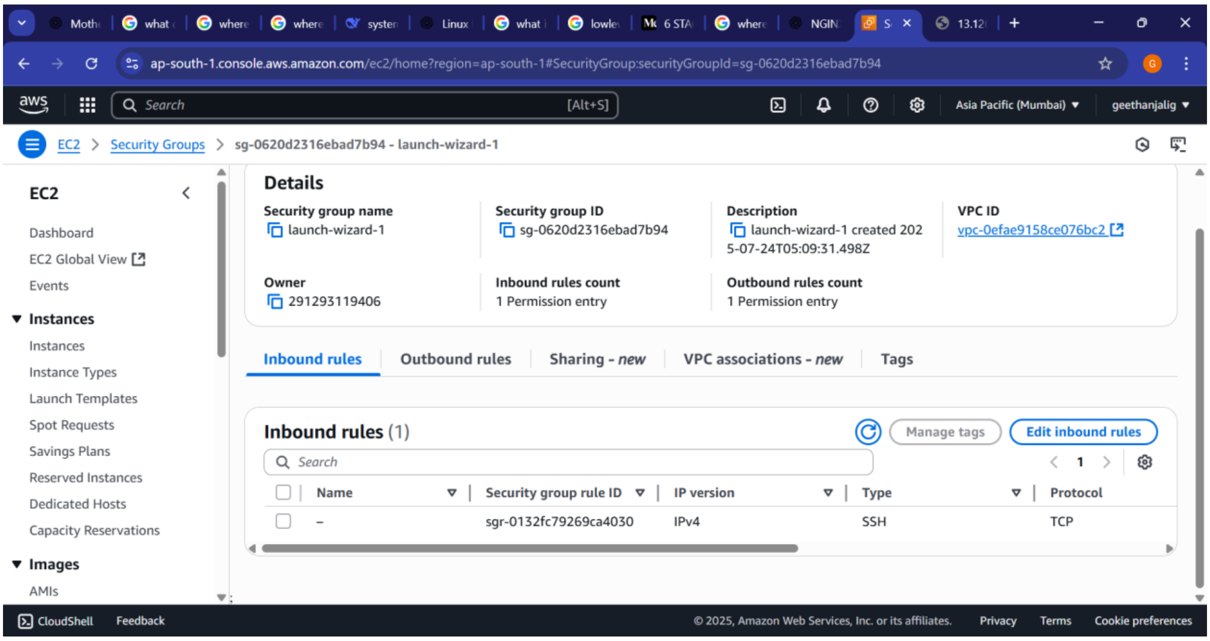
```
[root@ip-172-31-34-93 ~]# systemctl start firewalld
[root@ip-172-31-34-93 ~]# systemctl enable firewalld
[root@ip-172-31-34-93 ~]# firewall-cmd --list-hosts
usage: 'firewall-cmd --help' for usage information or see firewall-cmd(1) man page
firewall-cmd: error: unrecognized arguments: --list-hosts
[root@ip-172-31-34-93 ~]# firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: eth0
  sources:
  services: cockpit dhcpv6-client ssh
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
```

- Allow http traffic through firewall



```
[root@ip-172-31-34-93 ~]# firewall-cmd --add-service=http --permanent
success
[root@ip-172-31-34-93 ~]# firewall-cmd --reload
success
```

- Adding http to the security group



ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#SecurityGroup:securityGroupId=sg-0620d2316ebad7b94

