1. Install nginx and run nginx on port number 81.

   Yum install nginx to install nginx :

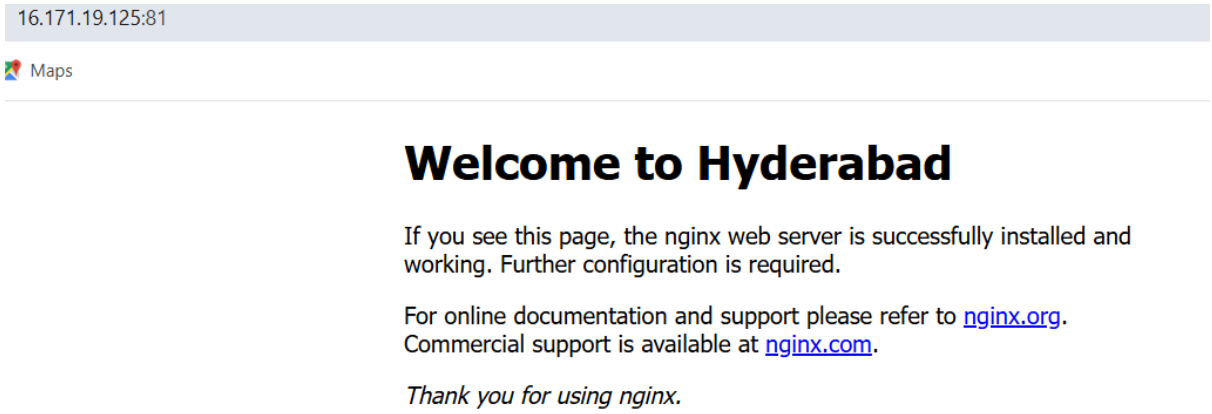
```
[root@ip-172-31-33-252 ~]# yum install nginx
Last metadata expiration check: 14:32:49 ago on Tue Sep  2 16:45:29 2025.
Package nginx-1:1.28.0-1.amzn2023.0.2.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-33-252 ~]#
```

   Find nginx.conf file and change to 81:

```
include /etc/nginx/conf.d/*.conf;

server {
    listen       81;
    listen       [::]:80;
    server_name  _;
    root         /usr/share/nginx/html;
```

   Use systemctl to start nginx:

```
[root@ip-172-31-33-252 ~]# systemctl start nginx
[root@ip-172-31-33-252 ~]# systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; disabled; preset: disabled)
     Active: active (running) since Wed 2025-09-03 07:23:18 UTC; 22s ago
    Process: 2367 ExecStartPre=/usr/bin/rm -f /run/nginx.pid (code=exited, status=0/SUCCESS)
    Process: 2371 ExecStartPre=/usr/sbin/nginx -t (code=exited, status=0/SUCCESS)
    Process: 2389 ExecStart=/usr/sbin/nginx (code=exited, status=0/SUCCESS)
   Main PID: 2401 (nginx)
      Tasks: 3 (limit: 1057)
     Memory: 4.9M
        CPU: 56ms
     CGroup: /system.slice/nginx.service
             ├─2401 "nginx: master process /usr/sbin/nginx"
             ├─2404 "nginx: worker process"
             └─2405 "nginx: worker process"
```

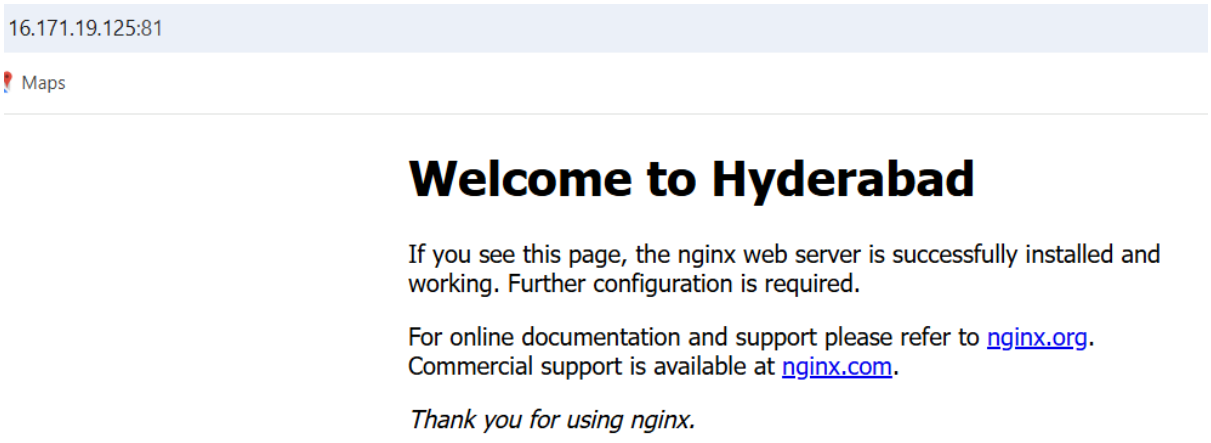


2.Deploy a sample index.html file on nginx.

