



1. Create two nodes with tag:key role and tag:value master & slave respectively. Setup the dynamic inventory on ansible control nodes. Run the following modules using tag key-value:
  - 1.1 Ping master node and slave node separately.

<input type="checkbox"/>	Name	Instance ID	Instance Type	Availability Zone	Instance
<input type="checkbox"/>	ansible-master-ayush	i-09cc7f0bc68b438b2	t2.micro	us-east-1c	 running
<input checked="" type="checkbox"/>	ansible-node-ayush	i-06f4b508898e0749d	t2.micro	us-east-1c	 running

```
ayush@ayush:~/github/devops-starter/ansible/inventory$ ansible tag_Name_ansible_master_ayush -m ping --private-key=/home/ayush/Downloads/ayush-pem.pem -u ubuntu
[DEPRECATION WARNING]: The TRANSFORM_INVALID_GROUP_CHARS settings is set to allow bad characters in group names by default, this will change, but still be user configurable on deprecation. This feature will be removed in version 2.10. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host 18.212.28.124 should use /usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible releases. A future Ansible release will default to using the discovered platform python for this host. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information. This feature will be removed in version 2.12. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
18.212.28.124 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
ayush@ayush:~/github/devops-starter/ansible/inventory$
```

```
ayush@ayush:~/github/devops-starter/ansible/inventory$ ansible tag_Name_ansible_slave_ayush -m ping --private-key=/home/ayush/Downloads/ayush-pem.pem -u ubuntu
[DEPRECATION WARNING]: The TRANSFORM_INVALID_GROUP_CHARS settings is set to allow bad characters in group names by default, this will change, but still be user configurable on deprecation. This feature will be removed in version 2.10. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
3.86.245.18 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
ayush@ayush:~/github/devops-starter/ansible/inventory$
```

## 1.2 To check all running processes on slave node.

```
ayush@ayush:~/github/devops-starter/ansible/inventory$ ansible tag_Name_ayush_slave_ayush -m shell -a '/bin/bash -c "ps aux"' --private-key=/home/ayush/Downloads/ayush-pem.pem -u ubuntu
[DEPRECATION WARNING]: The TRANSFORM_INVALID_GROUP_CHARS settings is set to allow bad characters in group names by default, this will change, but still be user configurable on deprecation. This feature will be removed in version 2.10. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
3.86.245.18 | CHANGED | rc=0 >>
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.1  0.9 159852  9244 ?        Ss   13:02   0:02 /sbin/init
root         2  0.0  0.0      0     0 ?        S    13:02   0:00 [kthreadd]
root         4  0.0  0.0      0     0 ?        I<   13:02   0:00 [kworker/0:0H]
root         5  0.0  0.0      0     0 ?        I    13:02   0:00 [kworker/u30:0]
root         6  0.0  0.0      0     0 ?        I<   13:02   0:00 [mm_percpu_wq]
root         7  0.0  0.0      0     0 ?        S    13:02   0:00 [ksoftirqd/0]
root         8  0.0  0.0      0     0 ?        I    13:02   0:00 [rcu_sched]
root         9  0.0  0.0      0     0 ?        I    13:02   0:00 [rcu_bh]
root        10  0.0  0.0      0     0 ?        S    13:02   0:00 [migration/0]
root        11  0.0  0.0      0     0 ?        S    13:02   0:00 [watchdog/0]
root        12  0.0  0.0      0     0 ?        S    13:02   0:00 [cpuhp/0]
```

