ansible

ansible

> ansible, ansible-doc, ansible-galaxy, ansible-lint, ansible-playbook, ansible-pull, ansible-vault

> ssh 10.44.111.115:179

```
sudo yum install -y vim wget lrzsz screen
```

```
username root/develop
password 2019@eagle/develop
```

- ip: 172.17.163.179
- netmask 255.255.255.240
- gateway
- route 172.17.163.177
- DNS 172.17.163.177

`ansible`

```
sudo yum install ansible -y
```

`ssh-keygen` `ssh key` `ssh-copy-id` `server`

```
[develop@localhost ~]$ ssh-keygen

Generating public/private rsa key pair.
Enter file in which to save the key (/home/develop/.ssh/id_rsa):
Created directory '/home/develop/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
```

```
Your identification has been saved in /home/develop/.ssh/id_rsa.
Your public key has been saved in /home/develop/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:i8laZFq8RAnOUEBdWLIy8LpDbZUiri9MbFmh+RKnUz4 develop@localhost.locald
The key's randomart image is:
+---[RSA 2048]----+
|..++++o          |
|  o =o+..        |
| .*.=oo          |
|.=o*oo           |
|ooXo  * S        |
|oX.E B + .       |
|B o o * .        |
|.+   o           |
| .. .            |
+----[SHA256]-----+

[develop@localhost ~]$ cat .ssh/id_rsa.pub
ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAABAQDFCAJp1+ER36dn1HN92/e2VbFAex1bLvaKEqXyG07l7NmQ0hXsfLHHMFkaHgRiVKdI
develop@localhost.localdomain
[develop@localhost ~]$


[develop@localhost ~]$ ssh-copy-id -i ~/.ssh/id_rsa.pub 172.17.163.181
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/develop/.ssh/id_rsa.pub"
The authenticity of host '172.17.163.181 (172.17.163.181)' can't be established.
ECDSA key fingerprint is SHA256:iVZEKj9NsHP/zhwdfu/gZLfV51LIsidtEhp2HpNg9k0.
ECDSA key fingerprint is MD5:54:99:0d:aa:e8:c5:8a:5e:f2:e6:a6:e9:4c:d6:db:ac.
Are you sure you want to continue connecting (yes/no)? yes
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that
are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is
to install the new keys
develop@172.17.163.181's password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh '172.17.163.181'"
and check to make sure that only the key(s) you wanted were added.
```

```
[develop@localhost ~]$ ssh 172.17.163.181
Last login: Sat Nov  2 14:00:59 2019 from gateway
[develop@localhost ~]$ exit

Connection to 172.17.163.181 closed.
[develop@localhost ~]$
```

ansible

```
sudo vim /etc/ansible/ansible.cfg

sudo vim /etc/ansible/hosts
```

host

```
sudo vim /etc/ansible/hosts
```

```
server-spring-cloud ansible_ssh_host=10.44.111.231 ansible_ssh_port=22
ansible_ssh_user=spring-cloud ansible_ssh_pass=spring-cloud

server-test-vars ansible_ssh_host=10.44.111.127 ansible_ssh_port=2222
ansible_ssh_user=develop ansible_ssh_pass=develop

[test]
172.17.163.179
172.17.163.181
172.17.163.186
172.17.163.184

[test:vars] #
ansible_ssh_port=22
ansible_ssh_user=develop
ansible_ssh_pass=develop

[test:children] #
10.44.111.127
```

```
server-centos-01 ansible_ssh_host=10.44.111.115  ansible_ssh_port=179 ansible_ssh_pass=develop
server-centos-02 ansible_ssh_host=10.44.111.115  ansible_ssh_port=181 ansible_ssh_pass=develop
server-ubuntu-01 ansible_ssh_host=10.44.111.115  ansible_ssh_port=190 ansible_ssh_pass=develop
server-ubuntu-02 ansible_ssh_host=10.44.111.115  ansible_ssh_port=189 ansible_ssh_pass=develop
```

inventory

```
ansible_ssh_host #
ansible_ssh_port #      22
ansible_ssh_user # ssh
ansible_ssh_pass # ssh
ansible_sudo_pass #   sudo
ansible_ssh_private_key_file #         ssh-agent
ansible_shell_type # shell    sh
ansible_connection # SSH       local , ssh , paramiko  ansible 1.2      paramiko             Co
ansible_python _ interpreter #    python            ruby  perl
```

```
ansible test -m shell -a 'echo "Hello Ansible.." && date'
```

```
172.17.163.186 | SUCCESS | rc=0 >>
Hello Ansible..
2019  11  02     14:47:00 CST

172.17.163.184 | SUCCESS | rc=0 >>
Hello Ansible..
2019  11  02     14:47:00 CST

172.17.163.181 | SUCCESS | rc=0 >>
Hello Ansible..
2019  11  02     14:47:00 CST

172.17.163.179 | SUCCESS | rc=0 >>
Hello Ansible..
2019  11  02     14:47:00 CST

[develop@localhost ~]$
```