Go to /usr/share/nginx/html/and create a file index.html and enter it and then restart nginx:

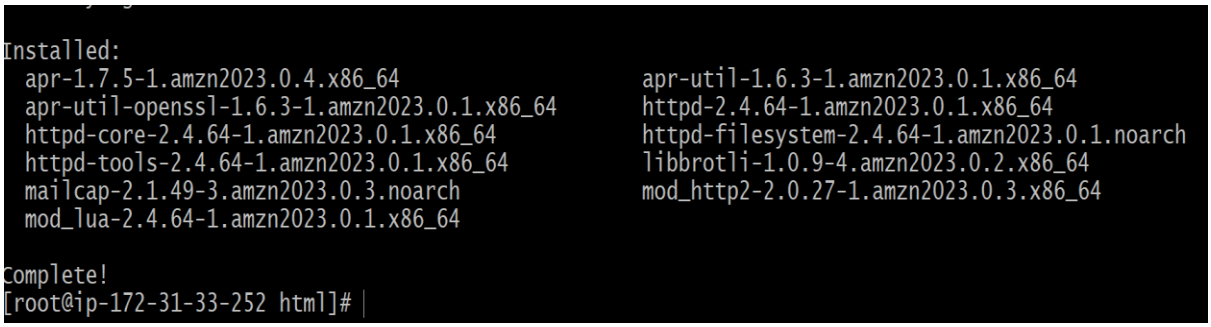
```
[root@ip-172-31-33-252 nginx]# cd /usr/share/nginx/html/
[root@ip-172-31-33-252 html]# vi index.html
```

```
<!DOCTYPE html>
<html>
<head>
<title>Welcome to Hyderabad</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
```

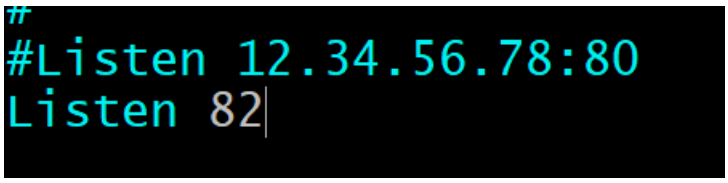


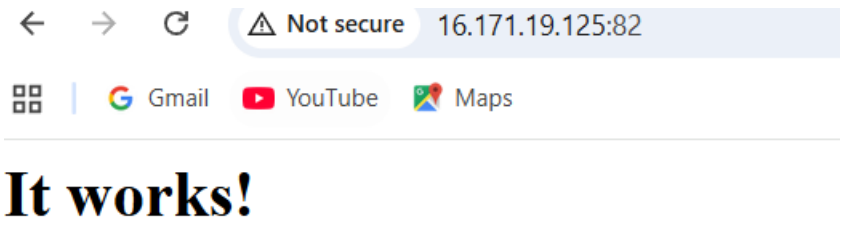
3. Install apache and run apache on port number 82.

   Use yum install httpd to install apache:



   Find httpd.conf file and change port to 81:

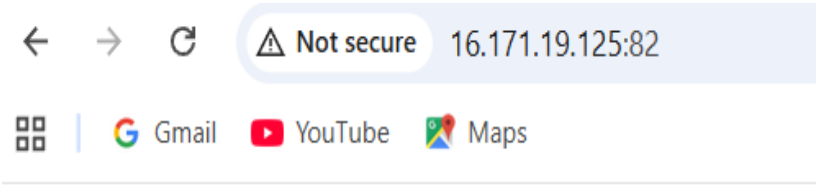




4. Deploy a sample index.html file on apache .

Go to /var/www/html/ and create index.html and add data:

```
[root@ip-172-31-33-252 httpd]# cd /var/www/html
[root@ip-172-31-33-252 html]# vi index.html
[root@ip-172-31-33-252 html]#
```



Hello World

5. Install apache tomcat on port number 8082.

   Install java:

```
[root@ip-172-31-33-252 ~]# sudo yum install java-11-amazon-corretto-devel
```

Do cd/opt

```
[root@ip-172-31-33-252 ~]# cd /opt/
```

Download tomcat9:

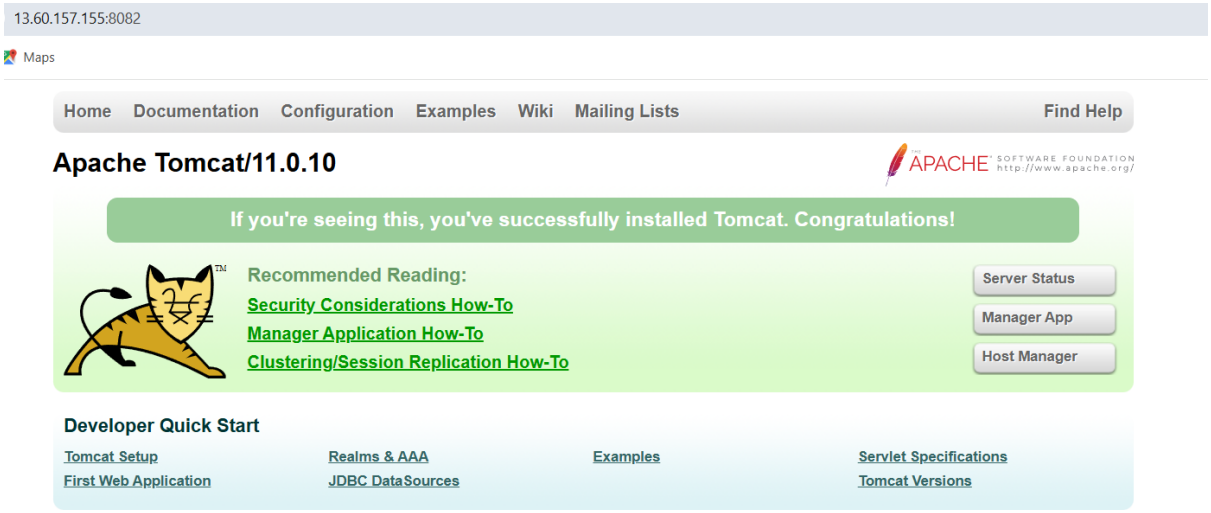
```
[root@ip-172-31-33-252 opt]# wget https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.10/bin/apache-tomcat-11.0.10.tar.gz
--2025-09-03 07:48:02--  https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.10/bin/apache-tomcat-11.0.10.tar.gz
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42::644
Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 14130534 (13M) [application/x-gzip]
Saving to: 'apache-tomcat-11.0.10.tar.gz'

apache-tomcat-11.0.10.tar.gz      100%[=============================================================>]  13.48M  --.-KB/s    in 0.

2025-09-03 07:48:02 (296 MB/s) - 'apache-tomcat-11.0.10.tar.gz' saved [14130534/14130534]

[root@ip-172-31-33-252 opt]#
```

Extract the tomcat file:

```
[root@ip-172-31-33-252 opt]# tar xvf apache-tomcat-11.0.10.tar.gz
```

Change the port number 8080 to 8082:

```
nnector port="8082" protocol="HTTP/1.1"
        connectionTimeout="20000"
        redirectPort="8443" />
- A "Connector" using the shared thread pool-->
-
nnector executor="tomcatThreadPool"
        port="8080" protocol="HTTP/1.1"
        connectionTimeout="20000"
        redirectPort="8443" />
```

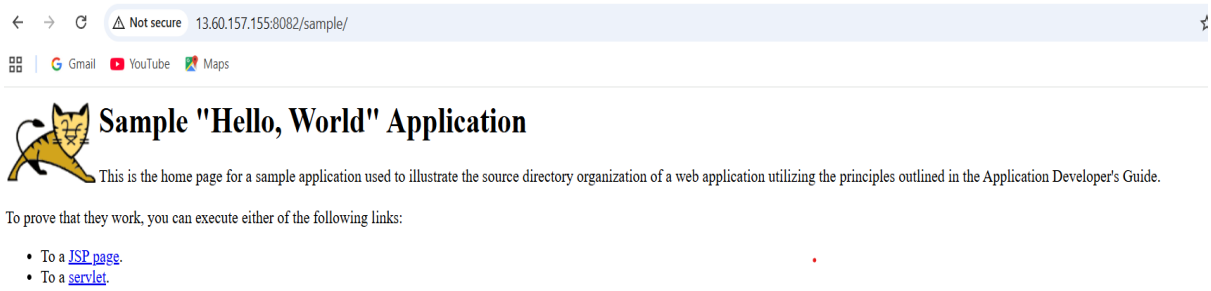


6. Deploy a sample app on web apps

Wget samplewar:

```
[root@ip-172-31-33-186 webapps]# wget https://tomcat.apache.org/tomcat-6.0-doc/appdev/sample/sample.war
```

Give 8082/sample to the URL



7 . Create a tomcat.service file for tomcat.