EC2 > Security Groups > sg-0620d2316ebad7b94 - launch-wizard-1

Details

Security group name: launch-wizard-1

Security group ID: sg-0620d2316ebad7b94

Description: launch-wizard-1 created 2025-07-24T05:09:31.498Z

VPC ID: vpc-0efae9158ce076bc2

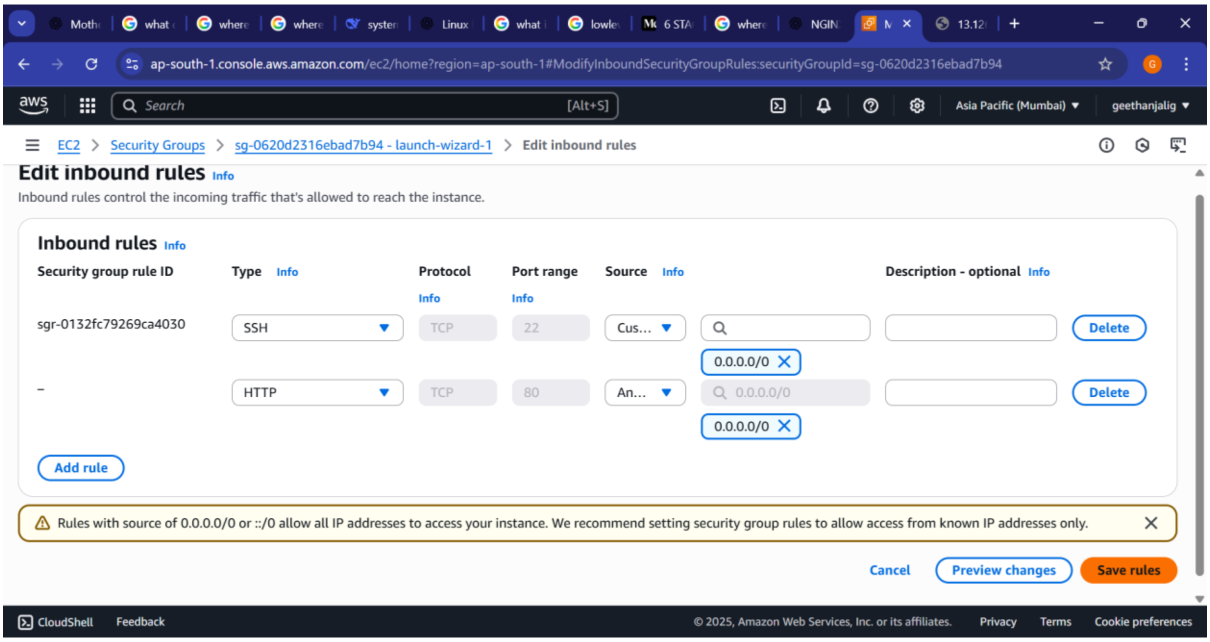
Owner: 291293119406

Inbound rules count: 1 Permission entry

Outbound rules count: 1 Permission entry

Inbound rules (1)

Name	Security group rule ID	IP version	Type	Protocol
–	sgr-0132fc79269ca4030	IPv4	SSH	TCP



ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#ModifyInboundSecurityGroupRules:securityGroupId=sg-0620d2316ebad7b94

EC2 > Security Groups > sg-0620d2316ebad7b94 - launch-wizard-1 > Edit inbound rules

