

Renee Ammerman

ITON1748

9/22/20

Lab 5

1. Yum- I used the commands “yum search httpd” and “yum list |grep httpd”. The search command shows the package name and description for the Apache Web Server, the grep command shows the available installs for the package.

```
user1@server11:/  
File Edit View Search Terminal Help  
Warning: failed loading '/etc/yum.repos.d/dvd.repo', skipping.  
Last metadata expiration check: 0:10:50 ago on Tue 22 Sep 2020 10:14:37 AM EDT.  
===== Name Exactly Matched: httpd =====  
httpd.x86_64 : Apache HTTP Server  
===== Name & Summary Matched: httpd =====  
centos-logos-httpd.noarch : CentOS-related icons and pictures used by httpd  
keycloak-httpd-client-install.noarch : Tools to configure Apache HTTPD as  
: Keycloak client  
python3-keycloak-httpd-client-install.noarch : Tools to configure Apache HTTPD  
: as Keycloak client  
===== Name Matched: httpd =====  
httpd-devel.x86_64 : Development interfaces for the Apache HTTP server  
httpd-tools.x86_64 : Tools for use with the Apache HTTP Server  
httpd-manual.noarch : Documentation for the Apache HTTP server  
libmicrohttpd.i686 : Lightweight library for embedding a webserver in  
: applications  
libmicrohttpd.x86_64 : Lightweight library for embedding a webserver in  
: applications  
httpd-filesystem.noarch : The basic directory layout for the Apache HTTP server  
===== Summary Matched: httpd =====  
mod_dav_svn.x86_64 : Apache httpd module for Subversion server  
mod_auth_mellon.x86_64 : A SAML 2.0 authentication module for the Apache Httpd  
: Server  
[user1@server11 ~]$
```

```
user1@server11:/  
File Edit View Search Terminal Help  
: Server  
[user1@server11 ~]$ yum list |grep httpd  
Warning: failed loading '/etc/yum.repos.d/dvd.repo', skipping.  
centos-logos-httpd.noarch 80.5-2.el8  
dvd-BaseOS  
httpd.x86_64 2.4.37-21.module_el8.2.0+38  
2+15b0afa8 dvd-AppStream  
httpd-devel.x86_64 2.4.37-21.module_el8.2.0+38  
2+15b0afa8 dvd-AppStream  
httpd-filesystem.noarch 2.4.37-21.module_el8.2.0+38  
2+15b0afa8 dvd-AppStream  
httpd-manual.noarch 2.4.37-21.module_el8.2.0+38  
2+15b0afa8 dvd-AppStream  
httpd-tools.x86_64 2.4.37-21.module_el8.2.0+38  
2+15b0afa8 dvd-AppStream  
keycloak-httpd-client-install.noarch 1.0-2.el8  
dvd-AppStream  
libmicrohttpd.i686 1:0.9.59-2.el8  
dvd-BaseOS  
libmicrohttpd.x86_64 1:0.9.59-2.el8  
dvd-BaseOS  
python3-keycloak-httpd-client-install.noarch 1.0-2.el8  
dvd-AppStream  
[user1@server11 ~]$
```

2. Installing package- I typed “yum install httpd” to install the Apache server. To run the package I typed “systemctl start httpd” and to ensure it was running I typed “systemctl status httpd”.

```
root@server11:~  
File Edit View Search Terminal Help  
mod_http2-1.11.3-3.module_el8.2.0+307+4d18d695.x86_64  
  
Complete!  
[root@server11 ~]# systemctl start httpd  
[root@server11 ~]# systemctl status httpd  
● httpd.service - The Apache HTTP Server  
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: enabled)  
   Active: active (running) since Tue 2020-09-22 10:32:15 EDT; 10s ago  
     Docs: man:httpd.service(8)  
   Main PID: 289514 (httpd)  
    Status: "Running, listening on: port 80"  
   Tasks: 213 (limit: 4863)  
  Memory: 22.1M  
     CGroup: /system.slice/httpd.service  
            └─289514 /usr/sbin/httpd -DFOREGROUND  
              └─289515 /usr/sbin/httpd -DFOREGROUND  
                └─289516 /usr/sbin/httpd -DFOREGROUND  
                  └─289517 /usr/sbin/httpd -DFOREGROUND  
                    └─289518 /usr/sbin/httpd -DFOREGROUND  
  
Sep 22 10:32:14 server11.example.com systemd[1]: Starting The Apache HTTP Server:  
Sep 22 10:32:15 server11.example.com systemd[1]: Started The Apache HTTP Server:  
Sep 22 10:32:15 server11.example.com httpd[289514]: Server configured, listening  
lines 1-18/18 (END)
```