Download tomcat in opt /wget:

```
[root@ip-172-31-33-186 webapps]# cd /opt
[root@ip-172-31-33-186 opt]# wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.108/bin/apache-tomcat-9.0
.108.tar.gz
--2025-09-03 12:51:54--  https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.108/bin/apache-tomcat-9.0.108.tar.
gz
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42::644
Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 13028093 (12M) [application/x-gzip]
Saving to: 'apache-tomcat-9.0.108.tar.gz'

apache-tomcat-9.0.108.tar. 100%[===================================>]  12.42M  --.-KB/s    in 0.05s

2025-09-03 12:51:54 (252 MB/s) - 'apache-tomcat-9.0.108.tar.gz' saved [13028093/13028093]

[root@ip-172-31-33-186 opt]#
```

Extract/untar using tar xvf apache-tomcat-9.0.108.tar.gz and rename it to tomcat9

Change permissions to tomcat9 to chmod 777:

```
-rw-r--r--. 1 root root 14130534 Jul 31 17:02 apache-tomcat-11.0.10.tar.gz
drwxr-xr-x. 9 root root    16384 Sep  3 12:55 apache-tomcat-9.0.108
drwxr-xr-x. 4 root root       33 Aug 13 21:08 aws
drwxr-xr-x. 9 root root    16384 Sep  3 09:56 tomcat
-rw-r--r--. 1 root root 13028093 Jul 31 18:33 tomcat9
[root@ip-172-31-33-186 opt]# cd /opt/tomcat9
bash: cd: /opt/tomcat9: Not a directory
[root@ip-172-31-33-186 opt]# cd /tomcat9
bash: cd: /tomcat9: No such file or directory
[root@ip-172-31-33-186 opt]# chmod777 tomcat9
bash: chmod777: command not found
[root@ip-172-31-33-186 opt]# chmod 777 tomcat9
[root@ip-172-31-33-186 opt]# ll
total 26556
-rw-r--r--. 1 root root 14130534 Jul 31 17:02 apache-tomcat-11.0.10.tar.gz
drwxr-xr-x. 9 root root    16384 Sep  3 12:55 apache-tomcat-9.0.108
drwxr-xr-x. 4 root root       33 Aug 13 21:08 aws
drwxr-xr-x. 9 root root    16384 Sep  3 09:56 tomcat
-rwxrwxrwx. 1 root root 13028093 Jul 31 18:33 tomcat9
[root@ip-172-31-33-186 opt]#
```

Then create a service file/etc/systemd/system/tomcat.service

Next do the daemon-reload using systemctl:

```
[root@ip-172-31-33-186 bin]# systemctl daemon-reload
```

Next start the tomcat : systemctl start tomcat.service

Next check the status : systemctl status tomcat.service

```
[root@ip-172-31-33-186 bin]# systemctl start tomcat.service
[root@ip-172-31-33-186 bin]# systemctl status tomcat
● tomcat.service - Apache Tomcat 9.0.107 servlet Container
     Loaded: loaded (/etc/systemd/system/tomcat.service; disabled; preset: disabled)
     Active: active (running) since Wed 2025-09-03 14:23:58 UTC; 12s ago
    Process: 2460 ExecStart=/opt/tomcat/bin/startup.sh (code=exited, status=0/SUCCESS)
   Main PID: 2467 (java)
      Tasks: 30 (limit: 1057)
     Memory: 74.0M
        CPU: 3.770s
     CGroup: /system.slice/tomcat.service
             └─2467 /usr/lib/jvm/java-17-amazon-corretto/bin/java -Djava.util.logging.
```

```
[root@ip-172-31-33-186 bin]# systemctl stop tomcat
[root@ip-172-31-33-186 bin]# systemctl status tomcat
○ tomcat.service - Apache Tomcat 9.0.107 servlet Container
     Loaded: loaded (/etc/systemd/system/tomcat.service; disabled; preset: disabled)
     Active: inactive (dead)

Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal shutdown.sh[2560]: Tomcat stopped.
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: tomcat.service: Deactivated successfully.
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: Stopped tomcat.service - Apache Tomcat 9.0.1>
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: tomcat.service: Consumed 4.266s CPU time.
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: /etc/systemd/system/tomcat.service:10: Inval>
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: /etc/systemd/system/tomcat.service:15: Unkno>
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: /etc/systemd/system/tomcat.service:10: Inval>
```