inventory

inventory , CMDB zabbix ansible inventory ansibl

```
#!/usr/bin/env python
# coding=utf-8
import json
masterIp = ['172.17.163.179']
slaveIp = ['172.17.163.181','172.17.163.186','172.17.163.184']
masterGroup = 'master'
slaveGroup = 'slave'
hostdata = {masterGroup:{"hosts":masterIp},slaveGroup:{"hosts":slaveIp}}
print json.dumps(hostdata,indent=4)
```

```
[develop@localhost ~]$ python inverti.py
{
    "slave": {
        "hosts": [
```

```
            "172.17.163.181",
            "172.17.163.186",
            "172.17.163.184"
        ]
    },
    "master": {
        "hosts": [
            "172.17.163.179"
        ]
    }
}
```

```
[root@vagrant-centos65 opt]# ansible -i inverti.py all -a 'date'
SSH password:
192.168.1.15 | SUCCESS | rc=0 >>
 07:25:27 up  3:56,  3 users,  load average: 0.00, 0.00, 0.00
192.168.1.110 | SUCCESS | rc=0 >>
 07:25:27 up 7 min,  3 users,  load average: 0.00, 0.02, 0.00
```

ping

```
ansible test -m ping
```

setup

```
ansible test -m setup
```

```
ansible test -m setup -a 'filter=ansible_default_ipv4'
```

```
ansible test -m setup -a 'filter=ansible_memory_mb'
```

```
ansible test -m setup -a 'filter=*mb'
```

```
ansible_all_ipv4_addresses:    ipv4
ansible_devices:
ansible_distribution:         : centos,suse
ansible_distribution_major_version:
```

```
ansible_distribution_version:
ansible_machine:        : 32    64
ansible_eth0:    eth0
ansible_hostname:
ansible_kernel:
ansible_lvm:   lvm
ansible_memtotal_mb:
ansible_memfree_mb:
ansible_memory_mb:
ansible_swaptotal_mb:     swap
ansible_swapfree_mb:   swap
ansible_mounts:
ansible_processor:   cpu  (     cpu   )
ansible_processor_vcpus:   cpu  (      )
ansible_python_version:   python
```

