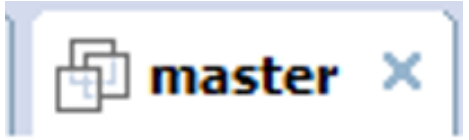
Named Based Virtual Hosting Using Apache

(Launch Many Websites on Single IP)



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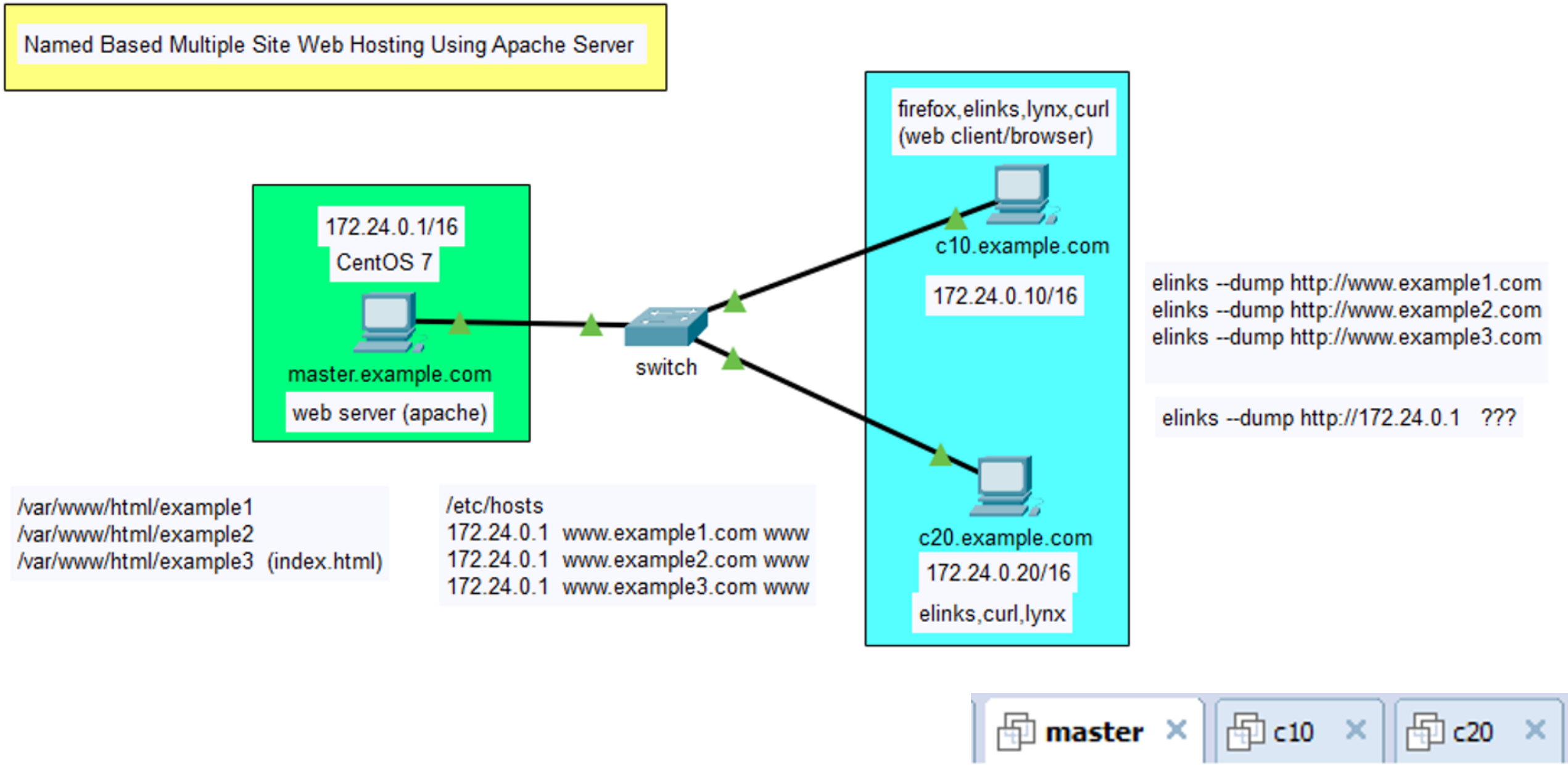

Lab Setup

Here we want to launch “www.example1.com”, “www.example2.com” and “www.example3.com” all on “172.24.0.1”. We are using 1 IP address for 3 sites. This is called named based virtual hosting. We will follow step by step approach for implementing this.

```
[root@master ~]# cat /etc/hosts
127.0.0.1   localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6
172.24.0.1  master.example.com master
172.24.0.1  www.example1.com www
172.24.0.1  www.example2.com www
172.24.0.1  www.example3.com www
```

For implementing named based virtual hosting, we need properly configured DNS server which will resolve “www.example1.com”, “www.example2.com” and “www.example3.com” to IP address “172.24.0.1”. Since we did not implement DNS server at this point of time, we will implement the same logic by editing “/etc/hosts” files on all systems.

