ARTH Task 11.1

Configuring Hadoop Cluster Using Ansible Playbook

1.Check for Ansible Installed in Masternode

```
[root@MiWiFi-R3L-srv ansible]# ansible --version
ansible 2.10.6
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/root/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/local/lib/python3.6/site-packages/ansible
  executable location = /usr/local/bin/ansible
  python version = 3.6.8 (default, Jan 11 2019, 02:17:16) [GCC 8.2.1 20180905 (Red Hat 8.2.1-3)]
```

2.Configure the Hosts

RedHat_Master [Running] - Oracle VM VirtualBox

Activities Text Editor Tue 19:10

Open myhost.txt

```
[NameNode]
192.168.31.181 ansible_user=root ansible_password=1234 ansible_connection=ssh

[DataNode]
192.168.31.87  ansible_user=root ansible_password=1234 ansible_connection=ssh
```

3.Check if Hosts Configured Properly

```
[root@MiWiFi-R3L-srv ~]# ansible all --list-hosts
  hosts (2):
    192.168.31.181
    192.168.31.87
[root@MiWiFi-R3L-srv ~]#
```

4.Check for Connectivity with the Slave Nodes

```
[root@MiWiFi-R3L-srv ~]# ansible all -m ping
192.168.31.181 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/libexec/platform-python"
    },
    "changed": false,
    "ping": "pong"
}
192.168.31.87 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/libexec/platform-python"
    },
    "changed": false,
    "ping": "pong"
}
```

5. Configuring NameNode using Playbook

Open

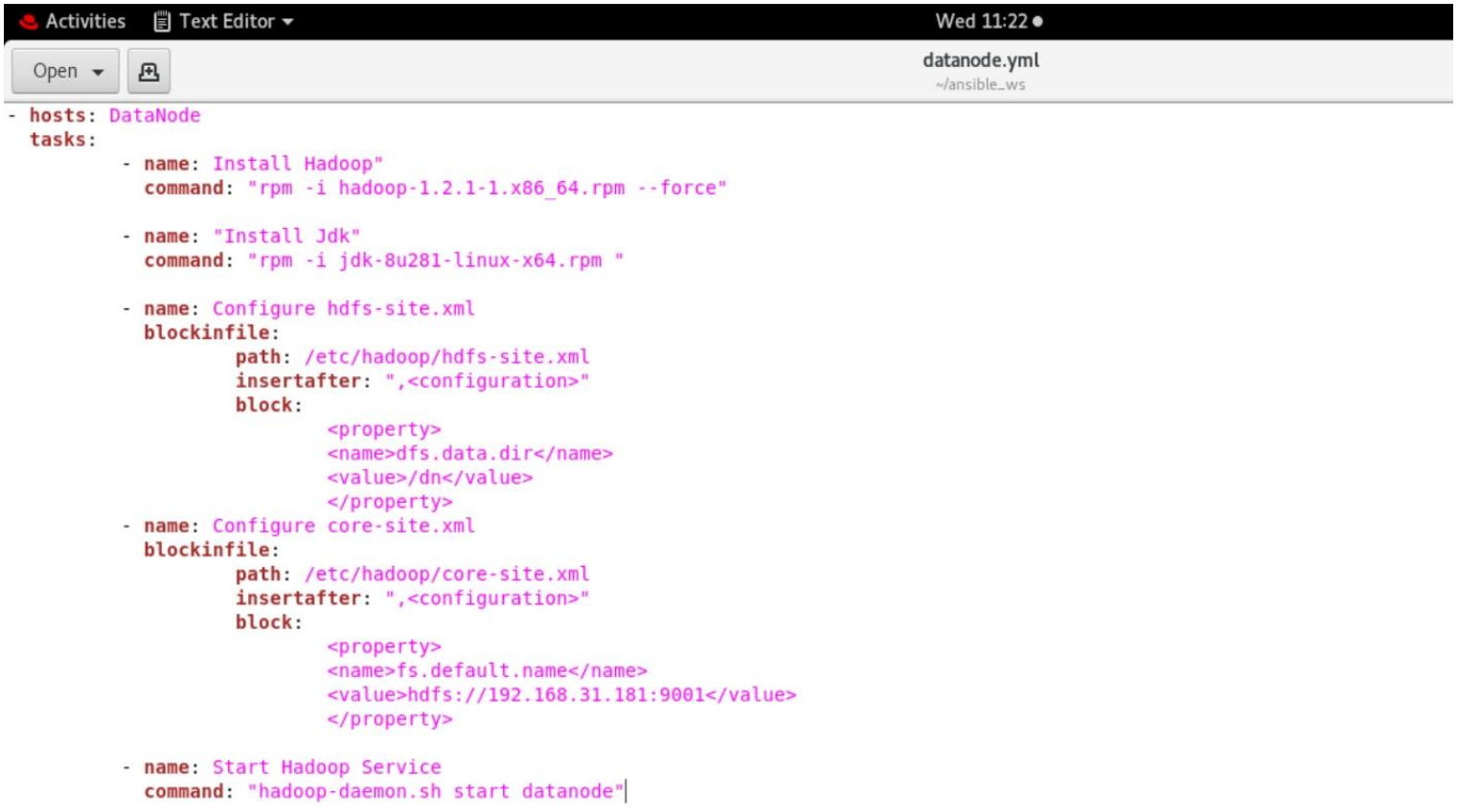
hadoop.yml
~/ansible_ws

```
- hosts: NameNode
  tasks:
        - name: Install Hadoop"
          command: "rpm -i hadoop-1.2.1-1.x86_64.rpm --force"

        - name: "Install Jdk"
          command: "rpm -i jdk-8u281-linux-x64.rpm "

        - name: Configure hdfs-site.xml
          blockinfile:
                path: /etc/hadoop/hdfs-site.xml
                insertafter: ",<configuration>"
                block:
                        <property>
                        <name>dfs.name.dir</name>
                        <value>/nn</value>
                        </property>
        - name: Configure core-site.xml
          blockinfile:
                path: /etc/hadoop/core-site.xml
                insertafter: ",<configuration>"
                block:
                        <property>
                        <name>fs.default.name</name>
                        <value>hdfs://0.0.0.0:9001</value>
                        </property>


        - name: Start Hadoop Service
          command: "hadoop-daemon.sh start namenode"
```

