

Slurm Assignment:HemanthReddyYaramala

1. Create the instance with EBS volume 20GB.

```
hemanth@sh01:~$ aws cloudformation describe-stacks --stack-name csye-hemanth-c04
{
  "Stacks": [
    {
      "StackId": "arn:aws:cloudformation:us-east-1:332987686862:stack/csye-hemanth-c04/c2f3c020-d4ef-11ed-9c19-124518f13765",
      "StackName": "csye-hemanth-c04",
      "Description": "AWS CloudFormation Template EC2 Instance",
      "Parameters": [
        {
          "ParameterKey": "KeyName",
          "ParameterValue": "CSYE7374Spring23"
        },
        {
          "ParameterKey": "VpcId",
          "ParameterValue": "vpc-07ca61e3eaa4073d"
        },
        {
          "ParameterKey": "SubnetId",
          "ParameterValue": "subnet-0583ac8cb2fda0cb1"
        },
        {
          "ParameterKey": "InstanceTypeT3S",
          "ParameterValue": "t3.small"
        },
        {
          "ParameterKey": "AssetNameDC01",
          "ParameterValue": "csye-hemanth-c04"
        },
        {
          "ParameterKey": "EBSSize20G",
          "ParameterValue": "20"
        },
        {
          "ParameterKey": "UbuntuImageId",
          "ParameterValue": "ami-083654bd07b5da81d"
        }
      ],
      "CreationTime": "2023-04-07T02:56:15.227Z",
      "RollbackConfiguration": {},
      "StackStatus": "CREATE_COMPLETE",
      "DisableRollback": false,
      "NotificationARNs": [],
      "Capabilities": [
        "CAPABILITY_IAM"
      ],
      "Tags": [],
    }
  ]
}
```

2. Cron ind WS uptime less than 48 hours per week

This cronjob will automatically start and stop the instance which is less than 48 hours per week

Setting a cron job to only start EC2 at work period

```
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h dom mon dow  command
0 9-17 * * 1-5 aws ec2 start-instances --instance-ids i-0586645de35467026

0 18 * * 1-5 aws ec2 stop-instances --instance-ids i-0586645de35467026
```

