

## Apache Web Server Hosting Multiple Web Sites

### Install Apache Web Server

To install apache web server on a Redhat Based system use following command.

```
sudo yum install httpd -y
```

```
[admin@demosrv ~]$ sudo yum install httpd -y_
```

Once the apache web server is installed, its default configuration file httpd.conf is stored in the /etc/httpd/conf directory.

Here we have to configure Apache web server to host multiple web sites on the same server. The websites will use the same IP address and same port 80. This is possible only with virtual host configuration of Apache server. Thus we need a third parameter which will identify each web site uniquely. This parameter is the hostname which is the name of the website like [www.abc.lab](http://www.abc.lab). The Apache web server will identify user request based on the name provided by the user. Thus here the websites should be accessed using names only and not the IP address.

### Configure Virtual Hosting

Here we are going to host 2 web sites. The first website will be accessed by name [www.demo.lab](http://www.demo.lab) and the second website will be accessed by name [www.example.lab](http://www.example.lab).

The default configuration specified in the /etc/httpd/conf/httpd.conf file makes the Apache web server to consider the configuration files in the /etc/httpd/conf.d directory. The extension of the file should be .conf. Thus you will create a file by name virtualhosts.conf in this directory.

```
sudo touch /etc/httpd/conf.d/virtualhosts.conf
```

```
[admin@demosrv html]$ sudo touch /etc/httpd/conf.d/virtualhosts.conf
```

Now we will create the directories for these web sites. These directories will contain the web pages for these web sites. We will create the directories based on the name of the websites. This makes easy to identify and manage the web site data.

```
sudo mkdir /var/www/demo.lab
```

```
sudo mkdir /var/www/example.lab
```

```
[admin@demosrv html]$ sudo mkdir /var/www/demo.lab  
[sudo] password for admin:  
[admin@demosrv html]$ sudo mkdir /var/www/example.lab  
[admin@demosrv html]$ _
```

Now we will go to these directories and create index.html page.

```
cd /var/www/demo.lab
```

```
sudo vi index.html
```

Type "Welcome to demo.lab website!"

Save the file.

Similarly

```
cd /var/www/example.lab
```

```
sudo vi index.html
```

Type **"Welcome to example.lab website!"**

Save the file.

Now you will configure virtual hosting so that Apache server will host these 2 websites.

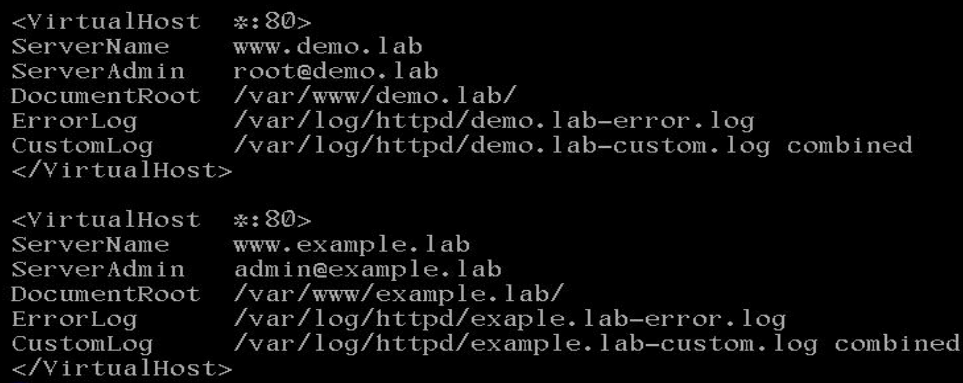
You need to edit the /etc/httpd/conf.d/virtualhosts.conf file and add the configuration.

```
sudo vi /etc/httpd/conf.d/virtualhosts.conf
```

