Configure an HTTP server on RHEL, set up a welcome page, and test HTTP response codes:

step1:

Installing httpd:

sudo yum install httpd -y

```
[roshinigubba@atmecsintl-230 ~]$ sudo yum install httpd -y
[sudo] password for roshinigubba:
Updating Subscription Management repositories.
Last metadata expiration check: 21:40:08 ago on Tue 19 Nov 2024 07:48:31 PM IST.
Dependencies resolved.
================================================================================
 Package          Arch    Version          Repository                    Size
================================================================================
Installing:
 httpd            x86_64  2.4.62-1.el9     rhel-9-for-x86_64-appstream-rpms   51 k
Installing dependencies:
 apr              x86_64  1.7.0-12.el9_3   rhel-9-for-x86_64-appstream-rpms  126 k
 apr-util         x86_64  1.6.1-23.el9     rhel-9-for-x86_64-appstream-rpms   97 k
 apr-util-bdb     x86_64  1.6.1-23.el9     rhel-9-for-x86_64-appstream-rpms   14 k
 httpd-core       x86_64  2.4.62-1.el9     rhel-9-for-x86_64-appstream-rpms  1.5 M
 httpd-filesystem noarch  2.4.62-1.el9     rhel-9-for-x86_64-appstream-rpms   15 k
 httpd-tools      x86_64  2.4.62-1.el9     rhel-9-for-x86_64-appstream-rpms   86 k
 redhat-logos-httpd
                  noarch  90.4-2.el9       rhel-9-for-x86_64-appstream-rpms   18 k
Installing weak dependencies:
 apr-util-openssl x86_64  1.6.1-23.el9     rhel-9-for-x86_64-appstream-rpms   17 k
 mod_http2        x86_64  2.0.26-2.el9_4.1
                                           rhel-9-for-x86_64-appstream-rpms  167 k
 mod_lua          x86_64  2.4.62-1.el9     rhel-9-for-x86_64-appstream-rpms   60 k

Transaction Summary
================================================================================
Install  11 Packages

Total download size: 2.2 M
Installed size: 6.1 M
Downloading Packages:
(1/11): apr-util-bdb-1.6.1-23.el9.x86_64.rpm       27 kB/s |  14 kB     00:00
(2/11): apr-util-openssl-1.6.1-23.el9.x86_64.rp    31 kB/s |  17 kB     00:00
(3/11): apr-util-1.6.1-23.el9.x86_64.rpm          176 kB/s |  97 kB     00:00
(4/11): redhat-logos-httpd-90.4-2.el9.noarch.rp    62 kB/s |  18 kB     00:00
(5/11): httpd-2.4.62-1.el9.x86_64.rpm             179 kB/s |  51 kB     00:00
(6/11): apr-1.7.0-12.el9_3.x86_64.rpm             379 kB/s | 126 kB     00:00
(7/11): httpd-tools-2.4.62-1.el9.x86_64.rpm       268 kB/s |  86 kB     00:00
(8/11): mod_lua-2.4.62-1.el9.x86_64.rpm           204 kB/s |  60 kB     00:00
(9/11): mod_http2-2.0.26-2.el9_4.1.x86_64.rpm     489 kB/s | 167 kB     00:00
(10/11): httpd-filesystem-2.4.62-1.el9.noarch.r    50 kB/s |  15 kB     00:00
(11/11): httpd-core-2.4.62-1.el9.x86_64.rpm
--------------------------------------------------------------------------------
Total
Red Hat Enterprise Linux 9 for x86_64 - AppStream (RPMs)
Importing GPG key 0xFD431D51:
```

```
Importing GPG key 0xFD431D51:
 Userid     : "Red Hat, Inc. (release key 2) <security@redhat.com>"
 Fingerprint: 567E 347A D004 4ADE 55BA 8A5F 199E 2F91 FD43 1D51
 From       : /etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
Key imported successfully