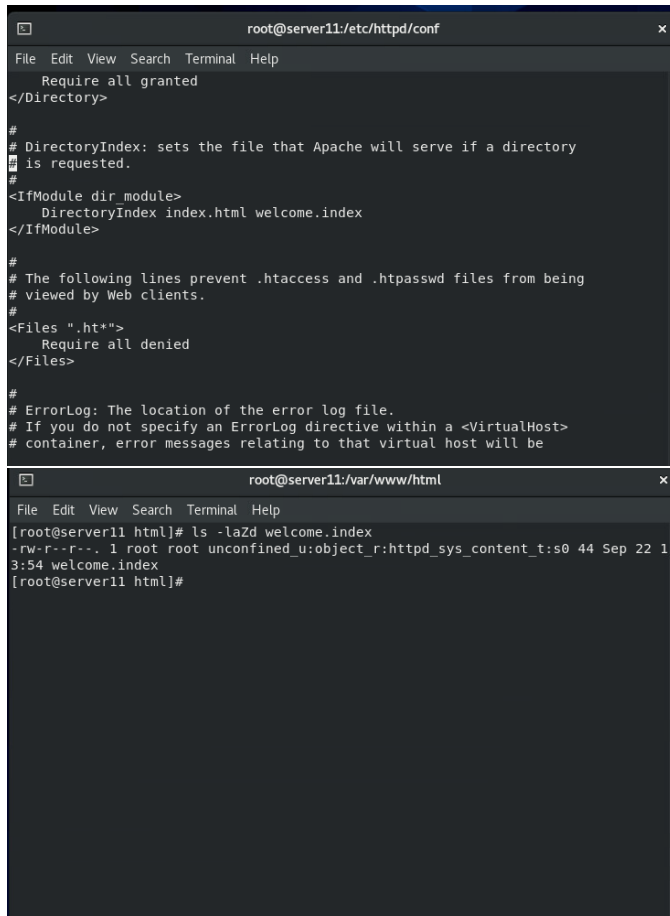
3. Using Yum- I used the command “yum groups list hidden”, I then typed “yum info ‘basic web server’”. After ensuring Apache was a part of this package, I typed “yum groupinstall ‘basic web server’”.

```
root@server11:~  
File Edit View Search Terminal Help  
  
Is this ok [y/N]: y  
Downloading Packages:  
Running transaction check  
Transaction check succeeded.  
Running transaction test  
Transaction test succeeded.  
Running transaction  
  Preparing      :  
  Installing     : mod_ssl-1:2.4.37-21.module_el8.2.0+382+15b0afa8.x86_64 1/1  
  Installing     : mod_fcgid-2.3.9-16.el8.x86_64 1/3  
  Installing     : httpd-manual-2.4.37-21.module_el8.2.0+382+15b0afa8.noarch 2/3  
  Running scriptlet: httpd-manual-2.4.37-21.module_el8.2.0+382+15b0afa8.noarch 3/3  
  Verifying      : httpd-manual-2.4.37-21.module_el8.2.0+382+15b0afa8.noarch 1/3  
  Verifying      : mod_fcgid-2.3.9-16.el8.x86_64 2/3  
  Verifying      : mod_ssl-1:2.4.37-21.module_el8.2.0+382+15b0afa8.x86_64 3/3  
Installed products updated.  
  
Installed:  
  httpd-manual-2.4.37-21.module_el8.2.0+382+15b0afa8.noarch  
  mod_fcgid-2.3.9-16.el8.x86_64  
  mod_ssl-1:2.4.37-21.module_el8.2.0+382+15b0afa8.x86_64  
  
Complete!  
[root@server11 ~]#
```