3. Configure ind WS as the Slurm work node of cluster p01, refer to

cmdDemo example

```
hemanth@sh01:/a/util/ansible$ cd ..
hemanth@sh01:/a/util$ cd ../
hemanth@sh01:/a$ cd ../
hemanth@sh01:/a$ hst=i-hemanth
hemanth@sh01:/a$ cd /a/util/ansible
hemanth@sh01:/a/util/ansible$ ansible-playbook -e vh=${hst} -e tk=osLib c74.yml

PLAY [i-hemanth] *****

TASK [Gathering Facts] *****
ok: [i-hemanth]

TASK [c74 : Populate service facts] *****
ok: [i-hemanth]

TASK [c74 : update cmd] *****
changed: [i-hemanth] => (item=dpkg --configure -a)

TASK [c74 : install OS packages] *****
ok: [i-hemanth]

TASK [c74 : install lua,efs] *****
changed: [i-hemanth] => (item=bash /a/util/demo/config/lmod_config.sh)
changed: [i-hemanth] => (item=apt install -y /a/util/demo/efs-utils/build/amazon-efs-utils*deb)

TASK [c74 : apt autoremove autoclean] *****
ok: [i-hemanth]

PLAY RECAP *****
i-hemanth : ok=6 changed=2 unreachable=0 failed=0 skipped=26 rescued=0 ignored=0
```

```
hemanth@sh01:/a/util/ansible$ ansible-playbook -i hosts.ubuntu.common -e vh=${hst} -e tk=pushrc c74.yml

PLAY [i-hemanth] *****

TASK [Gathering Facts] *****
ok: [i-hemanth]

TASK [c74 : Populate service facts] *****
ok: [i-hemanth]

TASK [c74 : file stat] *****
ok: [i-hemanth] => (item={'src': 'fstabs', 'dest': '/etc/fstab', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True})
ok: [i-hemanth] => (item={'src': 'sshd_config', 'dest': '/etc/ssh/sshd_config', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True})
ok: [i-hemanth] => (item={'src': 'hosts', 'dest': '/etc/hosts', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True})
ok: [i-hemanth] => (item={'src': 'sudoers', 'dest': '/etc/sudoers', 'owner': 'root', 'group': 'root', 'mode': '0440', 'backup': True})

TASK [c74 : push default unified files] *****
ok: [i-hemanth] => (item={'changed': False, 'stat': {'exists': False, 'invocation': {'module_args': {'path': '/a/util/ansible/facts/c74/pushback/fstabs/i-hemanth_fstabs', 'follow': False, 'get_md5': False, 'get_checksum': True, 'get_mime': True, 'get_attributes': True, 'checksum_algorithm': 'sha1'}}, 'failed': False, 'item': {'src': 'fstabs', 'dest': '/etc/fstab', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True}, 'ansible_loop_var': 'item'}})
ok: [i-hemanth] => (item={'changed': False, 'stat': {'exists': False, 'invocation': {'module_args': {'path': '/a/util/ansible/facts/c74/pushback/sshd_config/i-hemanth_sshd_config', 'follow': False, 'get_md5': False, 'get_checksum': True, 'get_mime': True, 'get_attributes': True, 'checksum_algorithm': 'sha1'}}, 'failed': False, 'item': {'src': 'sshd_config', 'dest': '/etc/ssh/sshd_config', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True}, 'ansible_loop_var': 'item'}})
ok: [i-hemanth] => (item={'changed': False, 'stat': {'exists': False, 'invocation': {'module_args': {'path': '/a/util/ansible/facts/c74/pushback/hosts/i-hemanth_hosts', 'follow': False, 'get_md5': False, 'get_checksum': True, 'get_mime': True, 'get_attributes': True, 'checksum_algorithm': 'sha1'}}, 'failed': False, 'item': {'src': 'hosts', 'dest': '/etc/hosts', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True}, 'ansible_loop_var': 'item'}})
ok: [i-hemanth] => (item={'changed': False, 'stat': {'exists': False, 'invocation': {'module_args': {'path': '/a/util/ansible/facts/c74/pushback/sudoers/i-hemanth_sudoers', 'follow': False, 'get_md5': False, 'get_checksum': True, 'get_mime': True, 'get_attributes': True, 'checksum_algorithm': 'sha1'}}, 'failed': False, 'item': {'src': 'sudoers', 'dest': '/etc/sudoers', 'owner': 'root', 'group': 'root', 'mode': '0440', 'backup': True}, 'ansible_loop_var': 'item'}})

TASK [c74 : push rc unified files] *****
ok: [i-hemanth] => (item={'src': 'sh/c74.sh', 'dest': '/etc/profile.d/c74.sh', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': False})

TASK [c74 : link lmod etc unified files] *****
ok: [i-hemanth] => (item={'src': '/a/apps/gb/lmod/lmod/init/profile', 'dest': '/etc/profile.d/z00_lmod.sh', 'owner': 'root', 'group': 'root', 'state': 'link'})

TASK [c74 : singularity state dir] *****
ok: [i-hemanth] => (item={'path': '/var/lib/singularity', 'owner': 'root', 'group': 'root', 'state': 'directory', 'recurse': True})

TASK [c74 : add profile.d to /etc/profile.d] *****
```

```
hemanth@sh01:/a/util/ansible$ ansible-playbook -e vh=${hst} -e tk=newWh c74.yml

PLAY [i-hemanth] *****

TASK [Gathering Facts] *****
ok: [i-hemanth]

TASK [c74 : Populate service facts] *****
ok: [i-hemanth]

TASK [c74 : update cmd] *****
changed: [i-hemanth] => (item=dpkg --configure -a)

TASK [c74 : install OS packages] *****
ok: [i-hemanth]

TASK [c74 : install lua,efs] *****
changed: [i-hemanth] => (item=bash /a/util/demo/config/lmod_config.sh)
changed: [i-hemanth] => (item=apt install -y /a/util/demo/efs-utils/build/amazon-efs-utils*deb)

TASK [c74 : apt autoremove autoclean] *****
ok: [i-hemanth]

TASK [c74 : file stat] *****
ok: [i-hemanth] => (item={'src': 'fstabs', 'dest': '/etc/fstab', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True})
ok: [i-hemanth] => (item={'src': 'sshd_config', 'dest': '/etc/ssh/sshd_config', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True})
ok: [i-hemanth] => (item={'src': 'hosts', 'dest': '/etc/hosts', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True})
ok: [i-hemanth] => (item={'src': 'sudoers', 'dest': '/etc/sudoers', 'owner': 'root', 'group': 'root', 'mode': '0440', 'backup': True})

TASK [c74 : push default unified files] *****
ok: [i-hemanth] => (item={'changed': False, 'stat': {'exists': False}, 'invocation': {'module_args': {'path': '/a/util/ansible/facts/c74/pushback/fstabs/i-hem
anth_fstabs', 'follow': False, 'get_md5': False, 'get_checksum': True, 'get_mime': True, 'get_attributes': True, 'checksum_algorithm': 'sha1'}}, 'failed': Fal
se, 'item': {'src': 'fstabs', 'dest': '/etc/fstab', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True, 'ansible_loop_var': 'item'}})
ok: [i-hemanth] => (item={'changed': False, 'stat': {'exists': False}, 'invocation': {'module_args': {'path': '/a/util/ansible/facts/c74/pushback/sshd_config/
i-hemanth_sshd_config', 'follow': False, 'get_md5': False, 'get_checksum': True, 'get_mime': True, 'get_attributes': True, 'checksum_algorithm': 'sha1'}}, 'fa
iled': False, 'item': {'src': 'sshd_config', 'dest': '/etc/ssh/sshd_config', 'owner': 'root', 'group': 'root', 'mode': '0644', 'backup': True, 'ansible_loop_
var': 'item'}})