file

https://docs.ansible.com/ansible/latest/cli/ansible.html

file

```
[develop@localhost ~]$ ansible test -m file -a 'src=/etc/fstab dest=/home/develop/fstab
state=link'
172.17.163.186 | SUCCESS => {
    "changed": true,
    "dest": "/home/develop/fstab",
    "gid": 1000,
    "group": "develop",
    "mode": "0777",
    "owner": "develop",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 10,
    "src": "/etc/fstab",
    "state": "link",
    "uid": 1000
}
172.17.163.184 | SUCCESS => {
    "changed": true,
```

```
    "dest": "/home/develop/fstab",
    "gid": 1000,
    "group": "develop",
    "mode": "0777",
    "owner": "develop",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 10,
    "src": "/etc/fstab",
    "state": "link",
    "uid": 1000
}
172.17.163.181 | SUCCESS => {
    "changed": true,
    "dest": "/home/develop/fstab",
    "gid": 1000,
    "group": "develop",
    "mode": "0777",
    "owner": "develop",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 10,
    "src": "/etc/fstab",
    "state": "link",
    "uid": 1000
}
172.17.163.179 | SUCCESS => {
    "changed": true,
    "dest": "/home/develop/fstab",
    "gid": 1000,
    "group": "develop",
    "mode": "0777",
    "owner": "develop",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 10,
    "src": "/etc/fstab",
    "state": "link",
    "uid": 1000
}
[develop@localhost ~]$ ansible test -a 'ls -l'
172.17.163.181 | SUCCESS | rc=0 >>
   0
```

```
lrwxrwxrwx. 1 develop develop 10 11  2 16:42 fstab -> /etc/fstab

172.17.163.186 | SUCCESS | rc=0 >>
    0
lrwxrwxrwx. 1 develop develop 10 11  2 16:42 fstab -> /etc/fstab

172.17.163.184 | SUCCESS | rc=0 >>
    0
lrwxrwxrwx. 1 develop develop 10 11  2 16:42 fstab -> /etc/fstab

172.17.163.179 | SUCCESS | rc=0 >>
    108
lrwxrwxrwx. 1 develop develop     10 11  2 16:42 fstab -> /etc/fstab
-rwxrwxr-x. 1 develop develop    295 11  2 15:42 inverti.py
-rw-rw-r--. 1 develop develop 102710 11  2 16:26 sysinfo

[develop@localhost ~]$
```

```
[develop@localhost ~]$ ansible test -m file -a 'path=/home/develop/touch.txt state=touch'
172.17.163.186 | SUCCESS => {
    "changed": true,
    "dest": "/home/develop/touch.txt",
    "gid": 1000,
    "group": "develop",
    "mode": "0664",
    "owner": "develop",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 0,
    "state": "file",
    "uid": 1000
}
172.17.163.181 | SUCCESS => {
    "changed": true,
    "dest": "/home/develop/touch.txt",
    "gid": 1000,
    "group": "develop",
```

```
    "mode": "0664",
    "owner": "develop",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 0,
    "state": "file",
    "uid": 1000
}
172.17.163.184 | SUCCESS => {
    "changed": true,
    "dest": "/home/develop/touch.txt",
    "gid": 1000,
    "group": "develop",
    "mode": "0664",
    "owner": "develop",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 0,
    "state": "file",
    "uid": 1000
}
172.17.163.179 | SUCCESS => {
    "changed": true,
    "dest": "/home/develop/touch.txt",
    "gid": 1000,
    "group": "develop",
    "mode": "0664",
    "owner": "develop",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 0,
    "state": "file",
    "uid": 1000
}
[develop@localhost ~]$ ansible test -a 'ls -l'
172.17.163.184 | SUCCESS | rc=0 >>
    0
lrwxrwxrwx. 1 develop develop 10 11   2 16:42 fstab -> /etc/fstab
-rw-rw-r--. 1 develop develop  0 11   2 16:45 touch.txt

172.17.163.186 | SUCCESS | rc=0 >>
    0
lrwxrwxrwx. 1 develop develop 10 11   2 16:42 fstab -> /etc/fstab
```

```
-rw-rw-r--. 1 develop develop  0 11   2 16:45 touch.txt

172.17.163.181 | SUCCESS | rc=0 >>
    0
lrwxrwxrwx. 1 develop develop 10 11   2 16:42 fstab -> /etc/fstab
-rw-rw-r--. 1 develop develop  0 11   2 16:45 touch.txt

172.17.163.179 | SUCCESS | rc=0 >>
    108
lrwxrwxrwx. 1 develop develop     10 11   2 16:42 fstab -> /etc/fstab
-rwxrwxr-x. 1 develop develop    295 11   2 15:42 inverti.py
-rw-rw-r--. 1 develop develop 102710 11   2 16:26 sysinfo
-rw-rw-r--. 1 develop develop      0 11   2 16:45 touch.txt

[develop@localhost ~]$
```

- force: , : yes|no
- group: /
- mode: /
- owner: /
- path: /
- recurse:
- src: state=link
- dest: state=link
- state:
  - directory:
  - file:
  - link:
  - hard:
  - touch:
  - absent:

copy

```
[develop@localhost ~]$ ansible test -m copy -a 'src=/home/develop/xxx dest=/home/develop/xxx
owner=develop mode=0700'
172.17.163.184 | SUCCESS => {
    "changed": true,
    "checksum": "da39a3ee5e6b4b0d3255bfef95601890afd80709",
    "gid": 1000,
```

```
    "group": "develop",
    "mode": "0700",
    "owner": "develop",
    "path": "/home/develop/xxx",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 0,
    "state": "file",
    "uid": 1000
}
172.17.163.181 | SUCCESS => {
    "changed": true,
    "checksum": "da39a3ee5e6b4b0d3255bfef95601890afd80709",
    "gid": 1000,
    "group": "develop",
    "mode": "0700",
    "owner": "develop",
    "path": "/home/develop/xxx",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 0,
    "state": "file",
    "uid": 1000
}
172.17.163.186 | SUCCESS => {
    "changed": true,
    "checksum": "da39a3ee5e6b4b0d3255bfef95601890afd80709",
    "gid": 1000,
    "group": "develop",
    "mode": "0700",
    "owner": "develop",
    "path": "/home/develop/xxx",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 0,
    "state": "file",
    "uid": 1000
}
172.17.163.179 | SUCCESS => {
    "changed": true,
    "checksum": "da39a3ee5e6b4b0d3255bfef95601890afd80709",
    "gid": 1000,
    "group": "develop",
```

```
    "mode": "0700",
    "owner": "develop",
    "path": "/home/develop/xxx",
    "secontext": "unconfined_u:object_r:user_home_t:s0",
    "size": 0,
    "state": "file",
    "uid": 1000
}
[develop@localhost ~]$ ansible test -a 'ls -l'
172.17.163.181 | SUCCESS | rc=0 >>
   0
lrwxrwxrwx. 1 develop develop 10 11   2 16:42 fstab -> /etc/fstab
-rw-rw-r--. 1 develop develop  0 11   2 16:45 touch.txt
-rwx------. 1 develop develop  0 11   2 17:41 xxx

172.17.163.186 | SUCCESS | rc=0 >>
   0
lrwxrwxrwx. 1 develop develop 10 11   2 16:42 fstab -> /etc/fstab
-rw-rw-r--. 1 develop develop  0 11   2 16:45 touch.txt
-rwx------. 1 develop develop  0 11   2 17:41 xxx

172.17.163.184 | SUCCESS | rc=0 >>
   0
lrwxrwxrwx. 1 develop develop 10 11   2 16:42 fstab -> /etc/fstab
-rw-rw-r--. 1 develop develop  0 11   2 16:45 touch.txt
-rwx------. 1 develop develop  0 11   2 17:41 xxx

172.17.163.179 | SUCCESS | rc=0 >>
   108
lrwxrwxrwx. 1 develop develop     10 11   2 16:42 fstab -> /etc/fstab
-rwxrwxr-x. 1 develop develop    295 11   2 15:42 inverti.py
-rw-rw-r--. 1 develop develop 102710 11   2 16:26 sysinfo
-rw-rw-r--. 1 develop develop      0 11   2 16:45 touch.txt
-rwx------. 1 develop develop      0 11   2 17:34 xxx

[develop@localhost ~]$
```