4. Permissions- I used the command “ls -laZd” to view the permissions and the SELinux associated with the Apache main config file and the document root.

```
root@server11:/etc/httpd/conf  
File Edit View Search Terminal Help  
  
[root@server11 conf]# ls -laZd /etc/httpd/conf/httpd.conf  
-rw-r--r--. 1 root root system_u:object_r:httpd_config_t:s0 11899 Jun  8 16:12 /  
etc/httpd/conf/httpd.conf  
[root@server11 conf]# ls -laZd /var/www/html  
drwxr-xr-x. 2 root root system_u:object_r:httpd_sys_content_t:s0 6 Jun  8 16:16  
/var/www/html  
[root@server11 conf]#
```

5. Configuration- By using “vi httpd.conf” I was able to edit the configuration file. I added welcome.index to the Directory Index field. After this is typed the command “ls -laZd welcome.index” to view the permissions/SELinux. The file was changed to from “system” to “unconfined”.



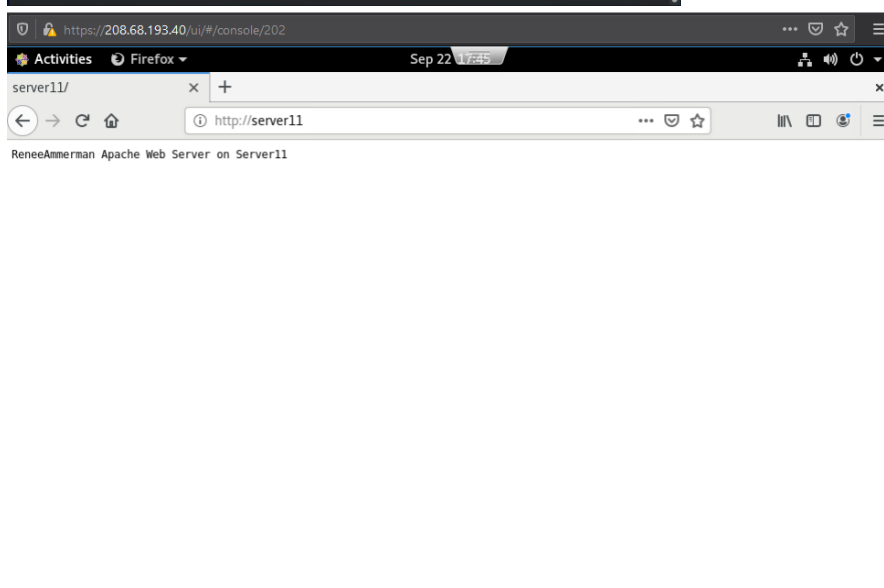
```
root@server11:/etc/httpd/conf
File Edit View Search Terminal Help
Require all granted
</Directory>

#
# DirectoryIndex: sets the file that Apache will serve if a directory
# is requested.
#
<IfModule dir_module>
    DirectoryIndex index.html welcome.index
</IfModule>

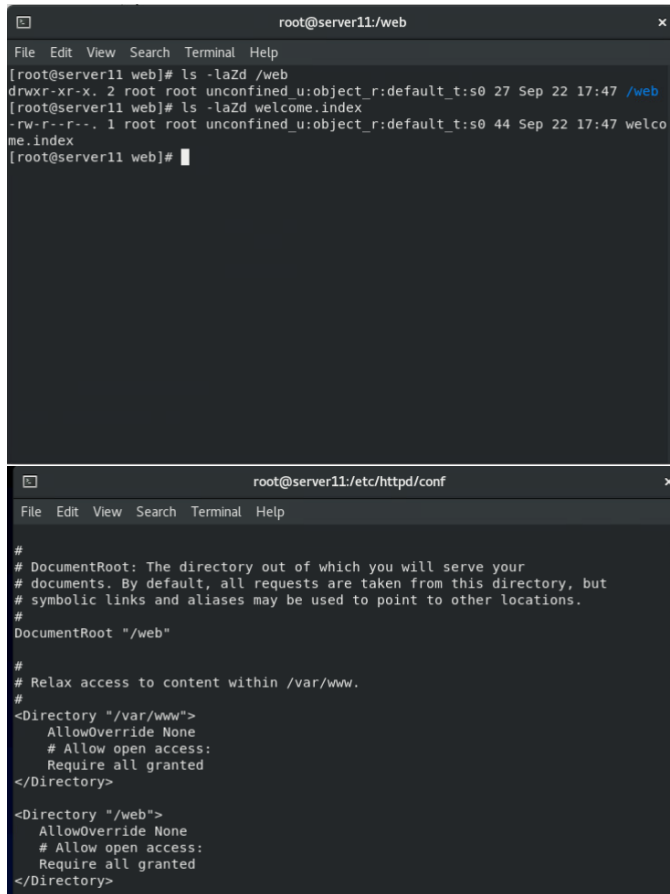
#
# The following lines prevent .htaccess and .htpasswd files from being
# viewed by Web clients.
#
<Files ".ht*">
    Require all denied
</Files>

#
# ErrorLog: The location of the error log file.
# If you do not specify an ErrorLog directive within a <VirtualHost>
# container, error messages relating to that virtual host will be

root@server11:/var/www/html
File Edit View Search Terminal Help
[root@server11 html]# ls -laZd welcome.index
-rw-r--r-- 1 root root unconfined_u:object_r:httpd_sys_content_t:s0 44 Sep 22 1
3:54 welcome.index
[root@server11 html]#
```