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

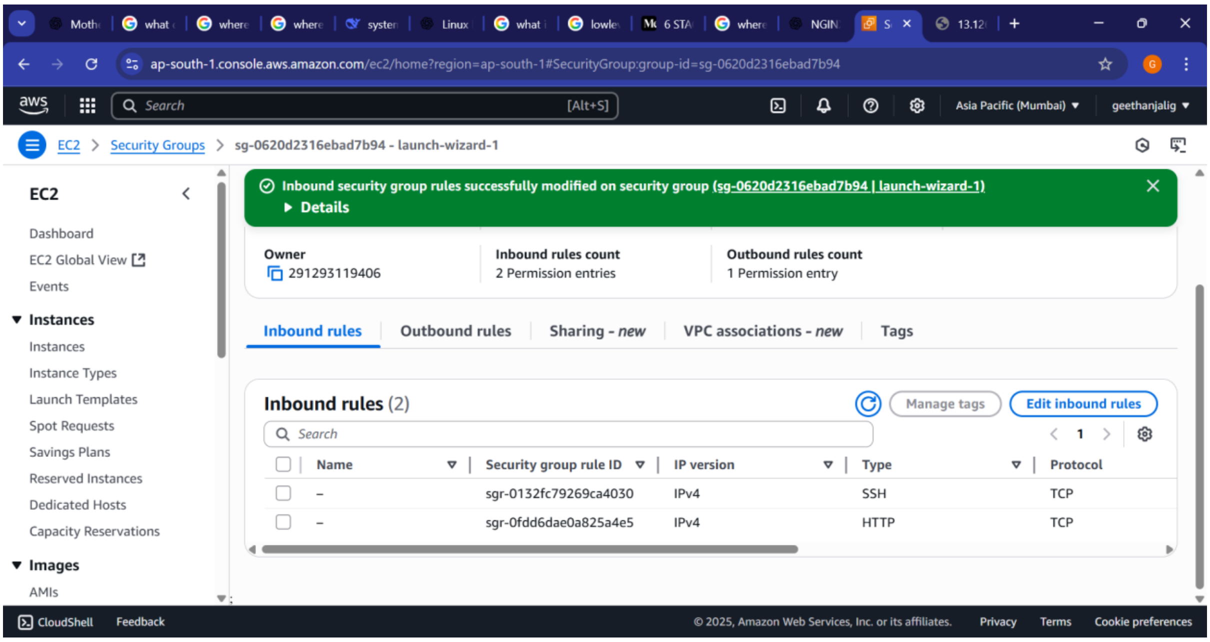
Inbound rules Info

Security group rule ID	Type Info	Protocol Info	Port range Info	Source Info		Description - optional Info	
sgr-0132fc79269ca4030	SSH	TCP	22	Cus...	0.0.0.0/0		Delete
–	HTTP	TCP	80	An...	0.0.0.0/0		Delete

Add rule

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

Cancel | Preview changes | Save rules



ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#SecurityGroup:group-id=sg-0620d2316ebad7b94

EC2 > Security Groups > sg-0620d2316ebad7b94 - launch-wizard-1

✓ Inbound security group rules successfully modified on security group (sg-0620d2316ebad7b94 | launch-wizard-1)

▶ Details

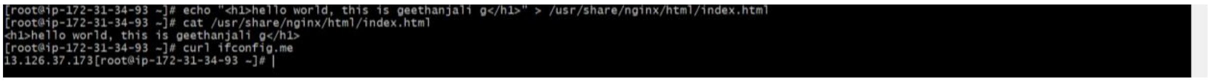
Owner	Inbound rules count	Outbound rules count
291293119406	2 Permission entries	1 Permission entry

Inbound rules | Outbound rules | Sharing - *new* | VPC associations - *new* | Tags

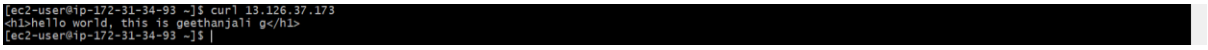
Inbound rules (2)

	Name	Security group rule ID	IP version	Type	Protocol
□	–	sgr-0132fc79269ca4030	IPv4	SSH	TCP
□	–	sgr-0fdd6dae0a825a4e5	IPv4	HTTP	TCP

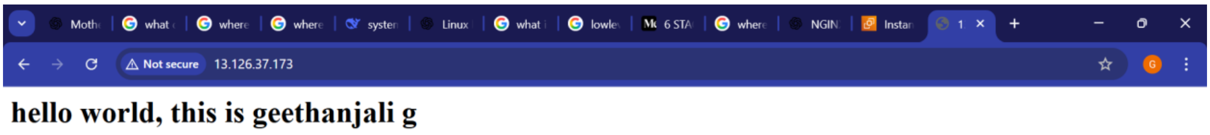
- Creating a website (index.html) under document root, /usr/share/nginx/html by using nginx web server



```
[root@ip-172-31-34-93 ~]# echo "<h1>hello world, this is geethanjali g</h1>" > /usr/share/nginx/html/index.html
[root@ip-172-31-34-93 ~]# cat /usr/share/nginx/html/index.html
<h1>hello world, this is geethanjali g</h1>
[root@ip-172-31-34-93 ~]# curl ifconfig.me
13.126.37.173[root@ip-172-31-34-93 ~]# |
```