Add following configuration

```
<VirtualHost *:80>
ServerName      www.demo.lab
ServerAdmin     root@demo.lab
DocumentRoot    /var/www/demo.lab/
ErrorLog         /var/log/httpd/demo.lab-error.log
CustomLog        /var/log/httpd/demo.lab-custom.log combined
</VirtualHost>
```

```
<VirtualHost *:80>
ServerName      www.example.lab
ServerAdmin     admin@example.lab
DocumentRoot    /var/www/example.lab/
ErrorLog         /var/log/httpd/example.lab-error.log
CustomLog        /var/log/httpd/example.lab-custom.log combined
</VirtualHost>
```



```
<VirtualHost *:80>
ServerName      www.demo.lab
ServerAdmin     root@demo.lab
DocumentRoot    /var/www/demo.lab/
ErrorLog         /var/log/httpd/demo.lab-error.log
CustomLog        /var/log/httpd/demo.lab-custom.log combined
</VirtualHost>

<VirtualHost *:80>
ServerName      www.example.lab
ServerAdmin     admin@example.lab
DocumentRoot    /var/www/example.lab/
ErrorLog         /var/log/httpd/exaple.lab-error.log
CustomLog        /var/log/httpd/example.lab-custom.log combined
</VirtualHost>
~
```

Save the file.

Now start/restart the httpd service.

```
sudo systemctl start httpd
```

If the service is already running then restart it.

```
sudo systemctl restart httpd
```

Verify that the service started successfully.

**sudo systemctl status httpd**

```
[admin@demosrv www]$ sudo systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
   Active: active (running) since Thu 2025-09-25 20:27:54 IST; 7s ago
     Invocation: 4b946af67f964a099d906adb28fa54e8
       Docs: man:httpd.service(8)
    Main PID: 5329 (httpd)
      Status: "Started, listening on: port 80"
        Tasks: 177 (limit: 22951)
      Memory: 13.3M (peak: 13.6M)
         CPU: 297ms
    CGroup: /system.slice/httpd.service
            └─5329 /usr/sbin/httpd -DFOREGROUND
              └─5330 /usr/sbin/httpd -DFOREGROUND
                └─5331 /usr/sbin/httpd -DFOREGROUND
                  └─5332 /usr/sbin/httpd -DFOREGROUND
                    └─5362 /usr/sbin/httpd -DFOREGROUND

Sep 25 20:27:54 demosrv systemd[1]: Starting httpd.service - The Apache HTTP Server...
Sep 25 20:27:54 demosrv (httpd)[5329]: httpd.service: Referenced but unset environment variable evaluates
Sep 25 20:27:54 demosrv httpd[5329]: AH00112: Warning: DocumentRoot [/var/www/exaple.lab/] does not exist
Sep 25 20:27:54 demosrv httpd[5329]: AH00558: httpd: Could not reliably determine the server's fully qual
Sep 25 20:27:54 demosrv httpd[5329]: Server configured, listening on: port 80
Sep 25 20:27:54 demosrv systemd[1]: Started httpd.service - The Apache HTTP Server.
lines 1-23/23 (END)
```

In case if there is any syntax error, the service will not start. Give following command to find out the error.

**sudo journalctl -xeu httpd**

Read the output carefully.

Once the service start successfully, you need to check if the websites are accessible.

However you know that the websites need to be accessed using there names [www.demo.lab](http://www.demo.lab) and [www.example.lab](http://www.example.lab).

But the computer requires the IP address to access the web server. Here we will use the /etc/hosts file as the DNS server.

**sudo vi /etc/hosts**

Add following line at the end of the file.

192.168.100.1    [www.demo.lab](http://www.demo.lab)   [www.example.com](http://www.example.com)

The file will look like this

```
# Loopback entries; do not change.
# For historical reasons, localhost precedes localhost.localdomain:
127.0.0.1    localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6
# See hosts(5) for proper format and other examples:
# 192.168.1.10 foo.example.org foo
# 192.168.1.13 bar.example.org bar
192.168.100.1 www.demo.lab www.example.lab
```

Save the file.

Now check if the site opens using

curl [www.demo.lab](http://www.demo.lab)

```
[admin@demosrv www]$ curl www.demo.lab
Welcome to demo.lab website!
[admin@demosrv www]$
```

curl [www.example.com](http://www.example.com)

```
[admin@demosrv www]$ curl www.example.lab
Welcome to example.com website!
[admin@demosrv www]$ _
```

If you get this output for both the commands it means the web sites are working.

## Great Job!!!

You are a Web Hosting Service Provider..... If you add one more web site which will be accessed by name [www.hack.lab](http://www.hack.lab) !!!