root@ip-172-31-33-186:/opt/tomcat/bin

```
[root@ip-172-31-33-186 bin]# systemctl start tomcat.service
[root@ip-172-31-33-186 bin]# systemctl status tomcat
● tomcat.service - Apache Tomcat 9.0.107 servlet Container
     Loaded: loaded (/etc/systemd/system/tomcat.service; disabled; preset: disabled)
     Active: active (running) since Wed 2025-09-03 14:23:58 UTC; 12s ago
    Process: 2460 ExecStart=/opt/tomcat/bin/startup.sh (code=exited, status=0/SUCCESS)
   Main PID: 2467 (java)
      Tasks: 30 (limit: 1057)
     Memory: 74.0M
        CPU: 3.770s
     CGroup: /system.slice/tomcat.service
             └─2467 /usr/lib/jvm/java-17-amazon-corretto/bin/java -Djava.util.logging.config.file=/opt/tomcat/conf/lo>

Sep 03 14:23:58 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: Starting tomcat.service - Apache Tomcat 9.0.>
Sep 03 14:23:58 ip-172-31-33-186.eu-north-1.compute.internal startup.sh[2460]: Tomcat started.
Sep 03 14:23:58 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: Started tomcat.service - Apache Tomcat 9.0.1>

[root@ip-172-31-33-186 bin]# systemctl stop tomcat
[root@ip-172-31-33-186 bin]# systemctl status tomcat
○ tomcat.service - Apache Tomcat 9.0.107 servlet Container
     Loaded: loaded (/etc/systemd/system/tomcat.service; disabled; preset: disabled)
     Active: inactive (dead)

Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal shutdown.sh[2560]: Tomcat stopped.
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: tomcat.service: Deactivated successfully.
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: Stopped tomcat.service - Apache Tomcat 9.0.1>
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: tomcat.service: Consumed 4.266s CPU time.
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: /etc/systemd/system/tomcat.service:10: Inval>
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: /etc/systemd/system/tomcat.service:15: Unkno>
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: /etc/systemd/system/tomcat.service:10: Inval>
Sep 03 14:24:44 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: /etc/systemd/system/tomcat.service:15: Unkno>
Sep 03 14:24:48 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: /etc/systemd/system/tomcat.service:10: Inval>
Sep 03 14:24:48 ip-172-31-33-186.eu-north-1.compute.internal systemd[1]: /etc/systemd/system/tomcat.service:15: Unkno>
lines 1-14/14 (END)
```

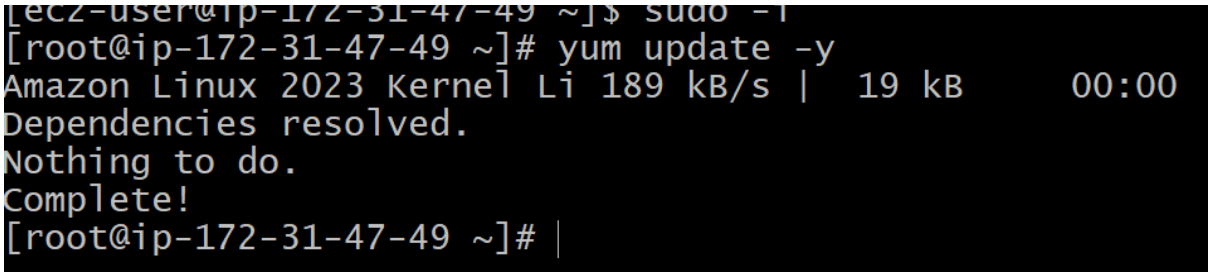
8 . Configure HA proxy server

Launch 3 ec2 instances name as Server-1, Server-2, HA-Proxy-Server:

Run following command to acess the server-1

ssh -i

yum update -y



Yum install httpd -y

```
[root@ip-172-31-47-49 ~]# yum install httpd -y
Last metadata expiration check: 0:02:30 ago on Fri Sep  5 14
:14:51 2025.
Dependencies resolved.
================================================================
 Package    Arch   Version                 Repository    Size
================================================================
Installing:
 httpd      x86_64 2.4.64-1.amzn2023.0.1  amazonlinux  47 k
Installing dependencies:
 apr        x86_64 1.7.5-1.amzn2023.0.4   amazonlinux 129 k
 apr-util   x86_64 1.6.3-1.amzn2023.0.1   amazonlinux  98 k
 generic-logos-httpd
            noarch 18.0.0-12.amzn2023.0.3 amazonlinux  19 k
 httpd-core x86_64 2.4.64-1.amzn2023.0.1  amazonlinux 1.4 M
 httpd-filesystem
            noarch 2.4.64-1.amzn2023.0.1  amazonlinux  13 k
 httpd-tools
            x86_64 2.4.64-1.amzn2023.0.1  amazonlinux  81 k
 libbrotli  x86_64 1.0.9-4.amzn2023.0.2   amazonlinux 315 k
 mailcap    noarch 2.1.49-3.amzn2023.0.3  amazonlinux  33 k
Installing weak dependencies:
 apr-util-openssl
            x86_64 1.6.3-1.amzn2023.0.1   amazonlinux  17 k
 mod_http2  x86_64 2.0.27-1.amzn2023.0.3  amazonlinux 166 k
 mod_lua    x86_64 2.4.64-1.amzn2023.0.1  amazonlinux  60 k
```

```
  Installing       : generic-logos-httpd-18.0.0-12.    11/12
  Installing       : httpd-2.4.64-1.amzn2023.0.1.x8    12/12
  Running scriptlet: httpd-2.4.64-1.amzn2023.0.1.x8    12/12
  Verifying        : apr-1.7.5-1.amzn2023.0.4.x86_6     1/12
  Verifying        : apr-util-1.6.3-1.amzn2023.0.1.     2/12
  Verifying        : apr-util-openssl-1.6.3-1.amzn2     3/12
  Verifying        : generic-logos-httpd-18.0.0-12.     4/12
  Verifying        : httpd-2.4.64-1.amzn2023.0.1.x8     5/12
  Verifying        : httpd-core-2.4.64-1.amzn2023.0     6/12
  Verifying        : httpd-filesystem-2.4.64-1.amzn     7/12
  Verifying        : httpd-tools-2.4.64-1.amzn2023.     8/12
  Verifying        : libbrotli-1.0.9-4.amzn2023.0.2     9/12
  Verifying        : mailcap-2.1.49-3.amzn2023.0.3.    10/12
  Verifying        : mod_http2-2.0.27-1.amzn2023.0.    11/12
  Verifying        : mod_lua-2.4.64-1.amzn2023.0.1.    12/12

Installed:
  apr-1.7.5-1.amzn2023.0.4.x86_64
  apr-util-1.6.3-1.amzn2023.0.1.x86_64
  apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64
  generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
  httpd-2.4.64-1.amzn2023.0.1.x86_64
  httpd-core-2.4.64-1.amzn2023.0.1.x86_64
  httpd-filesystem-2.4.64-1.amzn2023.0.1.noarch
  httpd-tools-2.4.64-1.amzn2023.0.1.x86_64
  libbrotli-1.0.9-4.amzn2023.0.2.x86_64
  mailcap-2.1.49-3.amzn2023.0.3.noarch
  mod_http2-2.0.27-1.amzn2023.0.3.x86_64
  mod_lua-2.4.64-1.amzn2023.0.1.x86_64

Complete!
[root@ip-172-31-47-49 ~]#
```

- Vi /etc/hosts
- Add HA-Proxy-Server Pubic IP Address

```
127.0.0.1   localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost6 localhost6.localdomain6
13.60.183.106 load_balancer
```

- Run below command on Server-1
- ping load_balancer -c 4

```
[root@ip-172-31-47-49 ~]# ping load_balancer -c 4
PING load_balancer (13.60.183.106) 56(84) bytes of data.
64 bytes from load_balancer (13.60.183.106): icmp_seq=1 ttl=
126 time=0.197 ms
64 bytes from load_balancer (13.60.183.106): icmp_seq=2 ttl=
126 time=0.200 ms
64 bytes from load_balancer (13.60.183.106): icmp_seq=3 ttl=
126 time=0.196 ms
64 bytes from load_balancer (13.60.183.106): icmp_seq=4 ttl=
126 time=0.202 ms

--- load_balancer ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3130
ms
rtt min/avg/max/mdev = 0.196/0.198/0.202/0.002 ms
[root@ip-172-31-47-49 ~]#
```

- systemctl start httpd
- systemctl status httpd

```
[root@ip-172-31-47-49 ~]# systemctl start httpd
[root@ip-172-31-47-49 ~]# systemctl status httpd
● httpd.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disa
     Active: active (running) since Fri 2025-09-05 14:34:06 UTC; 20s ago
       Docs: man:httpd.service(8)
   Main PID: 26317 (httpd)
     Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes se
      Tasks: 177 (limit: 1057)
     Memory: 13.3M
        CPU: 78ms
     CGroup: /system.slice/httpd.service
             ├─26317 /usr/sbin/httpd -DFOREGROUND
             ├─26345 /usr/sbin/httpd -DFOREGROUND
             ├─26347 /usr/sbin/httpd -DFOREGROUND
             ├─26350 /usr/sbin/httpd -DFOREGROUND
             └─26371 /usr/sbin/httpd -DFOREGROUND

Sep 05 14:34:06 ip-172-31-47-49.eu-north-1.compute.internal systemd[1]: Starting h
Sep 05 14:34:06 ip-172-31-47-49.eu-north-1.compute.internal systemd[1]: Started ht
Sep 05 14:34:06 ip-172-31-47-49.eu-north-1.compute.internal httpd[26317]: Server c
```