## 1.3 To copying files to both nodes concurrently.

```
ayush@ayush:~/github/devops-starter/ansible/inventory$ ansible tag_owner_ayush -m copy -a "src=/home/ayush/tes dest=/tmp" --private-key=/home/ayush/Downloads/ayush-pem.pem -u ubuntu
[DEPRECATION WARNING]: The TRANSFORM_INVALID_GROUP_CHARS settings is set to allow bad characters in group names by default, this will change, but still be user configurable on deprecation. This feature will be removed in version 2.10. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details
3.86.245.18 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": true,
  "checksum": "2dc7f4a0854ef47e0d50f974d6e1b84bacf01c5f",
  "dest": "/tmp/tes",
  "gid": 1000,
  "group": "ubuntu",
  "md5sum": "ed79ec1a4d50d50e35f62e5988c8435c",
  "mode": "0664",
  "owner": "ubuntu",
  "size": 10,
  "src": "/home/ubuntu/.ansible/tmp/ansible-tmp-1584711143.85-149468837421362/source",
  "state": "file",
  "uid": 1000
}
```



```

[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host 18.212.28.124 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible
releases. A future Ansible release will default to using the discovered platform python for this
host. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html
for more information. This feature will be removed in version 2.12. Deprecation warnings can be
disabled by setting deprecation_warnings=False in ansible.cfg.
18.212.28.124 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": true,
  "checksum": "2dc7f4a0854ef47e0d50f974d6e1b84bacf01c5f",
  "dest": "/tmp/tes",
  "gid": 1000,
  "group": "ubuntu",
  "md5sum": "ed79ec1a4d50d50e35f62e5988c8435c",
  "mode": "0664",
  "owner": "ubuntu",
  "size": 10,
  "src": "/home/ubuntu/.ansible/tmp/ansible-tmp-1584711143.86-43504932800651/source",
  "state": "file",
  "uid": 1000
}

```

```

ayush@ayush:~/github/devops-starter/ansible/inventory$ ansible tag_owner_ayush -m shell -a "ls /t
mp" --private-key=/home/ayush/Downloads/ayush-pem.pem -u ubuntu
[DEPRECATION WARNING]: The TRANSFORM_INVALID_GROUP_CHARS settings is set to allow bad characters
in group names by default, this will change, but still be user configurable on deprecation.
This feature will be removed in version 2.10. Deprecation warnings can be disabled by setting
deprecation_warnings=False in ansible.cfg.
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see
details
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host 18.212.28.124 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible
releases. A future Ansible release will default to using the discovered platform python for this
host. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html
for more information. This feature will be removed in version 2.12. Deprecation warnings can be
disabled by setting deprecation_warnings=False in ansible.cfg.
18.212.28.124 | CHANGED | rc=0 >>
ansible_command_payload_ndAq6Q
systemd-private-7d7ee98359884f7c9e12c88c-systemd-resolved.service-QYwdyS
systemd-private-7d7ee98359884f7c9e12c88c-systemd-timesyncd.service-k95Ww0
tes
3.86.245.18 | CHANGED | rc=0 >>
ansible_command_payload_xb0sSp6e
systemd-private-36ed73a0633f448481bcf177b525a16b-systemd-resolved.service-gsEeSS
systemd-private-36ed73a0633f448481bcf177b525a16b-systemd-timesyncd.service-Bsn7xz
tes

```

2. Setup nginx on both nodes with a single custom configuration template, on master nginx should run on 8000 while on slave nginx would listen on port 80. [Jinja2+conditional]

```
---
- hosts: tag_Name_ansible_master_ayush
  tasks:
    - name: ensure nginx is at the latest version
      apt: name=nginx state=latest
      become: yes
    - name: start nginx
      service:
        name: nginx
        state: started
      become: yes
    - name: copy the nginx config file and restart nginx
      copy:
        src: /home/ayush/ansible/assignment2/8000.cfg
        dest: /etc/nginx/sites-available/default
      become: yes
    - name: copy the content of the web site
      copy:
        src: /home/ayush/ansible/assignment2/websites/master.html
        dest: /var/www/html/master.html
    - name: restart nginx
      service:
        name: nginx
        state: restarted
      become: yes
```

```

- hosts: tag_Name_ansible_slave_ayush
tasks:
  - name: ensure nginx is at the latest version
    apt: name=nginx state=latest
    become: yes
  - name: start nginx
    service:
      name: nginx
      state: started
    become: yes
  - name: copy the nginx config file and restart nginx
    copy:
      src: /home/ayush/ansible/assignment2/80.cfg
      dest: /etc/nginx/sites-available/default
    become: yes
  - name: copy the content of the web site
    copy:
      src: /home/ayush/ansible/assignment2/websites/slave.html
      dest: /var/www/html/slave.html
  - name: restart nginx
    service:
      name: nginx
      state: restarted
    become: yes

```

```

(venv) ayush@ayush:~/github/devops-starter/assignment2$ cat 8000.cfg
server {
    listen 8000 default_server;
    listen [::]:8000 default_server;
    root /var/www/html;
    index master.html;
    server_name _;
    location / {
        try_files $uri $uri/ =404;
    }
}

(venv) ayush@ayush:~/github/devops-starter/assignment2$