Lab Setup

Now go to “/var/www/html” directory. Make 3 directories “example1”, “example2”, “example3” and put some material into these directories by creating simple “index.html” files. With “tree” command, you can confirm the directory structure.

```
[root@master ~]# cd /var/www/html
[root@master html]#
[root@master html]# ls
[root@master html]#
[root@master html]# mkdir example1 example2 example3
[root@master html]#
[root@master html]# cat >example1/index.html
wel to example1 site
[root@master html]#
[root@master html]# cat >example2/index.html
wel to example2 site
[root@master html]#
[root@master html]# cat >example3/index.html
wel to example3 site
[root@master html]#
[root@master html]# tree
.
├── example1
│   └── index.html
├── example2
│   └── index.html
└── example3
    └── index.html
```

Edit “/etc/httpd/conf/httpd.conf”

We have to add “NameVirtualHost 172.24.0.1” directive to specify on which IP address we want to implement named based virtual hosting. In new versions of apache, you do not need to specify this directive. Edit the “/etc/httpd/conf/httpd.conf” .

```
[root@master html]# tail -17 /etc/httpd/conf/httpd.conf

NameVirtualHost 172.24.0.1

<VirtualHost 172.24.0.1>
        ServerName www.example1.com
        DocumentRoot /var/www/html/example1
</VirtualHost>

<VirtualHost 172.24.0.1>
        ServerName www.example2.com
        DocumentRoot /var/www/html/example2
</VirtualHost>

<VirtualHost 172.24.0.1>
        ServerName www.example3.com
        DocumentRoot /var/www/html/example3
</VirtualHost>
```

Named Based VirtualHost Settings

The syntax of Virtual Host Section is

```
<VirtualHost 172.24.0.1>                    ---------- Start of virtual host section for "172.24.0.1"
        ServerName www.example1.com         ---------- Server name
        DocumentRoot /var/www/html/example1 ---------- Where the content will be placed
</VirtualHost>                              ---------- End of virtual host section for "172.24.0.1"
```

Test Configuration Syntax & Reload Apache Service

Test the syntax of “httpd.conf” file and “reload” the “httpd” service.

```
[root@master html]# service httpd configtest
AH00548: NameVirtualHost has no effect and will be removed in the next release /etc/httpd/conf/httpd.conf:
354
Syntax OK
[root@master html]# apachectl configtest
AH00548: NameVirtualHost has no effect and will be removed in the next release /etc/httpd/conf/httpd.conf:
354
Syntax OK
[root@master html]# httpd -t
AH00548: NameVirtualHost has no effect and will be removed in the next release /etc/httpd/conf/httpd.conf:
354
Syntax OK
[root@master html]#
[root@master html]# systemctl reload httpd
[root@master html]#
```

Test From Master

Try to access all 3 sites by using “elinks”. We are able to access all the web sites.

```
[root@master html]# elinks --dump http://www.example1.com
   wel to example1 site
[root@master html]#
[root@master html]# elinks --dump http://www.example2.com
   wel to example2 site
[root@master html]#
[root@master html]# elinks --dump http://www.example3.com
   wel to example3 site
```

Test From C10

Try to access all 3 sites by using “elinks”. We are able to access all the web sites.

```
[root@c10 ~]# cat /etc/hosts
127.0.0.1   localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6
172.24.0.10 c10.example.com c10
172.24.0.1  www.example1.com www
172.24.0.1  www.example2.com www
172.24.0.1  www.example3.com www
[root@c10 ~]#
[root@c10 ~]# elinks --dump http://www.example1.com
   wel to example1 site
[root@c10 ~]#
[root@c10 ~]# elinks --dump http://www.example2.com
   wel to example2 site
[root@c10 ~]#
[root@c10 ~]# elinks --dump http://www.example3.com
   wel to example3 site
```

Test From C20

Try to access all 3 sites by using “elinks”. We are able to access all the web sites.

```
[root@c20 ~]# cat /etc/hosts
127.0.0.1   localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6
172.24.0.20 c20.example.com c20
172.24.0.1  www.example1.com www
172.24.0.1  www.example2.com www
172.24.0.1  www.example3.com www
[root@c20 ~]#
[root@c20 ~]# elinks --dump http://www.example1.com
   wel to example1 site
[root@c20 ~]#
[root@c20 ~]# elinks --dump http://www.example2.com
   wel to example2 site
[root@c20 ~]#
[root@c20 ~]# elinks --dump http://www.example3.com
   wel to example3 site
```

Test From C20

Try to ping all 3 sites. All the web sites are returning the same IP address “172.24.0.1”.

```
[root@c20 ~]# ping -c1 www.example1.com
PING www.example1.com (172.24.0.1) 56(84) bytes of data.
64 bytes from www.example1.com (172.24.0.1): icmp_seq=1 ttl=64 time=0.379 ms

--- www.example1.com ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 0.379/0.379/0.379/0.000 ms
[root@c20 ~]#
[root@c20 ~]# ping -c1 www.example2.com
PING www.example2.com (172.24.0.1) 56(84) bytes of data.
64 bytes from www.example1.com (172.24.0.1): icmp_seq=1 ttl=64 time=0.290 ms

--- www.example2.com ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 0.290/0.290/0.290/0.000 ms
[root@c20 ~]#
[root@c20 ~]# ping -c1 www.example3.com
PING www.example3.com (172.24.0.1) 56(84) bytes of data.
64 bytes from www.example1.com (172.24.0.1): icmp_seq=1 ttl=64 time=0.261 ms

--- www.example3.com ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 0.261/0.261/0.261/0.000 ms
```

Try To Access Websites By IP Address

Access Websites Using IP address “172.24.0.1”. Which website will be shown?

elinks --dump http://172.24.0.1