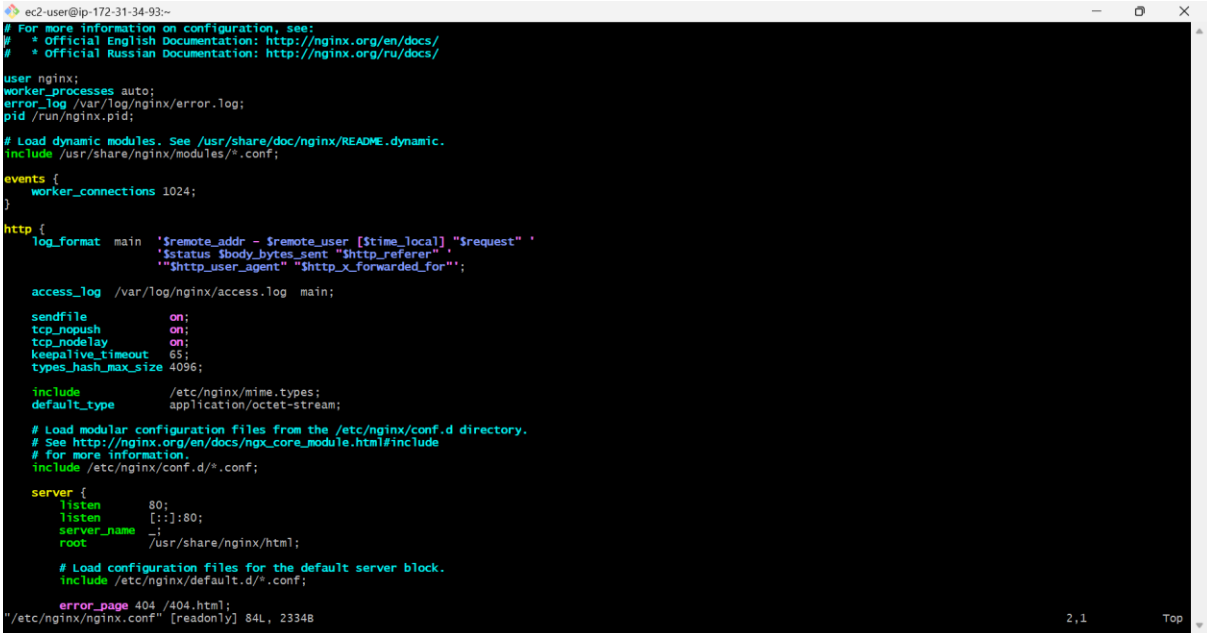
```
[ec2-user@ip-172-31-34-93 ~]$ curl 13.126.37.173
<h1>hello world, this is geethanjali g</h1>
[ec2-user@ip-172-31-34-93 ~]$ |
```