Browse with Server-1 Public IP address:80 it will work

Server-2 Steps:

Run following command to Access Server-2

```
MUJJU SK@DESKTOP-LU541U4 MINGW64 ~/Downloads
$ ssh -i linux-testing.pem ec2-user@13.61.177.13
The authenticity of host '13.61.177.13 (13.61.177.13)' can't be established.
ED25519 key fingerprint is SHA256:SZhy5BJuGhXb7MRYgrMseT7BgVUgTqM2i2HLieBspVs.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
```

- yum install nginx -y
- sudo amazon-linux-extras install nginx1 -y

```
[root@ip-172-31-34-101 ~]# yum install nginx -y
Last metadata expiration check: 0:01:49 ago on Fri Sep  5 14:41:53 2025.
Dependencies resolved.
================================================================================
 Package                    Architecture     Version
================================================================================
Installing:
 nginx                      x86_64           1:1.28.0-1.amzn2023.0.2
Installing dependencies:
 generic-logos-httpd        noarch           18.0.0-12.amzn2023.0.3
 gperftools-libs            x86_64           2.9.1-1.amzn2023.0.3
 libunwind                  x86_64           1.4.0-5.amzn2023.0.2
 nginx-core                 x86_64           1:1.28.0-1.amzn2023.0.2
 nginx-filesystem           noarch           1:1.28.0-1.amzn2023.0.2
 nginx-mimetypes            noarch           2.1.49-3.amzn2023.0.3

Transaction Summary
================================================================================
```

```
  Installing       : nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch
  Installing       : libunwind-1.4.0-5.amzn2023.0.2.x86_64
  Installing       : gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64
  Installing       : nginx-core-1:1.28.0-1.amzn2023.0.2.x86_64
  Installing       : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
  Installing       : nginx-1:1.28.0-1.amzn2023.0.2.x86_64
  Running scriptlet: nginx-1:1.28.0-1.amzn2023.0.2.x86_64
  Verifying        : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
  Verifying        : gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64
  Verifying        : libunwind-1.4.0-5.amzn2023.0.2.x86_64
  Verifying        : nginx-1:1.28.0-1.amzn2023.0.2.x86_64
  Verifying        : nginx-core-1:1.28.0-1.amzn2023.0.2.x86_64
  Verifying        : nginx-filesystem-1:1.28.0-1.amzn2023.0.2.noarch
  Verifying        : nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch

Installed:
  generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch      gperftools-libs-2.9.1-
  libunwind-1.4.0-5.amzn2023.0.2.x86_64                  nginx-1:1.28.0-1.amzn2
  nginx-core-1:1.28.0-1.amzn2023.0.2.x86_64              nginx-filesystem-1:1.2
  nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch

Complete!
[root@ip-172-31-34-101 ~]#
```

- vi /etc/hosts
- Add HA-Proxy-Server Pubic IP Address

```
127.0.0.1   localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost6 localhost6.localdomain6
13.60.183.106 load_balancer
```

```
[root@ip-172-31-34-101 ~]# ping load_balancer -c 4
PING load_balancer (13.60.183.106) 56(84) bytes of data.
64 bytes from load_balancer (13.60.183.106): icmp_seq=1 ttl=126 time=0.207 ms
64 bytes from load_balancer (13.60.183.106): icmp_seq=2 ttl=126 time=0.217 ms
64 bytes from load_balancer (13.60.183.106): icmp_seq=3 ttl=126 time=0.238 ms
64 bytes from load_balancer (13.60.183.106): icmp_seq=4 ttl=126 time=0.214 ms

--- load_balancer ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3113ms
rtt min/avg/max/mdev = 0.207/0.219/0.238/0.011 ms
[root@ip-172-31-34-101 ~]#
```

