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CPE 212-CPE31S2
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9/18/24
Prelim Exam

Tools Needed:

1. Control Node (CN) - 1
2. Manage Node (MN) - 1 Ubuntu
3. Manage Node (MN) - 1 CentOS

Procedure:

1. Note: You are required to create a document report of the steps you will do for this exam. All screenshots should be labeled and explained properly. LABELED AND EXPLAIN EACH CODE (PLAYBOOK) No explanation = Minus Points
2. Create a repository in your GitHub account and label it as Surname_PrelimExam
3. Clone your new repository in your CN.

Clone new repository by using git clone <URL of git repository>

```
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
jessielazo@Desktop:~$ git clone https://github.com/Jessie-Lazo/Lazo_PrelimExam.
git
Cloning into 'Lazo_PrelimExam'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), done.
jessielazo@Desktop:~$ ls
Desktop  Downloads  Lazo_PrelimExam  Pictures  Templates
Documents  examples.desktop  Music  Public  Videos
jessielazo@Desktop:~$ cd Lazo_PrelimExam
```

4. In your CN, create an inventory file and ansible.cfg files.

Create inventory file and ansible.cfg file inside repository

```
jessielazo@Desktop:~$ cd Lazo_PrelimExam
jessielazo@Desktop:~/Lazo_PrelimExam$ touch inventory
jessielazo@Desktop:~/Lazo_PrelimExam$ sudo nano inventory
jessielazo@Desktop:~/Lazo_PrelimExam$ ls
inventory  README.md
jessielazo@Desktop:~/Lazo_PrelimExam$ touch ansible.cfg
jessielazo@Desktop:~/Lazo_PrelimExam$ sudo nano ansible.cfg
jessielazo@Desktop:~/Lazo_PrelimExam$ ls
ansible.cfg  inventory  README.md
```

Check ansible

```
jessielazo@Desktop:~$ cd Lazo_PrelimExam
jessielazo@Desktop:~/Lazo_PrelimExam$ ansible all -m ping
192.168.56.102 | SUCCESS => {
  "changed": false,
  "ping": "pong"
}
192.168.56.101 | SUCCESS => {
  "changed": false,
  "ping": "pong"
}
jessielazo@Desktop:~/Lazo_PrelimExam$
```

5. Create an Ansible playbook that does the following with an input of a config.yaml file for both Manage Nodes
 - Installs the latest python3 and pip3

By using the config.yaml file where I put the tasks to install python3 and pip3, I was able to successfully install the application on server 192.168.56.101 (server1) and 192.168.56.102(server2)

```
File Edit View Search Terminal Help
GNU nano 2.9.3 config.yaml
--
- hosts: all
  become: yes
  gather_facts: yes
  vars_files:
    - config.yaml

  tasks:
    - name: Install Python3 and Pip3 for ubuntu
      package:
        name: "{{ item }}"
        state: latest
      loop:
        - python3
        - python3-pip
      when: ansible_distribution == 'Ubuntu'
```

```

jessielazo@Desktop:~/Lazo_PrelimExam$ ansible-playbook --become --ask-become-pass config.yaml
SUDO password:
[WARNING]: Found variable using reserved name: gather_facts

[WARNING]: Found variable using reserved name: tasks

[WARNING]: Found variable using reserved name: hosts

[WARNING]: Found variable using reserved name: vars_files

[WARNING]: Found variable using reserved name: become

PLAY [all] *****
*

TASK [Gathering Facts] *****
*
ok: [192.168.56.101]
ok: [192.168.56.102]

TASK [Install Python3 and Pip3 for ubuntu] *****
*
ok: [192.168.56.102] => (item=python3)
ok: [192.168.56.101] => (item=python3)
ok: [192.168.56.102] => (item=python3-pip)
ok: [192.168.56.101] => (item=python3-pip)

```

```

File Edit View Search Terminal Help
jessieserver2@Server2:~$ python3 --version
Python 3.6.9
jessieserver2@Server2:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.56.102 netmask 255.255.255.0 broadcast 192.168.56.255
    inet6 fe80::bd9d:2117:abca:449f prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:6c:07:f5 txqueuelen 1000 (Ethernet)
    RX packets 247900 bytes 359784560 (359.7 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 65635 bytes 4090923 (4.0 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 239 bytes 21716 (21.7 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 239 bytes 21716 (21.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

jessieserver2@Server2:~$

