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PROCEDURE:

INSTALL PYTHON3 AND PIP3

```
GNU nano 2.9.3           install_py3-pip3.yaml

---
- hosts: all
  become: true
  tasks:

    - name: Install Latest Python3 and Pip3 Packages
      apt:
        name:
          - python3
          - python3-pip
        state: latest
        update_cache: yes
```

Created Ansible playbook to install the latest Python3 and Pip3 Packages.

```
roallos-ubuntu@workstation:~/Roallos-PrelimExam$ ansible-playbook install_py3-pip3.yaml -K
SUDO password:
[WARNING]: Ignoring invalid attribute: update_cache

PLAY [all] ****
*
TASK [Gathering Facts] ****
*
ok: [192.168.56.105]
ok: [192.168.56.106]

TASK [Install Latest Python3 and Pip3 Packages] ****
*
changed: [192.168.56.106]
changed: [192.168.56.105]

PLAY RECAP ****
*
192.168.56.105      : ok=2      changed=1      unreachable=0      failed=0
192.168.56.106      : ok=2      changed=1      unreachable=0      failed=0

roallos-ubuntu@workstation:~/Roallos-PrelimExam$
```

Ran Ansible playbook “install_py3-pip3.yaml” and showed results.

```

Roallos-Ubuntu-MANAGE_1 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
File Edit View Search Terminal Help
Preparing to unpack .../python2.7-minimal_2.7.17-1-18.04ubuntu1.11_amd64.deb ...
Unpacking python2.7-minimal (2.7.17-1-18.04ubuntu1.11) ...
Selecting previously unselected package python-minimal.
Preparing to unpack .../python-minimal_2.7.15-rc1-1_amd64.deb ...
Unpacking python-minimal (2.7.15-rc1-1) ...
Selecting previously unselected package python2.7.
Preparing to unpack .../python2.7_2.7.17-1-18.04ubuntu1.11_amd64.deb ...
Unpacking python2.7 (2.7.17-1-18.04ubuntu1.11) ...
Selecting previously unselected package libpython-stdlib:amd64.
Preparing to unpack .../libpython-stdlib_2.7.15-rc1-1_amd64.deb ...
Unpacking libpython-stdlib:amd64 (2.7.15-rc1-1) ...
Setting up python2.7-minimal (2.7.17-1-18.04ubuntu1.11) ...
Linking and byte-compiling packages for runtime python2.7...
Setting up python-minimal (2.7.15-rc1-1) ...
Selecting previously unselected package python.
(Reading database ... 165345 files and directories currently installed.)
Preparing to unpack .../python_2.7.15-rc1-1_amd64.deb ...
Unpacking python (2.7.15-rc1-1) ...
Setting up python2.7 (2.7.17-1-18.04ubuntu1.11) ...
Setting up libpython-stdlib:amd64 (2.7.15-rc1-1) ...
Setting up python (2.7.15-rc1-1) ...
Processing triggers for desktop-file-utils (0.23-1ubuntu3.18.04.2) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for gnome-menus (3.13.3-11ubuntu1.1) ...
Processing triggers for mime-support (3.00ubuntu1) ...
roallos-ubuntu@server1:~$ 
roallos-ubuntu@server1:~$ which python3
/usr/bin/python3
roallos-ubuntu@server1:~$ pip3 -V
pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)
roallos-ubuntu@server1:~$ 

Roallos-Ubuntu-MANAGE_2 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
File Edit View Search Terminal Help
Selecting previously unselected package python-minimal.
Preparing to unpack .../python-minimal_2.7.15-rc1-1_amd64.deb ...
Unpacking python-minimal (2.7.15-rc1-1) ...
Selecting previously unselected package python2.7.
Preparing to unpack .../python2.7_2.7.17-1-18.04ubuntu1.11_amd64.deb ...
Unpacking python2.7 (2.7.17-1-18.04ubuntu1.11) ...
Selecting previously unselected package libpython-stdlib:amd64.
Preparing to unpack .../libpython-stdlib_2.7.15-rc1-1_amd64.deb ...
Unpacking libpython-stdlib:amd64 (2.7.15-rc1-1) ...
Setting up python2.7-minimal (2.7.17-1-18.04ubuntu1.11) ...
Linking and byte-compiling packages for runtime python2.7...
Setting up python-minimal (2.7.15-rc1-1) ...
Selecting previously unselected package python.
(Reading database ... 165345 files and directories currently installed.)
Preparing to unpack .../python_2.7.15-rc1-1_amd64.deb ...
Unpacking python (2.7.15-rc1-1) ...
Setting up python2.7 (2.7.17-1-18.04ubuntu1.11) ...
Setting up libpython-stdlib:amd64 (2.7.15-rc1-1) ...
Setting up python (2.7.15-rc1-1) ...
Processing triggers for desktop-file-utils (0.23-1ubuntu3.18.04.2) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for gnome-menus (3.13.3-11ubuntu1.1) ...
Processing triggers for mime-support (3.00ubuntu1) ...
roallos-ubuntu@server2:~$ which python3
/usr/bin/python3
roallos-ubuntu@server2:~$ which python3-pip
roallos-ubuntu@server2:~$ which python3
/usr/bin/python3
roallos-ubuntu@server2:~$ pip3 -V
pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)
roallos-ubuntu@server2:~$ 

