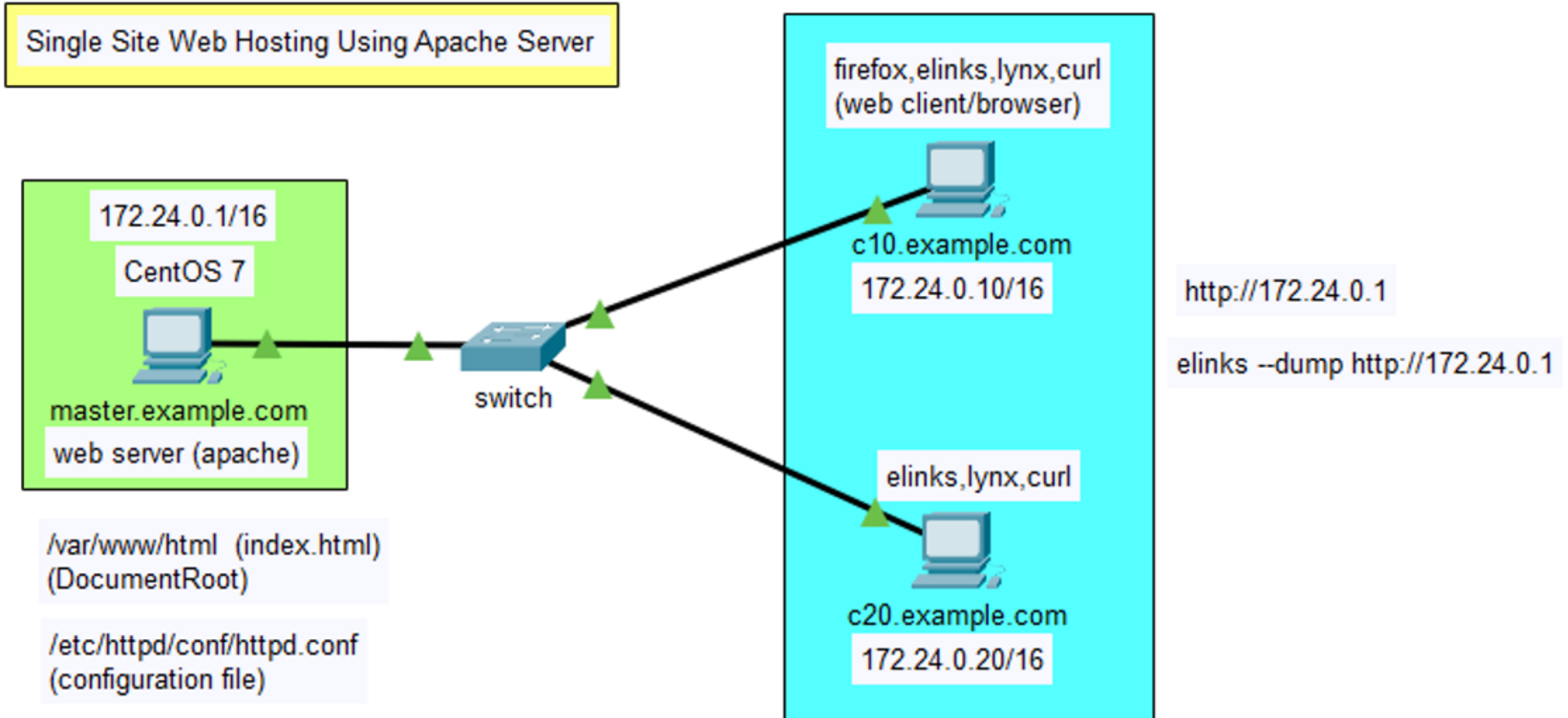


Launch Single Website Using Apache Web Server

(How To Use Different Configuration Settings)

Lab Setup



Check Apache Package & Default Home Page Directory

```
[root@master ~]# rpm -q httpd
httpd-2.4.6-97.el7.centos.x86_64
[root@master ~]#
[root@master ~]# cd /var/www/html
[root@master html]#
[root@master html]# ls
[root@master html]#
[root@master html]# ip a s ens33
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP
    link/ether 00:0c:29:ac:38:ef brd ff:ff
    inet 172.24.0.1/16 brd 172.24.255.255
```

Check whether web server package is installed or not. Check the IP address of “[master.example.com](#)” by using “`ip a s`” command.

Create Default Home Page & Take Backup of httpd.conf

```
[root@master html]# cat >index.html
wel to test web site
[root@master html]#
[root@master html]# cp /etc/httpd/conf/httpd.conf{,.bak}
[root@master html]#
[root@master html]# ls /etc/httpd/conf/httpd.conf*
/etc/httpd/conf/httpd.conf  /etc/httpd/conf/httpd.conf.bak
[root@master html]#
[root@master html]# vi /etc/httpd/conf/httpd.conf
```

After installing web server, `"/var/www/html"` directory will be available to us, where we are going to put contents of our web site. We can use `"html"` to create static pages and `"php"` to create dynamic pages.