⚠ Not secure 13.126.37.173

hello world, this is geethanjali g

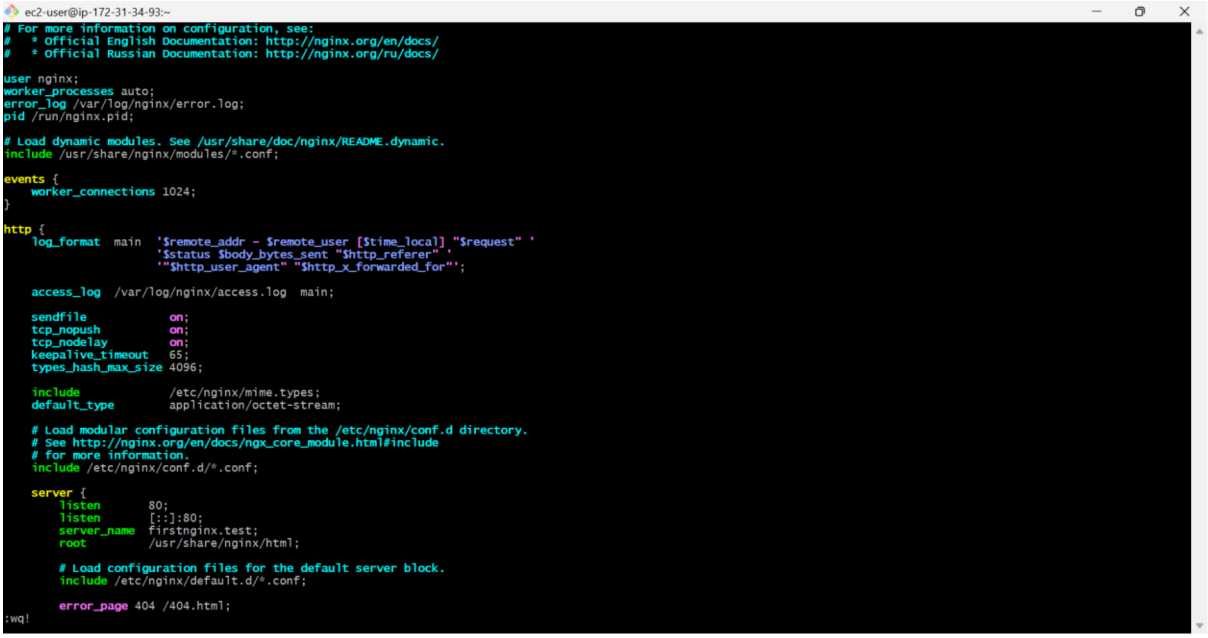
- Procedures to call the website using "firstnginx.test" are as follows:
    1. Edit config file /etc/nginx/nginx.conf and restart nginx. We specify the name,



ec2-user@ip-172-31-34-93:~

```
# For more information on configuration, see:
#   * Official English Documentation: http://nginx.org/en/docs/
#   * Official Russian Documentation: http://nginx.org/ru/docs/

user nginx;
worker_processes auto;
error_log /var/log/nginx/error.log;
pid /run/nginx.pid;

# Load dynamic modules. See /usr/share/doc/nginx/README.dynamic.
include /usr/share/nginx/modules/*.conf;

events {
    worker_connections 1024;
}

http {
    log_format  main  '$remote_addr - $remote_user [$time_local] "$request" '
                      '$status $body_bytes_sent "$http_referer" '
                      '"$http_user_agent" "$http_x_forwarded_for"';

    access_log  /var/log/nginx/access.log  main;

    sendfile            on;
    tcp_nopush          on;
    tcp_nodelay         on;
    keepalive_timeout   65;
    types_hash_max_size 4096;

    include             /etc/nginx/mime.types;
    default_type        application/octet-stream;

    # Load modular configuration files from the /etc/nginx/conf.d directory.
    # See http://nginx.org/en/docs/ngx_core_module.html#include
    # for more information.
    include /etc/nginx/conf.d/*.conf;

    server {
        listen       80;
        listen       [::]:80;
        server_name  _;
        root         /usr/share/nginx/html;

        # Load configuration files for the default server block.
        include /etc/nginx/default.d/*.conf;

        error_page 404 /404.html;
"/etc/nginx/nginx.conf" [readonly] 84L, 2334B                                                                    2,1           Top
```

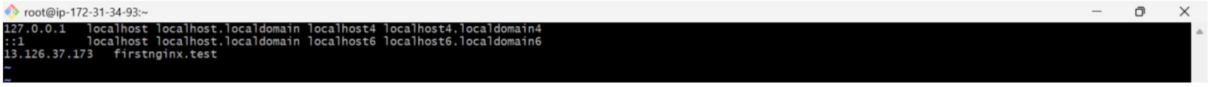
After:



ec2-user@ip-172-31-34-93:~

```
# For more information on configuration, see:
#   * Official English Documentation: http://nginx.org/en/docs/
#   * Official Russian Documentation: http://nginx.org/ru/docs/

user nginx;
worker_processes auto;
error_log /var/log/nginx/error.log;
pid /run/nginx.pid;

# Load dynamic modules. See /usr/share/doc/nginx/README.dynamic.
include /usr/share/nginx/modules/*.conf;

events {
    worker_connections 1024;
}

http {
    log_format  main  '$remote_addr - $remote_user [$time_local] "$request" '
                      '$status $body_bytes_sent "$http_referer" '
                      '"$http_user_agent" "$http_x_forwarded_for"';

    access_log  /var/log/nginx/access.log  main;

    sendfile            on;
    tcp_nopush          on;
    tcp_nodelay         on;
    keepalive_timeout   65;
    types_hash_max_size 4096;

    include             /etc/nginx/mime.types;
    default_type        application/octet-stream;

    # Load modular configuration files from the /etc/nginx/conf.d directory.
    # See http://nginx.org/en/docs/ngx_core_module.html#include
    # for more information.
    include /etc/nginx/conf.d/*.conf;

    server {
        listen       80;
        listen       [::]:80;
        server_name  firstnginx.test;
        root         /usr/share/nginx/html;

        # Load configuration files for the default server block.
        include /etc/nginx/default.d/*.conf;

        error_page 404 /404.html;
:wq!
```