6. Configuration- I created the “/web” directory using “mkdir /web”, I copied the “welcome.index” file to the /web directory using “cp /var/www/html/welcome.index /web”. The SELinux is different than step 4 because it has changed the type to default. The /web directory has the same permissions as the /var/www/html directory. I went back to the configuration file and added /web to the Document root, and added a directory block for /web. I went back to the web browser and it did display the home page. I used “getenforce” to get the SELinux status. I displayed the homepage again in the web browser.

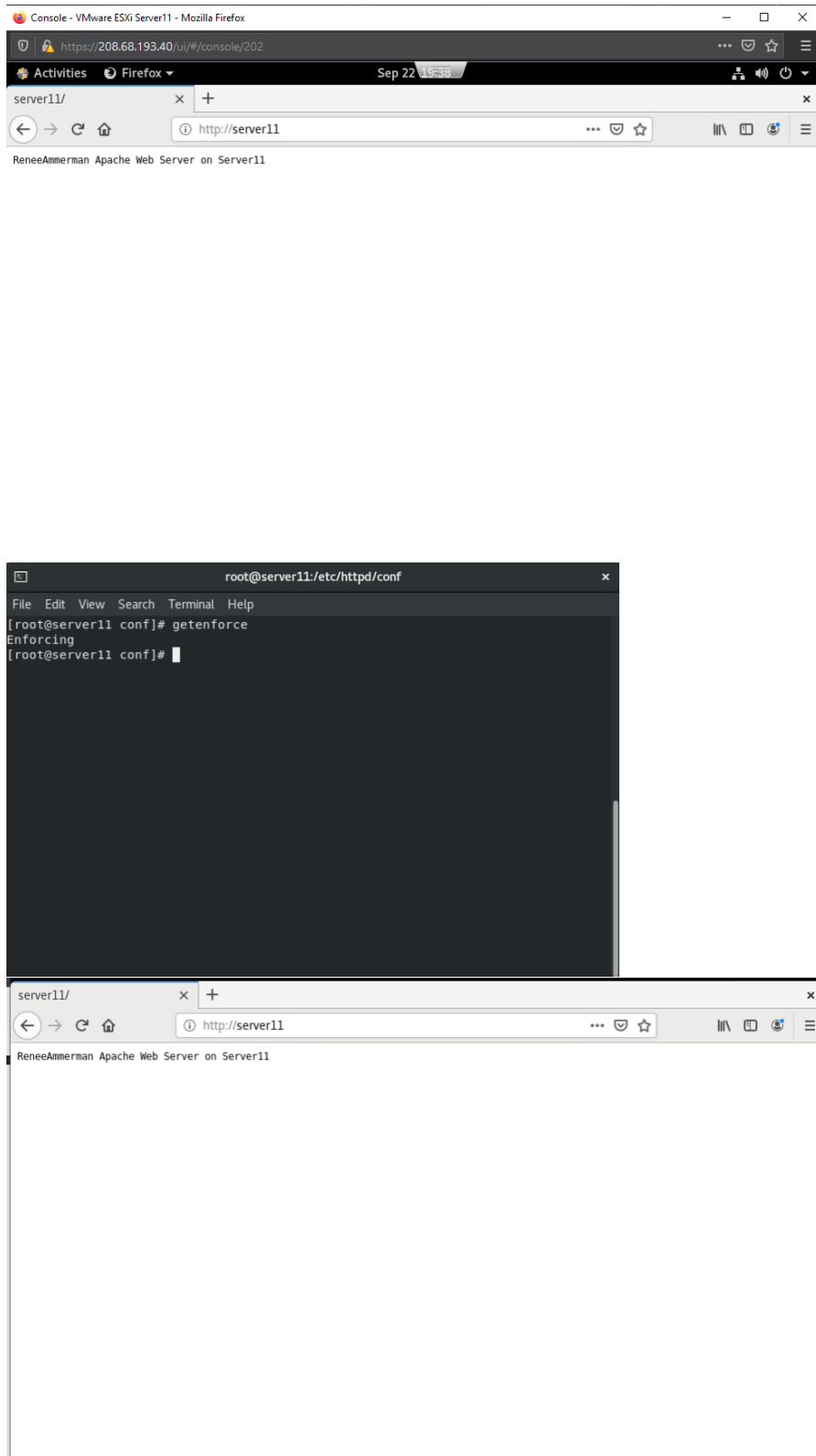


The image contains two terminal window screenshots. The top window, titled 'root@server11:/web', shows the execution of 'ls -laZd /web' and 'ls -laZd welcome.index', displaying SELinux context and permissions. The bottom window, titled 'root@server11:/etc/httpd/conf', shows the configuration of the httpd.conf file, specifically the DocumentRoot and Directory blocks for /web.

```
root@server11:/web
File Edit View Search Terminal Help
[root@server11 web]# ls -laZd /web
drwxr-xr-x. 2 root root unconfined_u:object_r:default_t:s0 27 Sep 22 17:47 /web
[root@server11 web]# ls -laZd welcome.index
-rw-r--r--. 1 root root unconfined_u:object_r:default_t:s0 44 Sep 22 17:47 welco
me.index
[root@server11 web]#
```

```
root@server11:/etc/httpd/conf
File Edit View Search Terminal Help
#
# DocumentRoot: The directory out of which you will serve your
# documents. By default, all requests are taken from this directory, but
# symbolic links and aliases may be used to point to other locations.
#
DocumentRoot "/web"
#
# Relax access to content within /var/www.
#
<Directory "/var/www">
    AllowOverride None
    # Allow open access:
    Require all granted
</Directory>

<Directory "/web">
    AllowOverride None
    # Allow open access:
    Require all granted
</Directory>
```



7. Client- I typed "curl http://server11/welcome.index" , It returned the contents of the welcome.index file.

```
root@server11:/etc/httpd/conf
File Edit View Search Terminal Help
[root@server11 conf]# curl http://server11/welcome.index
ReneeAmmerman Apache Web Server on Server11
[root@server11 conf]#
```