Apache Web server

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Exercise 1: Install Apache HTTPD Server

- Use dnf to install the Apache HTTPD package.

- Verify the installation by checking the package version.

```
[root@localhost ~]# httpd -v
Server version: Apache/2.4.62 (CentOS Stream)
Server built:   Jan 29 2025 00:00:00
[root@localhost ~]#
```

- Start the Apache service using systemctl.

- Enable the service to start automatically on boot.

- Verify the service status.

```
[root@localhost ~]# sudo systemctl start httpd
[root@localhost ~]# sudo systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/l
ib/systemd/system/httpd.service.
[root@localhost ~]# sudo systemctl status httpd
● httpd.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disa>
     Active: active (running) since Mon 2025-05-26 23:55:11 EEST; 12s ago
       Docs: man:httpd.service(8)
   Main PID: 6416 (httpd)
     Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes s>
      Tasks: 177 (limit: 17159)
     Memory: 25.9M
        CPU: 76ms
     CGroup: /system.slice/httpd.service
             ├─6416 /usr/sbin/httpd -DFOREGROUND
             ├─6417 /usr/sbin/httpd -DFOREGROUND
             ├─6418 /usr/sbin/httpd -DFOREGROUND
             ├─6419 /usr/sbin/httpd -DFOREGROUND
             └─6420 /usr/sbin/httpd -DFOREGROUND

May 26 23:55:11 localhost.localdomain systemd[1]: Starting The Apache HTTP Server>
May 26 23:55:11 localhost.localdomain httpd[6416]: AH00558: httpd: Could not reli>
May 26 23:55:11 localhost.localdomain httpd[6416]: Server configured, listening o>
May 26 23:55:11 localhost.localdomain systemd[1]: Started The Apache HTTP Server.
lines 1-20/20 (END)
```

- Open ports 80 (HTTP) and 443 (HTTPS) in the firewall.

- Reload firewall settings.

- Verify that the firewall rules are applied.

```
[root@localhost ~]# sudo firewall-cmd --permanent --add-service=http
success
[root@localhost ~]# sudo firewall-cmd --permanent --add-service=https
success
[root@localhost ~]# sudo firewall-cmd --reload
success
[root@localhost ~]# sudo firewall-cmd --list-all
public (active)
  target: default
  icmp-block-inversion: no
  interfaces: brteam0 ens33 team0
  sources:
  services: cockpit dhcpv6-client http https ssh
  ports:
  protocols:
  forward: yes
  masquerade: no
  forward-ports:
  source-ports:
  icmp-blocks:
  rich rules:
[root@localhost ~]#
```

Host multiple websites on a single RHEL 8 server using Apache name-based virtual hosts.

- Create separate directories for each website.

- Set appropriate permissions.

```
[root@localhost ~]# sudo mkdir -p /var/www/html/site1.com
[root@localhost ~]# sudo mkdir -p /var/www/html/site2.com
[root@localhost ~]# sudo chown -R apache:apache /var/www/html/site1.com
[root@localhost ~]# sudo chown -R apache:apache /var/www/html/site2.com
[root@localhost ~]# sudo chmod -R 755 /var/www/html/
[root@localhost ~]#
```

Step 2: Create Sample Index Pages

```
[root@localhost ~]# echo "Welcome to Site 1" | sudo tee /var/www/html/site1.com/in
dex.html
Welcome to Site 1
[root@localhost ~]# echo "Welcome to Site 2" | sudo tee /var/www/html/site2.com/in
dex.html
Welcome to Site 2
[root@localhost ~]#
```

- Create a separate config file for each site in /etc/httpd/conf.d/:

sudo vi /etc/httpd/conf.d/site1.com.conf

ServerName site1.com

DocumentRoot /var/www/html/site1.com

ErrorLog /var/log/httpd/site1.com_error.log

CustomLog /var/log/httpd/site1.com_access.log combined

- Repeat for the second site:

sudo vi /etc/httpd/conf.d/site2.com.conf

ServerName site2.com

DocumentRoot /var/www/html/site2.com

ErrorLog /var/log/httpd/site2.com_error.log

CustomLog /var/log/httpd/site2.com_access.log combined

- Add entries to /etc/hosts on your client or server:

127.0.0.1 site1.com

127.0.0.1 site2.com

Step 5: Restart Apache and Test

```
[root@localhost ~]# sudo systemctl restart httpd
[root@localhost ~]#
```

- Open a browser or use curl to test:

curl http://site1.com

curl http://site2.com

- Each should display its respective welcome message.

- Check Apache syntax:

sudo apachectl configtest

- Review logs in /var/log/httpd/ for errors.

- Ensure firewall allows HTTP traffic.