Importing GPG key 0x5A6340B3:
 Userid     : "Red Hat, Inc. (auxiliary key 3) <security@redhat.com>"
 Fingerprint: 7E46 2425 8C40 6535 D56D 6F13 5054 E4A4 5A63 40B3
 From       : /etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
Key imported successfully
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing        :                                                                      1/1
  Installing       : apr-1.7.0-12.el9_3.x86_64                                           1/11
  Installing       : apr-util-bdb-1.6.1-23.el9.x86_64                                    2/11
  Installing       : apr-util-openssl-1.6.1-23.el9.x86_64                                3/11
  Installing       : apr-util-1.6.1-23.el9.x86_64                                        4/11
  Installing       : httpd-tools-2.4.62-1.el9.x86_64                                     5/11
  Running scriptlet: httpd-filesystem-2.4.62-1.el9.noarch                                6/11
  Installing       : httpd-filesystem-2.4.62-1.el9.noarch                                6/11
  Installing       : httpd-core-2.4.62-1.el9.x86_64                                      7/11
  Installing       : mod_lua-2.4.62-1.el9.x86_64                                         8/11
  Installing       : redhat-logos-httpd-90.4-2.el9.noarch                                9/11
  Installing       : mod_http2-2.0.26-2.el9_4.1.x86_64                                  10/11
  Installing       : httpd-2.4.62-1.el9.x86_64                                          11/11
  Running scriptlet: httpd-2.4.62-1.el9.x86_64                                          11/11
  Verifying        : apr-util-1.6.1-23.el9.x86_64                                        1/11
  Verifying        : apr-util-bdb-1.6.1-23.el9.x86_64                                    2/11
  Verifying        : apr-util-openssl-1.6.1-23.el9.x86_64                                3/11
  Verifying        : redhat-logos-httpd-90.4-2.el9.noarch                                4/11
  Verifying        : apr-1.7.0-12.el9_3.x86_64                                           5/11
  Verifying        : httpd-2.4.62-1.el9.x86_64                                           6/11
  Verifying        : httpd-tools-2.4.62-1.el9.x86_64                                     7/11
  Verifying        : mod_http2-2.0.26-2.el9_4.1.x86_64                                   8/11
  Verifying        : mod_lua-2.4.62-1.el9.x86_64                                         9/11
  Verifying        : httpd-core-2.4.62-1.el9.x86_64                                     10/11
  Verifying        : httpd-filesystem-2.4.62-1.el9.noarch                               11/11
Installed products updated.

Installed:
  apr-1.7.0-12.el9_3.x86_64          apr-util-1.6.1-23.el9.x86_64       apr-util-bdb-1.6.1-23.el9.x86_64       apr-util-openssl-1.6.1-23.el9.x86_64
  httpd-2.4.62-1.el9.x86_64          httpd-core-2.4.62-1.el9.x86_64     httpd-filesystem-2.4.62-1.el9.noarch   httpd-tools-2.4.62-1.el9.x86_64
  mod_http2-2.0.26-2.el9_4.1.x86_64  mod_lua-2.4.62-1.el9.x86_64        redhat-logos-httpd-90.4-2.el9.noarch

Complete!
```