```

```
hemanth@sh01:/a/util/ansible$ ansible-playbook -e vh=${hst} -e tk=sanity c74.yml

PLAY [i-hemanth] *****

TASK [Gathering Facts] *****
ok: [i-hemanth]

TASK [c74 : Populate service facts] *****
ok: [i-hemanth]

TASK [c74 : sanity checking] *****
changed: [i-hemanth] => (item=/a/apps/gb/slurm/22.05.6/sbin/slurmd -C)

TASK [c74 : report list] *****
ok: [i-hemanth] => (item={'changed': True, 'stdout': 'NodeName=ip-172-31-80-100 CPUs=2 Boards=1 SocketsPerBoard=1 CoresPerSocket=1 ThreadsPerCore=2 RealMemory
=1945\nUpTime=0-01:32:37', 'stderr': '', 'rc': 0, 'cmd': '/a/apps/gb/slurm/22.05.6/sbin/slurmd -C', 'start': '2023-04-07 07:11:44.492921', 'end': '2023-04-07
07:11:44.503855', 'delta': '0:00:00.010934', 'msg': '', 'invocation': {'module_args': {'_raw_params': '/a/apps/gb/slurm/22.05.6/sbin/slurmd -C', '_uses_shell'
: True, 'warn': False, 'stdin_add_newline': True, 'strip_empty_ends': True, 'argv': None, 'chdir': None, 'executable': None, 'creates': None, 'removes': None,
'stdin': None}}, 'stdout_lines': ['NodeName=ip-172-31-80-100 CPUs=2 Boards=1 SocketsPerBoard=1 CoresPerSocket=1 ThreadsPerCore=2 RealMemory=1945', 'UpTime=0-
01:32:37'], 'stderr_lines': [], 'failed': False, 'item': '/a/apps/gb/slurm/22.05.6/sbin/slurmd -C', 'ansible_loop_var': 'item'}) => {
  "msg": [
    "i-hemanth ['NodeName=ip-172-31-80-100 CPUs=2 Boards=1 SocketsPerBoard=1 CoresPerSocket=1 ThreadsPerCore=2 RealMemory=1945', 'UpTime=0-01:32:37']"
  ]
}

TASK [c74 : report yaml] *****
ok: [i-hemanth] => (item={'changed': True, 'stdout': 'NodeName=ip-172-31-80-100 CPUs=2 Boards=1 SocketsPerBoard=1 CoresPerSocket=1 ThreadsPerCore=2 RealMemory
=1945\nUpTime=0-01:32:37', 'stderr': '', 'rc': 0, 'cmd': '/a/apps/gb/slurm/22.05.6/sbin/slurmd -C', 'start': '2023-04-07 07:11:44.492921', 'end': '2023-04-07
07:11:44.503855', 'delta': '0:00:00.010934', 'msg': '', 'invocation': {'module_args': {'_raw_params': '/a/apps/gb/slurm/22.05.6/sbin/slurmd -C', '_uses_shell'
: True, 'warn': False, 'stdin_add_newline': True, 'strip_empty_ends': True, 'argv': None, 'chdir': None, 'executable': None, 'creates': None, 'removes': None,
'stdin': None}}, 'stdout_lines': ['NodeName=ip-172-31-80-100 CPUs=2 Boards=1 SocketsPerBoard=1 CoresPerSocket=1 ThreadsPerCore=2 RealMemory=1945', 'UpTime=0-
01:32:37'], 'stderr_lines': [], 'failed': False, 'item': '/a/apps/gb/slurm/22.05.6/sbin/slurmd -C', 'ansible_loop_var': 'item'}) => {
  "msg": [
    "/a/apps/gb/slurm/22.05.6/sbin/slurmd -C",
    "- NodeName=ip-172-31-80-100 CPUs=2 Boards=1 SocketsPerBoard=1 CoresPerSocket=1 ThreadsPerCore=2\n    RealMemory=1945\n~ UpTime=0-01:32:37\n"
  ]
}

```

```
hemanth@sh01:/a/util/ansible$ sinfo
PARTITION AVAIL TIMELIMIT NODES STATE NODELIST
c0* up infinite 1 idle i-yecheng
t0 up infinite 3 unk* t-blue,t-brown,t-green
t0 up infinite 2 idle t-black,t-red
i0 up infinite 1 down* i-nandikonda
i0 up infinite 5 unk* i-harshila,i-pramod,i-rajat,i-rushikesh,i-shreekara
i0 up infinite 10 idle i-akshata,i-dhruv,i-hemanth,i-kush,i-mayur,i-roja,i-sahithi,i-varsha,i-varun,i-venkata
i0 up infinite 2 down i-pawan,i-prem
hemanth@sh01:/a/util/ansible$
```