NameNode Configured

```
[root@MiWiFi-R3L-srv ansible_ws]# ansible-playbook hadoop.yml

PLAY [NameNode] ****************************************************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************************************
ok: [192.168.31.181]

TASK [Install Hadoop"] *********************************************************************************************************************************************************
changed: [192.168.31.181]

TASK [Install Jdk] *************************************************************************************************************************************************************
changed: [192.168.31.181]

TASK [Configure hdfs-site.xml] *************************************************************************************************************************************************
ok: [192.168.31.181]

TASK [Configure core-site.xml] *************************************************************************************************************************************************
ok: [192.168.31.181]

TASK [Start Hadoop Service] ****************************************************************************************************************************************************
changed: [192.168.31.181]

PLAY RECAP *********************************************************************************************************************************************************************
192.168.31.181             : ok=6    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

6. Configure DataNode using Ansible Playbook



DataNode Configured

```
[root@MiWiFi-R3L-srv ansible_ws]# ansible-playbook datanode.yml

PLAY [DataNode] ****************************************************************************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************************************************************
ok: [192.168.31.87]

TASK [Install Hadoop"] *********************************************************************************************************************************************************
changed: [192.168.31.87]

TASK [Install Jdk] *************************************************************************************************************************************************************
changed: [192.168.31.87]

TASK [Configure hdfs-site.xml] *************************************************************************************************************************************************
changed: [192.168.31.87]

TASK [Configure core-site.xml] *************************************************************************************************************************************************
changed: [192.168.31.87]

TASK [Start Hadoop Service] ****************************************************************************************************************************************************
changed: [192.168.31.87]

PLAY RECAP *********************************************************************************************************************************************************************
192.168.31.87              : ok=6    changed=5    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

7. Now checking if MasterNode configured Properly

```
[root@MiWiFi-R3L-srv /]# jps
4038 Jps
3963 NameNode
```

8. Checking if DataNode configured Properly

```
[root@MiWiFi-R3L-srv ~]# jps
3330 DataNode
3398 Jps
```

9. Check Connectivity

```
[root@MiWiFi-R3L-srv ~]# hadoop dfsadmin -report
Configured Capacity: 5.00 GB (5242880 KB)
Present Capacity: 4.88 GB (5117051 KB)
DFS Remaining: 4.81 GB (5043650 KB)
DFS Used:  (73401 KB)
DFS Used%: 2%
Under replicated blocks: 0
Blocks with corrupt replicas: 0
Missing blocks: 0

-------------------------------------------------
Datanodes available: 1 (1 total, 0 dead)
```