```

By running the commands “which python3” and “pip3 -V” in both MNs, this should show and validate installs.

SET PIP3 AS DEFAULT PIP

```

GNU nano 2.9.3          set_pip3-default.yaml

---
- hosts: all
  become: true
  tasks:

    - name: Set Pip3 as Default
      shell: alias pip=python3 >> ~/.bashrc
      register: sh_output

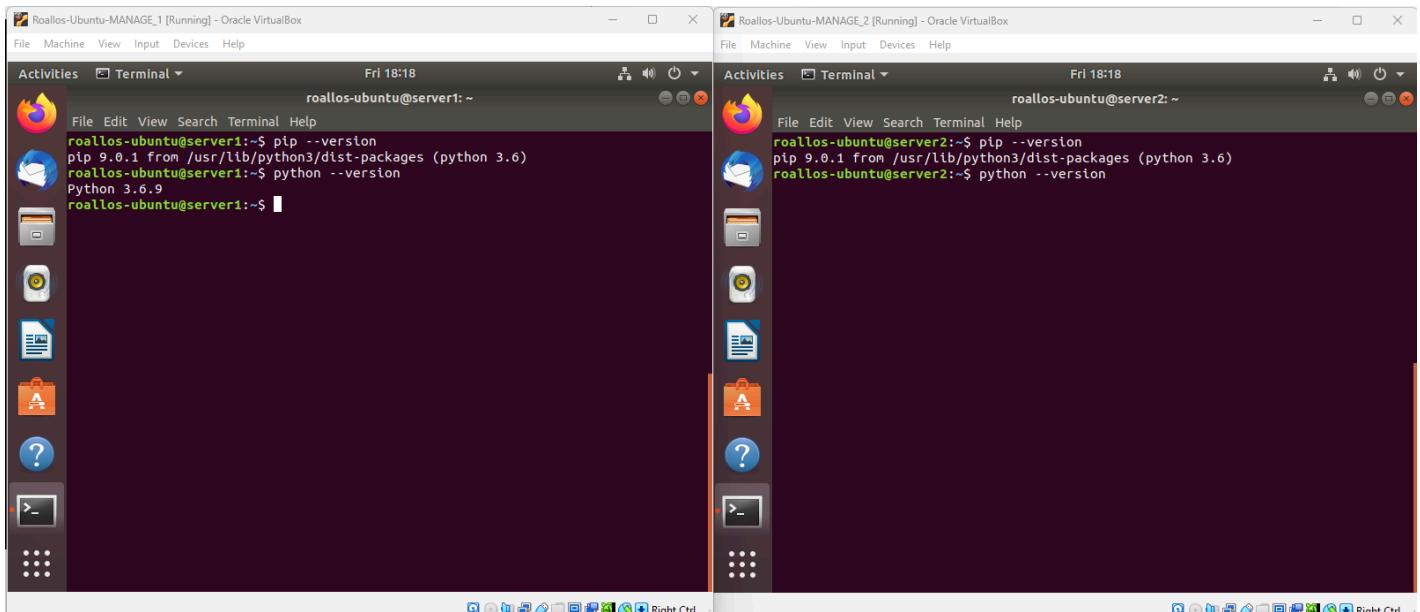
    - name: Display Output to CN
      debug:
        msg: "{{ sh_output }}"

```

Prompt a command (alias) to CNs that sets ‘pip’ to redirect to ‘pip3’, to be saved within `~/.bashrc`

```
TASK [Display Output to CN] *****
* Thunderbird Mail
ok: [192.168.56.105] => {
    "msg": {
        "changed": true,
        "cmd": "alias pip=python3 >> ~/.bashrc",
        "delta": "0:00:00.001925",
        "end": "2025-08-29 18:57:15.830349",
        "failed": false,
        "rc": 0,
        "start": "2025-08-29 18:57:15.828424",
        "stderr": "",
        "stderr_lines": [],
        "stdout": "",
        "stdout_lines": []
    }
}
ok: [192.168.56.106] => {
    "msg": {
        "changed": true,
        "cmd": "alias pip=python3 >> ~/.bashrc",
        "delta": "0:00:00.002613",
        "end": "2025-08-29 18:57:15.823071",
        "failed": false,
        "rc": 0,
        "start": "2025-08-29 18:57:15.820458",
        "stderr": "",
        "stderr_lines": []
}
```

Ran Ansible playbook 'set_pip3-default.yaml'. The commands were run successfully.