In our case, we will be creating small static `"html"` pages. Go to `"/var/www/html"` directory and create `"index.html"` file and put some contents into that file. The name of the file should be `"index.html"`. Later on we will see, why ?

Take backup of Apache Configuration File `"httpd.conf"`.

Edit Apache Configuration File “httpd.conf”

```
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep ^ServerName
ServerName 172.24.0.1
[root@master html]#
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep -B1 ^ServerName
#ServerName www.example.com:80
ServerName 172.24.0.1
[root@master html]#
```

Edit apache configuration file “/etc/httpd/conf/httpd.conf” and add directive “ServerName 172.24.0.1”. “172.24.0.1” is the IP address on which web server will be implemented.

Start Apache Web Server

```
[root@master html]# systemctl start httpd
[root@master html]#
[root@master html]# systemctl enable httpd
Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service
httpd.service.
[root@master html]#
```

Start and enable web server.

Check Status of Apache Web Server

```
[root@master html]# systemctl status httpd
■ httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
   Active: active (running) since Fri 2021-01-08 12:51:04 IST; 50s ago
     Docs: man:httpd(8)
           man:apachectl(8)
 Main PID: 2258 (httpd)
   Status: "Total requests: 0; Current requests/sec: 0; Current traffic: 0 B/sec"
  CGroup: /system.slice/httpd.service
          └─2258 /usr/sbin/httpd -DFOREGROUND
            └─2260 /usr/sbin/httpd -DFOREGROUND
              └─2261 /usr/sbin/httpd -DFOREGROUND
                └─2262 /usr/sbin/httpd -DFOREGROUND
                  └─2263 /usr/sbin/httpd -DFOREGROUND
                    └─2264 /usr/sbin/httpd -DFOREGROUND

Jan 08 12:51:00 master.example.com systemd[1]: Starting The Apache HTTP Server...
Jan 08 12:51:04 master.example.com systemd[1]: Started The Apache HTTP Server.
[root@master html]# _
```

[Check status of Apache Web Server](#)

Check Web Connectivity From C10

```
[root@c10 ~]# elinks --dump http://172.24.0.1
wel to test web site
[root@c10 ~]#
[root@c10 ~]# lynx --dump http://172.24.0.1
wel to test web site

[root@c10 ~]# curl http://172.24.0.1
wel to test web site
[root@c10 ~]#
[root@c10 ~]# elinks --dump http://172.24.0.1:80
wel to test web site
[root@c10 ~]#
```

Go to “c10” and login as user “root” and run the text based browsers “elinks”, “lynx” and “curl”. The “lynx” is the oldest browser available.

Specify “http://172.24.0.1” or “http://172.24.0.1:80” in “elinks” browser. You will be able to view the web page. The “80” is the default port on which web server listens for connections. Even if we are not specifying the “:80” after web site address, web browsers are hard coded to go to “80” port.

Check Web Connectivity From C20

```
[root@c10 ~]# elinks --dump http://172.24.0.1
  wel to test web site
[root@c10 ~]#
[root@c10 ~]# lynx --dump http://172.24.0.1
  wel to test web site

[root@c10 ~]# curl http://172.24.0.1
wel to test web site
[root@c10 ~]#
[root@c10 ~]# elinks --dump http://172.24.0.1:80
  wel to test web site
[root@c10 ~]#
```

Go to "c20" and login as user "root" and run the text based browsers "elinks", "lynx" and "curl".

Why “index.html”

```
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep -A5 ^"# DirectoryIndex"  
# DirectoryIndex: sets the file that Apache will serve if a directory  
# is requested.  
#  
<IfModule dir_module>  
    DirectoryIndex index.html  
</IfModule>  
[root@master html]#
```

The “**DirectoryIndex**” directive will decide which files will be searched in what order, to be delivered to web clients. The “**index.html**” is included in the directive, that is why we created the main file with name “**index.html**”.

Rename “index.html”

```
[root@master html]# ls
index.html
[root@master html]# mv index.html i.html
[root@master html]#
[root@master html]# ls
i.html
[root@master html]#
```

Now rename “index.html” to “i.html”.

Access Web Site

```
[root@c10 ~]# elinks --dump http://172.24.0.1 |head -5
Testing 123..
```

```
This page is used to test the proper operation of the [1]Apache HTTP
server after it has been installed. If you can read this page it means
that this site is working properly. This server is powered by [2]CentOS.
```

```
[root@c10 ~]#
```

The web server is not displaying the contents of `"i.html"` file. It has displayed the contents of `"/usr/share/httpd/noindex/index.html"` file.