- Systemctl start nginx
- Systemctl status nginx

```
[root@ip-172-31-34-101 ~]# systemctl start nginx
[root@ip-172-31-34-101 ~]# systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; disabled; preset: disabled)
     Active: active (running) since Fri 2025-09-05 14:50:52 UTC; 9s ago
    Process: 25739 ExecStartPre=/usr/bin/rm -f /run/nginx.pid (code=exited, status=0/SUCCESS)
    Process: 25740 ExecStartPre=/usr/sbin/nginx -t (code=exited, status=0/SUCCESS)
    Process: 25741 ExecStart=/usr/sbin/nginx (code=exited, status=0/SUCCESS)
   Main PID: 25742 (nginx)
      Tasks: 3 (limit: 1057)
     Memory: 3.2M
        CPU: 55ms
     CGroup: /system.slice/nginx.service
             ├─25742 "nginx: master process /usr/sbin/nginx"
             ├─25743 "nginx: worker process"
             └─25744 "nginx: worker process"

Sep 05 14:50:52 ip-172-31-34-101.eu-north-1.compute.internal systemd[1]: Starting nginx.service - The nginx HT>
Sep 05 14:50:52 ip-172-31-34-101.eu-north-1.compute.internal nginx[25740]: nginx: the configuration file /etc/>
Sep 05 14:50:52 ip-172-31-34-101.eu-north-1.compute.internal nginx[25740]: nginx: configuration file /etc/ngin>
Sep 05 14:50:52 ip-172-31-34-101.eu-north-1.compute.internal systemd[1]: Started nginx.service - The nginx HTT>
lines 1-19/19 (END)
```

Browse with Server-2 Public IP address:80 it will work

3. HA-Proxy-Server Steps:

Run following command to Access HA-Proy-Server

•ssh -i your-key.pem ec2-user@Pubipaddress of HA-Proxy-Server instance

```
MUJJU SK@DESKTOP-LU541U4 MINGW64 ~/Downloads
$ ssh -i linux-testing.pem ec2-user@13.60.183.106
The authenticity of host '13.60.183.106 (13.60.183.106)' can't be established.
ED25519 key fingerprint is SHA256:GEIZqJSIq36GBa9RrvCLtIlAcw0xCY4axTGJUUThE8c.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])?
```

- yum update -y
- yum install HA proxy -y

```
[root@ip-172-31-44-205 ~]# yum install haproxy -y
Last metadata expiration check: 0:02:01 ago on Fri Sep  5 14:57:
Dependencies resolved.
================================================================
 Package                Architecture          Version
================================================================
Installing:
 haproxy                x86_64                2.8.3-1.amzn2023.0.1

Transaction Summary
================================================================
Install  1 Package

Total download size: 2.4 M
Installed size: 7.6 M
Downloading Packages:
haproxy-2.8.3-1.amzn2023.0.1.x86_64.rpm
----------------------------------------------------------------
Total
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing        :
  Running scriptlet: haproxy-2.8.3-1.amzn2023.0.1.x86_64
  Installing       : haproxy-2.8.3-1.amzn2023.0.1.x86_64
  Running scriptlet: haproxy-2.8.3-1.amzn2023.0.1.x86_64
  Verifying        : haproxy-2.8.3-1.amzn2023.0.1.x86_64

Installed:
  haproxy-2.8.3-1.amzn2023.0.1.x86_64
```

- vi /etc/hosts
- Add Server-1, Server-2 Public IP’s

```
127.0.0.1   localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost6 localhost6.localdomain6
16.171.28.87 server-1
13.61.177.13 server -2
```

- vi /etc/haproxy/haproxy.cfg
- Add Server-1, Server-2 public IP’s

```
    maxconn                 3000

#---------------------------------------------------------------------
# main frontend which proxys to the backends
#---------------------------------------------------------------------
frontend main *:80
    bind *:5000
    acl url_static       path_beg       -i /static /images /javascri
    acl url_static       path_end       -i .jpg .gif .png .css .js

    use_backend static          if url_static
    default_backend             app

#---------------------------------------------------------------------
# static backend for serving up images, stylesheets and such
#---------------------------------------------------------------------
backend static
    balance     roundrobin
    server      static 127.0.0.1:4331 check

#---------------------------------------------------------------------
# round robin balancing between the various backends
#---------------------------------------------------------------------
backend app
    balance     roundrobin
    server  app1 127.0.0.1:5001 check
    server  app2 127.0.0.1:5002 check
    server  app3 127.0.0.1:5003 check
    server  app4 127.0.0.1:5004 check
    server  app5 16.171.28.87:80 check
    server  app6 13.61.177.13:80 check
-- INSERT --
```

- systemctl enable haproxy
- systemctl start haproxy
- systemctl status haproxy
- now browse with HA-Proxy-Server PublicIP:80 it will distribute load to Server-1, Server-2