2. Modify /etc/hosts using vim.
   #vim /etc/hosts

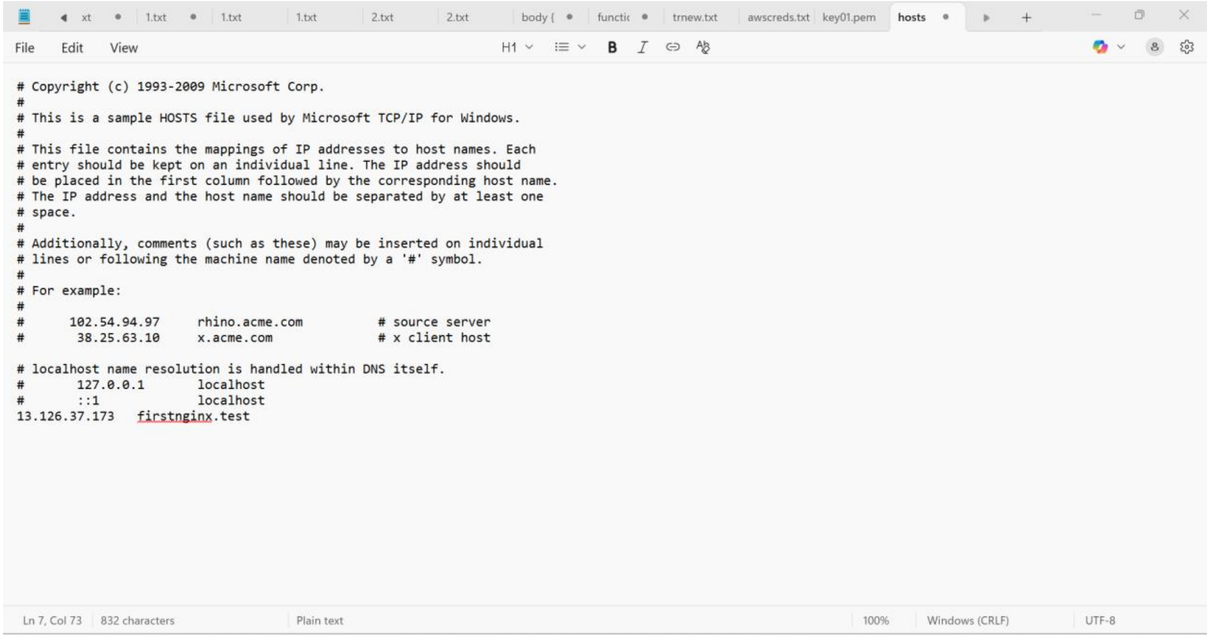


root@ip-172-31-34-93:~

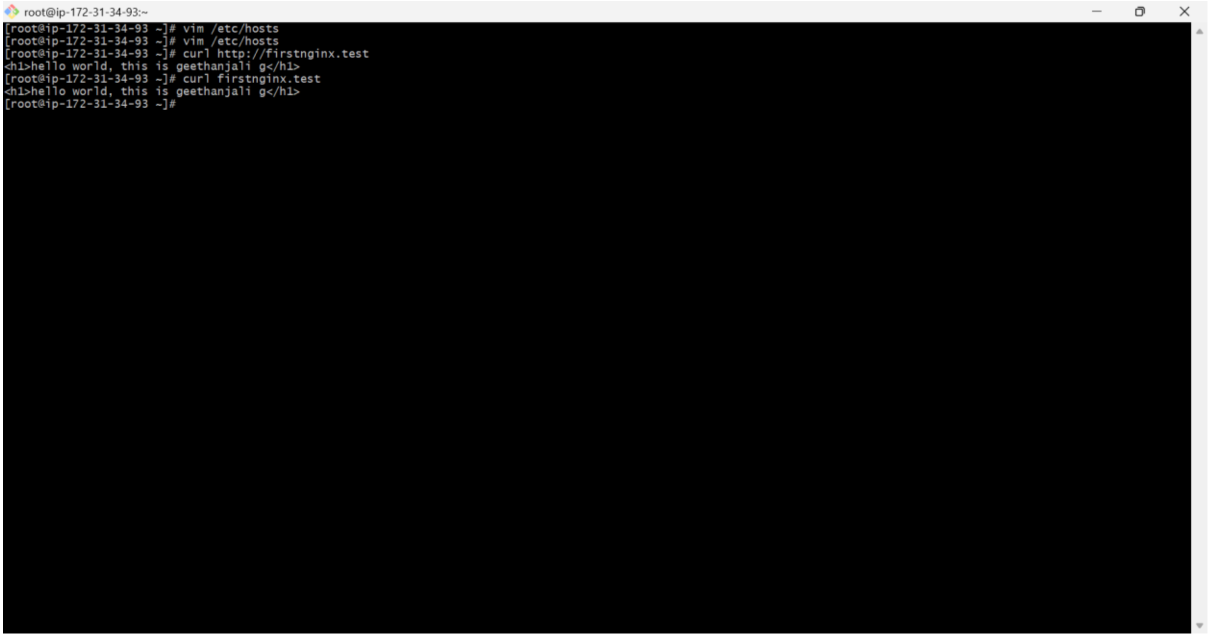
```
127.0.0.1   localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6
13.126.37.173   firstnginx.test
~
~
```

3. On your local computer do the following,
   Click Start → Search “Notepad” → Right-click → Run as Administrator.

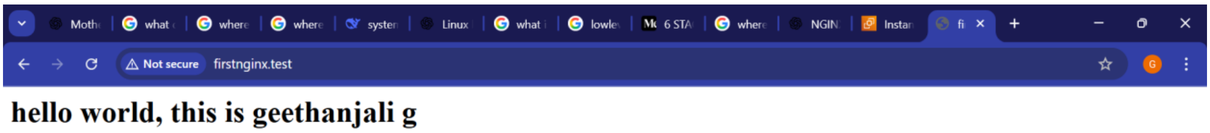
File → Open. Navigate to this path: C:\Windows\System32\drivers\etc. Select "All Files (.)" from the file type dropdown to see the hosts file. Under the hosts file,



```
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#      102.54.94.97     rhino.acme.com          # source server
#       38.25.63.10     x.acme.com              # x client host

# localhost name resolution is handled within DNS itself.
#       127.0.0.1       localhost
#       ::1             localhost
13.126.37.173   firstnginx.test
```



```
[root@ip-172-31-34-93 ~]# vim /etc/hosts
[root@ip-172-31-34-93 ~]# vim /etc/hosts
[root@ip-172-31-34-93 ~]# curl http://firstnginx.test
<h1>hello world, this is geethanjali g</h1>
[root@ip-172-31-34-93 ~]# curl firstnginx.test
<h1>hello world, this is geethanjali g</h1>
[root@ip-172-31-34-93 ~]#
```



hello world, this is geethanjali g