Displaying proof of aliasing via Ansible by entering the command 'pip --version'

SET PYTHON3 AS DEFAULT PYTHON

```
GNU nano 2.9.3                               set_py3-default.yaml

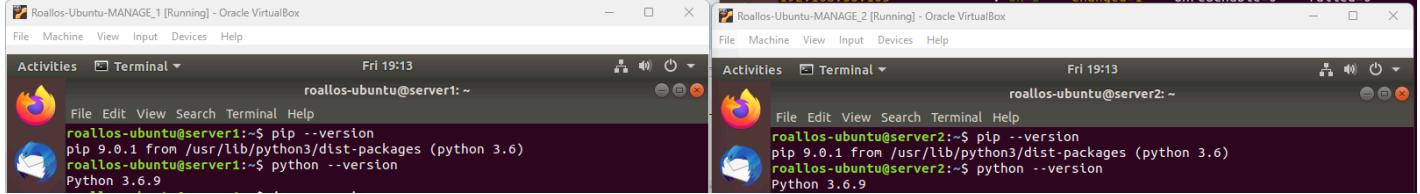
---
- hosts: all
  become: true
  tasks:

    - name: Set Python3 as Default
      shell: alias python=python3 >> ~/.bashrc
      register: sh_output

    - name: Display Output to CN
      debug:
        msg: "{{ sh_output }}"
```

Prompt a command (alias) to CNs that sets ‘python’ to redirect to ‘python3’, to be saved within ~/.bashrc

```
TASK [Display Output to CN] *****
*
ok: [192.168.56.105] => {
    "msg": {
        "changed": true,
        "cmd": "alias python=python3 >> ~/.bashrc",
        "delta": "0:00:00.002029",
        "end": "2025-08-29 18:57:56.993740",
        "failed": false,
        "rc": 0,
        "start": "2025-08-29 18:57:56.991711",
        "stderr": "",
        "stderr_lines": [],
        "stdout": "",
        "stdout_lines": []
    }
}
ok: [192.168.56.106] => {
    "msg": {
        "changed": true,
        "cmd": "alias python=python3 >> ~/.bashrc",
        "delta": "0:00:00.002627",
        "end": "2025-08-29 18:57:56.971299",
        "failed": false,
        "rc": 0,
        "start": "2025-08-29 18:57:56.968672",
        "stderr": "",
        "stderr_lines": []
```



Roallos-Ubuntu-MANAGE_1 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Activities Terminal Fri 19:13 roallos-ubuntu@server1:~
File Edit View Search Terminal Help
roallos-ubuntu@server1:~\$ pip --version
pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)
roallos-ubuntu@server1:~\$ python --version
Python 3.6.9

Roallos-Ubuntu-MANAGE_2 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Activities Terminal Fri 19:13 roallos-ubuntu@server2:~
File Edit View Search Terminal Help
roallos-ubuntu@server2:~\$ pip --version
pip 9.0.1 from /usr/lib/python3/dist-packages (python 3.6)
roallos-ubuntu@server2:~\$ python --version
Python 3.6.9

INSTALL JAVA OPEN JDK

```
GNU nano 2.9.3           install_java.yaml
```

```
---
```

```
- hosts: all
  become: true
  tasks:
```

```
    - name: Install Latest Java open-jdk Packages
      apt:
        name:
          - default-jre
          - default-jdk
        state: latest
        update_cache: yes
```

