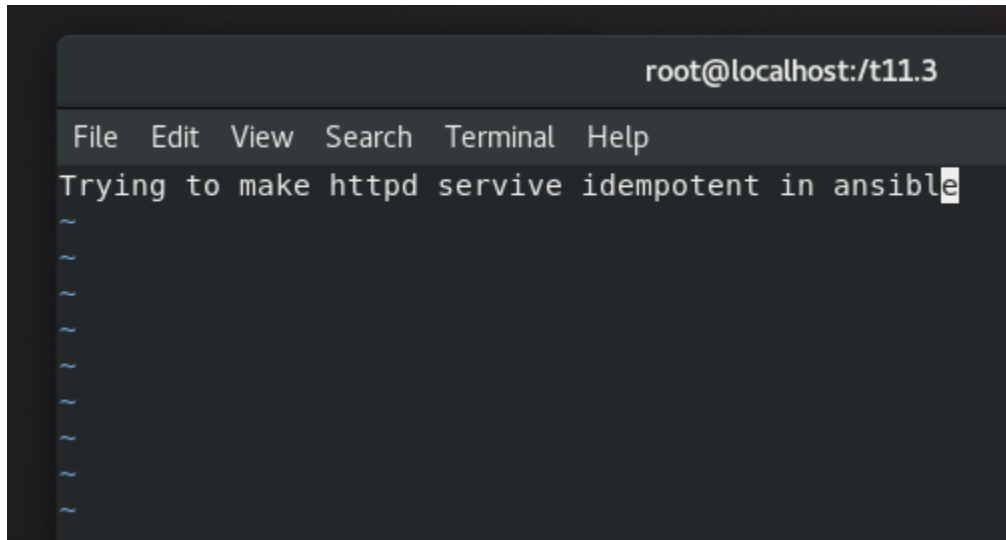
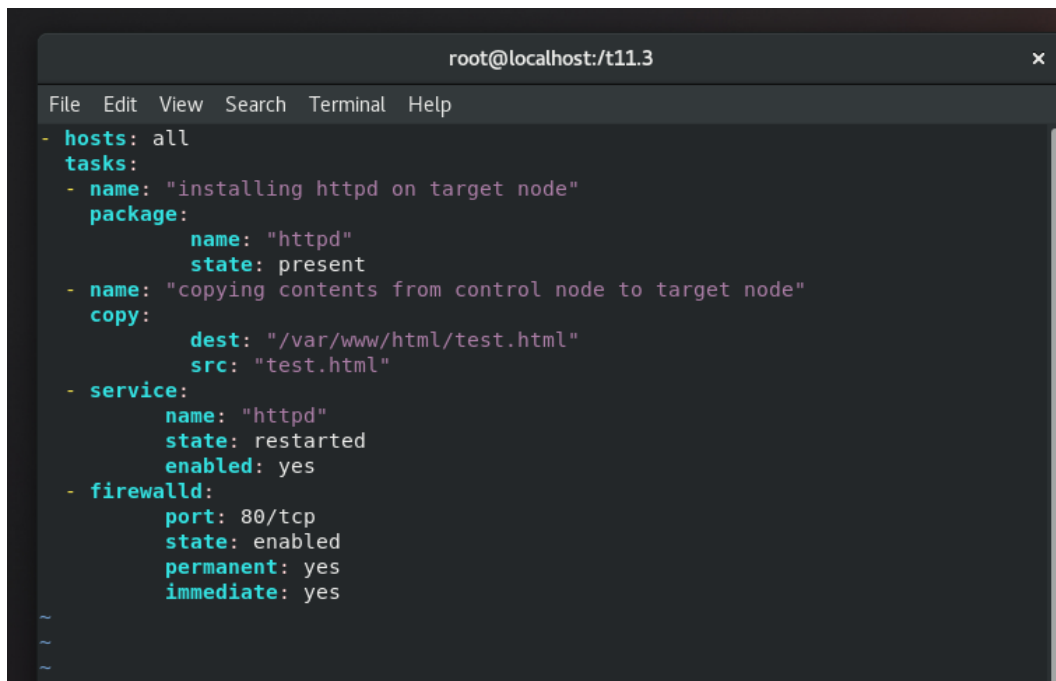


Achieving Idempotency in httpd using handlers:

The goal is to **make httpd services idempotent using handlers and notify**. For that, we shall first create a playbook just like we have already created in the previous repos. We began by creating an html file as follows:



Now, we write a playbook that will go to the target node and set up the httpd service and launch this html file over the web



Save the playbook and run it using **ansible-playbook xyz.yml**. We see the following changes in the configuration:

Files have been copied to the target node and service has been started. Also, the webpage has been hosted.

```
root@localhost:/t11.3
File Edit View Search Terminal Help
deprecation_warnings=False in ansible.cfg.

PLAY [all] *****

TASK [Gathering Facts] *****
ok: [192.168.43.144]

TASK [installing httpd on target node] *****
ok: [192.168.43.144]

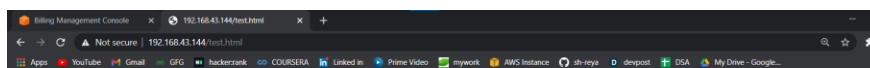
TASK [copying contents from control node to target node] *****
changed: [192.168.43.144]

TASK [service] *****
changed: [192.168.43.144]

TASK [firewalld] *****
ok: [192.168.43.144]

PLAY RECAP *****
192.168.43.144 : ok=5    changed=2    unreachable=0    failed=0    s
kipped=0    rescued=0    ignored=0

[root@localhost t11.3]#
```



Trying to make httpd serve idempotent in ansible

We shall do changes in the configuration file of httpd.

```
root@localhost:/t11.3
File Edit View Search Terminal Help
Listen 1802

<VirtualHost 192.168.43.144:1802>
DocumentRoot /var/www/akshay
</VirtualHost>
~
~
~
```

We have changed the port number from 80 to 1802 and made the default directory named akshay.

We use handlers and notify to manage idempotency. If we make any changes in the configuration file, services will remain green and handler will work. If there is no change in the configuration file, handlers will become yellow.

```
root@localhost:/t11.3
File Edit View Search Terminal Help
dest: "/etc/httpd/conf.d/new.conf"
src: "new.conf"
notify:
  restart httpd
- name: "copying contents from control node to target node"
copy:
  dest: "/var/www/html/try.html"
  src: "try.html"
- service:
  name: "httpd"
  state: started
  enabled: yes
- firewalld:
  port: 1802/tcp
  state: enabled
  permanent: yes
  immediate: yes
handlers:
- name: "restart httpd"
  service:
    name: "httpd"
    state: restarted
-- INSERT -- 35,1 Bot
```

```
root@localhost:/t11.3
File Edit View Search Terminal Help
TASK [installing httpd on target node] *****
ok: [192.168.43.144]

TASK [file] *****
changed: [192.168.43.144]

TASK [changing the configuration] *****
changed: [192.168.43.144]

TASK [copying contents from control node to target node] *****
ok: [192.168.43.144]

TASK [service] *****
ok: [192.168.43.144]

TASK [firewalld] *****
ok: [192.168.43.144]

RUNNING HANDLER [restart httpd] *****
changed: [192.168.43.144]

PLAY RECAP *****
192.168.43.144 : ok=8 changed=3 unreachable=0 failed=0 skipped=0
kipped=0 rescued=0 ignored=0
Enterprise Linux
```

If we run this playbook again, handlers will not show up and all module will remain green.

```
ok: [192.168.43.174]

TASK [Installing Httpd] *****
ok: [192.168.43.174]

TASK [Creating Directory] *****
ok: [192.168.43.174]

TASK [changing the conf file] *****
ok: [192.168.43.174]

TASK [copying the file in document root] *****
ok: [192.168.43.174]

TASK [Starting The services of httpd] *****
ok: [192.168.43.174]

TASK [firewalld] *****
ok: [192.168.43.174]

PLAY RECAP *****
192.168.43.174 : ok=7  changed=0  unreachable=0  failed=0  skipped=0
               rescued=0  ignored=0
```

We shall use **netstat -tnlp** on the target node to check if this port number is active.

We can see that the port number 1802 is active.

```
tcp6      0      0 :::4001          :::*              LISTEN
11489/httpd
tcp6      0      0 :::1802          :::*              LISTEN
11489/httpd
```



Trying to make httpd service idempotent in Ansible