Default Welcome Page

```
[root@master ~]# cd /etc/httpd
[root@master httpd]#
[root@master httpd]# tree
```

```
.
├── conf
│   ├── httpd.conf
│   ├── httpd.conf.bak
│   └── magic
├── conf.d
│   ├── autoindex.conf
│   ├── php.conf
│   ├── README
│   ├── ssl.conf
│   ├── userdir.conf
│   └── welcome.conf
├── conf.modules.d
│   ├── 00-base.conf
│   ├── 00-dav.conf
│   ├── 00-lua.conf
│   ├── 00-mpm.conf
│   ├── 00-proxy.conf
│   ├── 00-ssl.conf
│   ├── 00-systemd.conf
│   ├── 01-cgi.conf
│   └── 10-php.conf
├── logs -> ../../var/log/httpd
├── modules -> ../../usr/lib64/httpd/modules
└── run -> /run/httpd
```

```
6 directories, 18 files
```

```
[root@master httpd]#
```

Default Welcome Page

```
[root@master httpd]# pwd
/etc/httpd
[root@master httpd]# cat conf.d/welcome.conf
#
# This configuration file enables the default "Welcome" page if there
# is no default index page present for the root URL. To disable the
# Welcome page, comment out all the lines below.
#
# NOTE: if this file is removed, it will be restored on upgrades.
#
<LocationMatch "^/+&#36;">
    Options -Indexes
    ErrorDocument 403 /.noindex.html
</LocationMatch>

<Directory /usr/share/httpd/noindex>
    AllowOverride None
    Require all granted
</Directory>

Alias /.noindex.html /usr/share/httpd/noindex/index.html
Alias /noindex/css/bootstrap.min.css /usr/share/httpd/noindex/css/bootstrap.min.css
Alias /noindex/css/open-sans.css /usr/share/httpd/noindex/css/open-sans.css
Alias /images/apache_pb.gif /usr/share/httpd/noindex/images/apache_pb.gif
Alias /images/poweredby.png /usr/share/httpd/noindex/images/poweredby.png
[root@master httpd]#
```

Default Welcome Page

```
[root@master httpd]# cat /usr/share/httpd/noindex/index.html |head -5
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd"><html><head>
<meta http-equiv="content-type" content="text/html; charset=UTF-8">
      <title>Apache HTTP Server Test Page powered by CentOS</title>
      <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
```

```
[root@master httpd]#
[root@master httpd]# elinks http://172.24.0.1
```

Apache HTTP Server Test Page powered by CentOS

Testing 123..

the **Apache HTTP server** after it has been installed. If you can read this page it means that this site is working properly. This server is powered by **CentOS**.

Change “DirectoryIndex”

```
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep -A5 ^"# DirectoryIndex"
# DirectoryIndex: sets the file that Apache will serve if a directory
# is requested.
#
<IfModule dir_module>
    DirectoryIndex index.html i.html
</IfModule>
[root@master html]#
[root@master html]# systemctl reload httpd
[root@master html]#
[root@master html]# service httpd configtest
Syntax OK
[root@master html]#
```

Edit “/etc/httpd/conf/httpd.conf” and include “i.html” in “DirectoryIndex” directive and reload “httpd” daemon. On reloading, configuration file will be reloaded. Now web clients will be able to view the site.

Check Website

```
[root@c10 ~]# elinks --dump http://172.24.0.1  
  wel to test web site  
[root@c10 ~]#
```

DocumentRoot

```
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep ^DocumentRoot
DocumentRoot "/var/www/html"
[root@master html]#
```

Why we have put the contents in `"/var/www/html"` directory, The `"DocumentRoot"` directive will decide on this and it specifies `"/var/www/html"`. This can be changed.

Change Default Port

```
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep ^Listen
Listen 80
[root@master html]#
[root@master html]# vi /etc/httpd/conf/httpd.conf
```

```
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep ^Listen
Listen 90
[root@master html]#
[root@master html]# systemctl reload httpd
[root@master html]#
[root@master html]# service httpd configtest
Syntax OK
[root@master html]#
```

Why “apache” listens on port “80” because “Listen 80” directive is there in “/etc/httpd/conf/httpd.conf” file. Change port to “90”. Then “reload” web server.

Verify Changed Port

```
[root@c10 ~]# elinks --dump http://172.24.0.1
ELinks: Connection refused
[root@c10 ~]#
[root@c10 ~]# elinks --dump http://172.24.0.1:90
  wel to test web site
[root@c10 ~]#
```

Now you can not access the web page by using “<http://172.24.0.1>”, it will give “[connection refused](#)” error. Why, because by default it will be sending the request to “80” port. To access web page, you have to specify “<http://172.24.0.1:90>”.

Revert Back to Original Settings

```
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep -A5 ^"# DirectoryIndex"
# DirectoryIndex: sets the file that Apache will serve if a directory
# is requested.
#
<IfModule dir_module>
    DirectoryIndex index.html
</IfModule>
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep ^ServerName
[root@master html]#
[root@master html]# cat /etc/httpd/conf/httpd.conf |grep ^Listen
Listen 80
[root@master html]# rm i.html
rm: remove regular file 'i.html'? y
[root@master html]#
[root@master html]# systemctl reload httpd
[root@master html]#
[root@master html]# service httpd configtest
Syntax OK
[root@master html]#
```