```

```
(venv) ayush@ayush:~/github/devops-starter/assignment2$ cat 80.cfg
server {
    listen 80 default_server;
    listen [::]:80 default_server;
    root /var/www/html;
    index slave.html;
    server_name _;
    location / {
        try_files $uri $uri/ =404;
    }
}
```

(venv) ayush@ayush:~/github/devops-starter/assignment2\$

```
(venv) ayush@ayush:~/github/devops-starter/assignment2/websites$ ls
master.html  slave.html
(venv) ayush@ayush:~/github/devops-starter/assignment2/websites$ cat master.html
this is master
(venv) ayush@ayush:~/github/devops-starter/assignment2/websites$ cat slave.html
this is slave
(venv) ayush@ayush:~/github/devops-starter/assignment2/websites$
```

← → ↻ ⓘ Not secure | 18.212.28.124:8000

📱 Apps 🔄 Apple Final Cu... 🔄 Apple Final Cu... 📺 On Dem

---

this is master

← → ↻ ⓘ Not secure | 3.86.245.18

📱 Apps 🔄 Apple Final Cu... 🔄 Apple Final Cu... 📺 On Demand Tr..

---

this is slave



3. Setup mysql on a remote server, create a user with password. Passwords should be encrypted using Ansible vault. Verify the setup by log in to mysql.

```
ayush@ayush:~/ansible/bassgn$ sudo ansible-vault encrypt_string vault
[sudo] password for ayush:
New Vault password:
Confirm New Vault password:
!vault |
     $ANSIBLE_VAULT;1.1;AES256
     39363533646534363039336134613733613731653438356633653164393732313735366438313236
     3065333462396534333365316436626138646635373231640a643236323664373136653737626139
     34333633663637336665396162613033306134326331386439376635623435663464346464663261
     3961313863613530660a643762663861383764336637356539626666636234623266333365313339
     3335
Encryption successful
```

```
ayush@ayush:~/ansible/bassgn$ cat mysql.yml
- hosts: all
  gather_facts: no
  become: yes
  vars:
    wordpress: !vault |
         $ANSIBLE_VAULT;1.1;AES256
         39363533646534363039336134613733613731653438356633653164393732313735366438313236
         3065333462396534333365316436626138646635373231640a643236323664373136653737626139
         34333633663637336665396162613033306134326331386439376635623435663464346464663261
         3961313863613530660a643762663861383764336637356539626666636234623266333365313339
         3335

  tasks:
    - name: Installing mysql
      apt:
        name: mysql-server
        state: present
        update-cache: yes

    - name: Installing dependencies for database
      apt:
        name: python2.7-mysqldb
        state: present
        update-cache: yes

    - name: waiting for 10 sec.....
      pause:
        seconds: 10

    - name: creating database user
      mysql_user:
        name: wordpress
        password: '{{ wordpress }}'
        priv: ' *.*:ALL'
        state: present
```

```

ayush@ayush:~/ansible/bassgn$ ansible-playbook mysql.yml -i hosts --ask-vault-pass
Vault password:

PLAY [all] *****

TASK [Installing mysql] *****
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host ubuntu@54.175.220.241 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible
releases. A future Ansible release will default to using the discovered platform python for this
host. See https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for
more information. This feature will be removed in version 2.12. Deprecation warnings can be
disabled by setting deprecation_warnings=False in ansible.cfg.
ok: [ubuntu@54.175.220.241]

TASK [Installing dependencies for database] *****
ok: [ubuntu@54.175.220.241]

TASK [waiting for 10 sec.....] *****
Pausing for 10 seconds
(ctrl+C then 'C' = continue early, ctrl+C then 'A' = abort)
ok: [ubuntu@54.175.220.241]

TASK [creating database user] *****
[WARNING]: Module did not set no_log for update_password
ok: [ubuntu@54.175.220.241]

TASK [Create a new database with name 'wordpress'] *****
ok: [ubuntu@54.175.220.241]

PLAY RECAP *****
ubuntu@54.175.220.241 : ok=5    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

```

```

ubuntu@ip-172-31-111-226:~$ sudo mysql -u wordpress -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 16
Server version: 5.7.29-0ubuntu0.18.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> 

```