Step 2 :Starting the httpd service and checking the status:

sudo systemctl start httpd
sudo systemctl status httpd

```
Complete:
[roshinigubba@atmecsint1-230 ~]$ sudo systemctl start httpd
[roshinigubba@atmecsint1-230 ~]$ sudo systemctl status httpd
● httpd.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: d▶
     Active: active (running) since Wed 2024-11-20 17:33:11 IST; 10s ago
       Docs: man:httpd.service(8)
   Main PID: 34135 (httpd)
     Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes▶
      Tasks: 177 (limit: 10966)
     Memory: 22.0M
        CPU: 122ms
     CGroup: /system.slice/httpd.service
             ├─34135 /usr/sbin/httpd -DFOREGROUND
             ├─34136 /usr/sbin/httpd -DFOREGROUND
             ├─34137 /usr/sbin/httpd -DFOREGROUND
             ├─34138 /usr/sbin/httpd -DFOREGROUND
             └─34139 /usr/sbin/httpd -DFOREGROUND

Nov 20 17:33:11 atmecsint1-230.atmecs.corp systemd[1]: Starting The Apache HTTP▶
Nov 20 17:33:11 atmecsint1-230.atmecs.corp systemd[1]: Started The Apache HTTP ▶
Nov 20 17:33:11 atmecsint1-230.atmecs.corp httpd[34135]: Server configured, lis▶
lines 1-19/19 (END)...skipping...
● httpd.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: active (running) since Wed 2024-11-20 17:33:11 IST; 10s ago
       Docs: man:httpd.service(8)
   Main PID: 34135 (httpd)
     Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec:   0 B/sec"
      Tasks: 177 (limit: 10966)
     Memory: 22.0M
        CPU: 122ms
     CGroup: /system.slice/httpd.service
             ├─34135 /usr/sbin/httpd -DFOREGROUND
             ├─34136 /usr/sbin/httpd -DFOREGROUND
             ├─34137 /usr/sbin/httpd -DFOREGROUND
             ├─34138 /usr/sbin/httpd -DFOREGROUND
             └─34139 /usr/sbin/httpd -DFOREGROUND

Nov 20 17:33:11 atmecsint1-230.atmecs.corp systemd[1]: Starting The Apache HTTP Server...
Nov 20 17:33:11 atmecsint1-230.atmecs.corp systemd[1]: Started The Apache HTTP Server.
Nov 20 17:33:11 atmecsint1-230.atmecs.corp httpd[34135]: Server configured, listening on: port 80
~
~
~
```

Step 3:

Enable Apache to start on boot:

sudo systemctl enable httpd

```
[roshinigubba@atmecsint1-230 ~]$ sudo systemctl enable httpd
[sudo] password for roshinigubba:
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr
/lib/systemd/system/httpd.service.
[roshinigubba@atmecsint1-230 ~]$
```

Step 4:

i. Going to the default directory for web content /var/www/html
ii. Creating html file named as welcomepage.html:
               \<html\>
             \<body\>
             \<h1\>Welcome to My Website\</h1\>
             \</body\>
             \</html\>"

```
Desktop      Downloads  Pictures  Templates
[roshinigubba@atmecsintl-230 ~]$ cat /var
cat: /var: Is a directory
[roshinigubba@atmecsintl-230 ~]$ cd /var
[roshinigubba@atmecsintl-230 var]$ ls
account  cache  db      ftp      kerberos  local  log   nis  preserve  spool  www
adm      crash  empty  games  lib        lock   mail  opt  run       tmp    yp
[roshinigubba@atmecsintl-230 var]$ cd /www/html
-bash: cd: /www/html: No such file or directory
[roshinigubba@atmecsintl-230 var]$ cd /www/
-bash: cd: /www/: No such file or directory
[roshinigubba@atmecsintl-230 var]$ cd /www
-bash: cd: /www: No such file or directory
[roshinigubba@atmecsintl-230 var]$ cd www
[roshinigubba@atmecsintl-230 www]$ ls
cgi-bin  html
[roshinigubba@atmecsintl-230 www]$ cd html
[roshinigubba@atmecsintl-230 html]$ ls
[roshinigubba@atmecsintl-230 html]$ echo "<html><body><h1>Welcome to My Website<
/h1></body></html>" | sudo tee /var/www/html/welcomepage.html
[sudo] password for roshinigubba:
<html><body><h1>Welcome to My Website</h1></body></html>
[roshinigubba@atmecsintl-230 html]$ ls
welcomepage.html
[roshinigubba@atmecsintl-230 html]$ ls -lrth
total 4.0K
-rw-r--r--. 1 root root 57 Nov 20 17:54 welcomepage.html
[roshinigubba@atmecsintl-230 html]$ chmod +x welcomepage.html
chmod: changing permissions of 'welcomepage.html': Operation not permitted
[roshinigubba@atmecsintl-230 html]$ sudo chmod +x welcomepage.html
[roshinigubba@atmecsintl-230 html]$ ls -lrth
total 4.0K
-rwxr-xr-x. 1 root root 57 Nov 20 17:54 welcomepage.html
[roshinigubba@atmecsintl-230 html]$
```
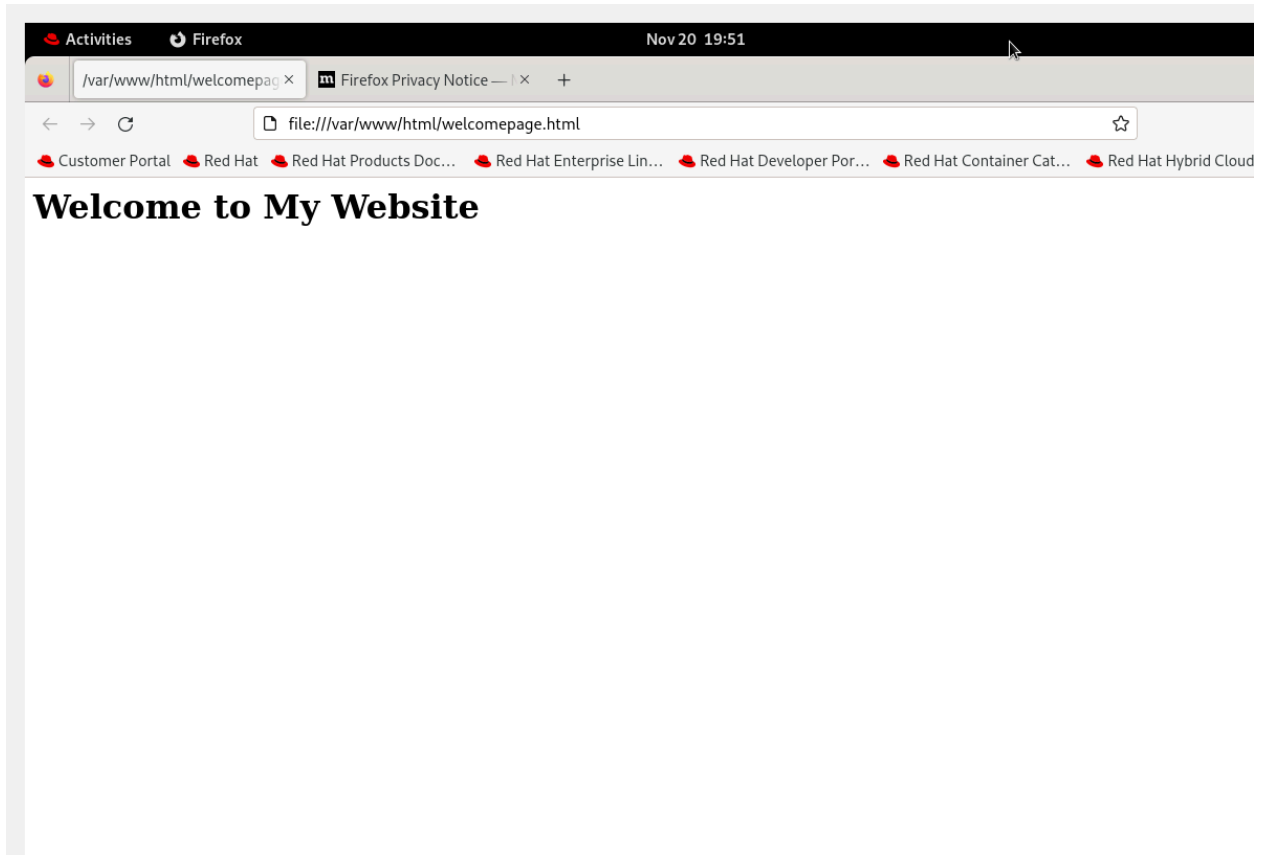
Step 5 :

Opening HTML page in web browser:

Firefox welcomepage.html

```
roshinigubba@atmecsintl-230 ~]$ cd /var/www/html
roshinigubba@atmecsintl-230 html]$ ls
elcomepage.html
roshinigubba@atmecsintl-230 html]$ firefox welcomepage.html
```

Welcome to My Website

Step 6:

Allow HTTP traffic through the firewall:

sudo firewall-cmd --permanent --add-service=http


```
[roshinigubba@atmecsintl-230 ~]$ sudo firewall-cmd --permanent --add-service=htt
p
[sudo] password for roshinigubba:
success
```

sudo firewall-cmd --reload


```
[roshinigubba@atmecsintl-230 html]$ sudo firewall-cmd --reload
[sudo] password for roshinigubba:
success
[roshinigubba@atmecsintl-230 html]$ |
```