```

```

jessieserve@Server2:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.56.101 netmask 255.255.255.0 broadcast 192.168.56.255
    inet6 fe80::1eed:4e3d:1457:9d4a prefixlen 64 scopeid 0x20<link>
    inet6 fe80::bd9d:2117:abca:449f prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:6c:07:f5 txqueuelen 1000 (Ethernet)
    RX packets 247473 bytes 359700304 (359.7 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 61674 bytes 3920041 (3.9 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 693 bytes 122197 (122.1 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 693 bytes 122197 (122.1 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

jessieserve@Server2:~$ python3 --version
Python 3.6.9
jessieserve@Server2:~$

```

- use pip3 as default pip
To set pip3 as default pip, I put the shell update-alternatives using the pip3 directory path

```

recuse: yes

- name: Set Pip3 as the default pip
  shell: update-alternatives --install /usr/bin/pip pip /usr/bin/pip3 1

```

```

TASK [Set Pip3 as the default pip] *****
*
changed: [192.168.56.102]
changed: [192.168.56.101]
TASK [Set Python3 as the default] *****

```

- use python3 as default python
To set python3 as default python, I put the shell update-alternatives using the python3 directory path

```

- name: Set Python3 as the default
  shell: update-alternatives --install /usr/bin/python python /usr/bin/pyt$

```

```
TASK [Set Python3 as the default] *****
*
changed: [192.168.56.102]
changed: [192.168.56.101]
```

- Install Java open-jdk

By using the config.yaml file where I put the tasks to install OpenJDK, I was able to successfully install the application on server 192.168.56.101 (server1) and 192.168.56.102(server2)

```
TASK [Install OpenJDK] *****
*
ok: [192.168.56.101]
ok: [192.168.56.102]
```

```
GNU nano 2.9.3 config.yaml

  loop:
    - python3
    - python3-pip
  when: ansible_distribution == 'Ubuntu'

- name: Install OpenJDK
  package:
    name: openjdk-11-jdk
    state: present
```

```
jessieserve@Server2:~$ java --version
openjdk 11.0.19 2023-04-18
OpenJDK Runtime Environment (build 11.0.19+7-post-Ubuntu-0ubuntu118.04.1)
OpenJDK 64-Bit Server VM (build 11.0.19+7-post-Ubuntu-0ubuntu118.04.1, mixed mo
de, sharing)
jessieserve@Server2:~$
```

```
jessieserver2@Server2:~$ java --version
openjdk 11.0.19 2023-04-18
OpenJDK Runtime Environment (build 11.0.19+7-post-Ubuntu-0ubuntu118.04.1)
OpenJDK 64-Bit Server VM (build 11.0.19+7-post-Ubuntu-0ubuntu118.04.1, mixed mo
de, sharing)
jessieserver2@Server2:~$
```

- Install MariaDB as well as starting the server, create a database and a table using mariaDB and input one record into a table USING ANSIBLE ONLY
- Create Motd containing the text defined by a variable defined in config.yaml file and if there is no variable input the default motd is "Ansible Managed node by (your user name)"

```
- name: Disable default motd
  file:
    dest: "/etc/update-motd.d/"
    mode: "u-x,g-x,o-x"
    state: directory
    recurse: yes
```

- Create a user with a variable defined in config.yaml

5. PUSH and COMMIT your PrelimExam in your GitHub repo

6. Your document report should be submitted here.

7. For your prelim exam to be counted, please paste your repository link here. (Failure to submit will result in ZERO)

https://github.com/Jessie-Lazo/Lazo_PrelimExam

8. NO USE OF EXTERNAL WEBSITES SUCH AS , REDDIT, CHATGPT, GITHUB, GEMINI, CLAUDE, FORUMS, AND DOCUMENTATIONS. FAILURE TO COMPLY WITH RESULT IN ZERO.