Created Ansible playbook to install the latest Java open-jdk Packages. ‘default-jre’ is needed before downloading open-jdk (package name: ‘default-jdk’)

```

roallos-ubuntu@workstation:~/Roallos-PrelimExam$ ansible-playbook install_java.yaml -K
SUDO password:
[WARNING]: Ignoring invalid attribute: update_cache

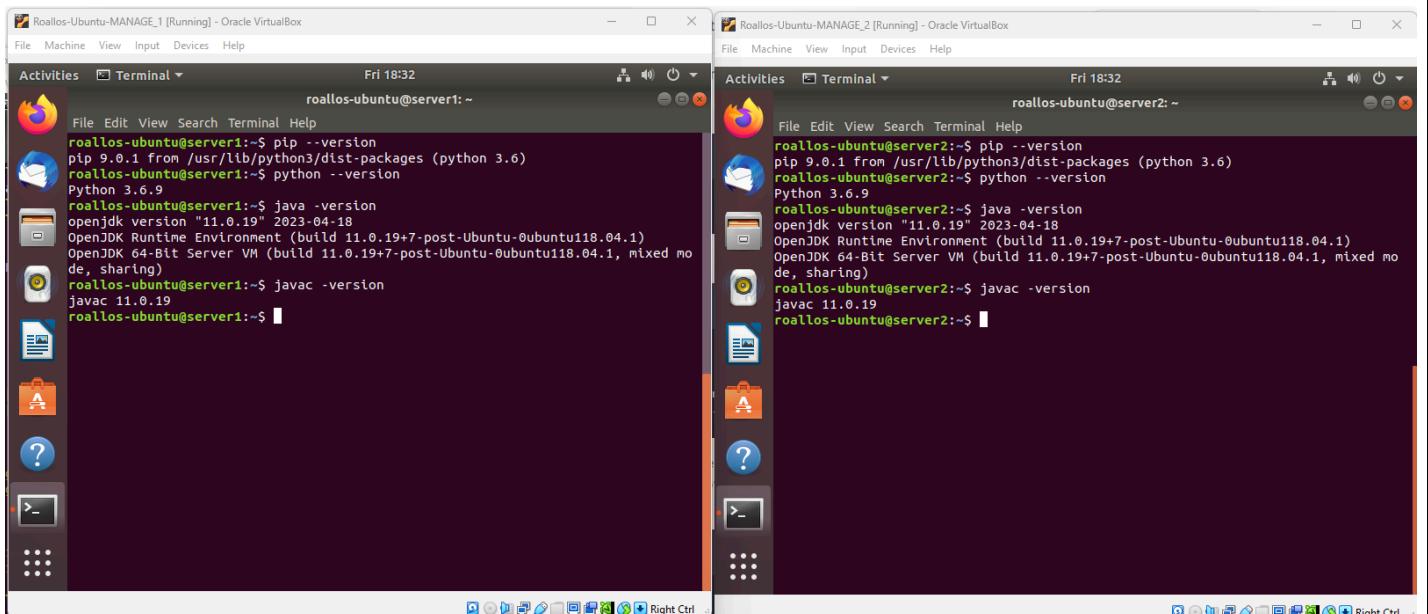
PLAY [all] *****
*
TASK [Gathering Facts] *****
*
ok: [192.168.56.105]
ok: [192.168.56.106]

TASK [Install Latest Java open-jdk Packages] *****
*
changed: [192.168.56.105]
changed: [192.168.56.106]

PLAY RECAP *****
*
192.168.56.105 : ok=2    changed=1    unreachable=0    failed=0
192.168.56.106 : ok=2    changed=1    unreachable=0    failed=0

```

Ran Ansible playbook “install_java.yaml” and showed results.



By running the commands “`java -version`” and “`javac -version`” in both MNs, this should show and validate installs.

INSTALL MARIADB

```
GNU nano 2.9.3           install_mariadb.ya

---
- hosts: all
  become: true
  tasks:
    - name: Install MariaDB
      apt:
        Rhythmbox:
          - mariadb-server
          state: latest
```

Incomplete Ansible playbook. Only can install latest version of MariaDB

```
roallos-ubuntu@workstation:~/Roallos-PrelimExam$ ansible-playbook install_maria
db.yaml -K
SUDO password:

PLAY [all] ****
*
TASK [Gathering Facts] ****
*
ok: [192.168.56.106]
ok: [192.168.56.105]

TASK [Install MariaDB] ****
*
ok: [192.168.56.106]
ok: [192.168.56.105]

PLAY RECAP ****
*
192.168.56.105      : ok=2    changed=0    unreachable=0    failed=0
192.168.56.106      : ok=2    changed=0    unreachable=0    failed=0

roallos-ubuntu@workstation:~/Roallos-PrelimExam$
```

Accomplished installation of MariaDB

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)"

```
GNU nano 2.9.3                                     config.yaml

---
- hosts: all
  become: true
  vars:
    motd: "Ansible managed node by roallos-ubuntu"
  tasks:
    - name: Variables
```

Incomplete Ansible playbook.