backup	no	no	`yes/no`	
content	no			`content`|`src`

dest	yes			`src` `dest` `dest` de `src` `dest` `src` `dest` `dest`
follow	no	no	`yes/no`	
force	no	yes	`yes/no`	`no`
group	no			`chown`
local_follow	no	yes	`yes/no`	
mode	no			064
owner	no			/ chown
remote_src(2.0+)	no	no	`yes/no`	yes src
src	no			;
unsafe_writes	no		`yes/no`	
validate	no	None		

service

1

```
ansible test -m service -a "name=nginx state=started"
```

2

```
ansible test -m service -a "name=nginx state=stopped"
```

3

```
ansible test -m service -a "name=nginx state=restarted"
```

4

```
ansible test -m service -a "name=nginx enable=yes"
```

5

```
ansible test -m service -a "name=nginx enable=no"
```

6

```
ansible test -m service -a "name=network state=restarted args=eth0"
```

- |name| |nginx|
- |state| |state| |started| |state| |stopped| |started| |stopped| |restarted| |reloaded|
- |enabled| |yes| |no|

.....

playbook

|playbook| |playbook| |playbook| |shell| |playbook| |shell| |playbook| |task| |task| |shell| |playbook| |playbook| |playbook|

playbook

|playbook| |yml| |-|” “ playbook

```
---                             #
- hosts: webservers             #  playbook
  vars:                         #
    http_port: 80               #    key: value  http_port   80
    max_clients: 200
  remote_user: root             #           vars
  tasks:                        #   playbook tasks  task  - name:   name
  - name: ensure apache is at the latest version  #
    yum: pkg=httpd state=latest                   #yum                          shell

  - name: write the apache config file            #  task
    template: src=/srv/httpd.j2 dest=/etc/httpd.conf

#         python
```

- > “Tasks Variables Templates Handlers R

- hosts users

playbook play hosts remote_user

```
---
```

```
- hosts: test                        #
  remote_user: root                 #
```

sudo

```
# vim ping.yml
---
- hosts: test
  remote_user: root
  become: yes                  #2.6          sudo
  become_user: mysql           #  sudo   mysql

  playbook
# ansible-playbook ping.yml -K
```

- Tasks list `action`

> 1 Play task task hosts playbook
> 2 task name playbook task name ‘actio
> name=httpd 4 ansible command shell key=value

playbook

```
ansible-playbook playbook.yml [options]

-u REMOTE_USER, --user=REMOTE_USER
  ssh
-k, --ask-pass
 ssh
-s, --sudo
 sudo  root     Linux   sudo
-U SUDO_USER, --sudo-user=SUDO_USER
 sudo
-K, --ask-sudo-pass       —sudo
-T TIMEOUT, --timeout=TIMEOUT
  ssh        10
-C, --check           playbook
-e EXTRA_VARS, --extra-vars=EXTRA_VARS
          key=value      YAML or JSON          -e
```

```
-f FORKS, --forks=FORKS           5
-i INVENTORY, --inventory-file=INVENTORY
     hosts        default=/etc/ansible/hosts
-l SUBSET, --limit=SUBSET
      pattern  - hosts:
--list-hosts               playbook          playbook
--list-tasks      playbook       task
--private-key=PRIVATE_KEY_FILE
--step            task    task
--syntax-check       playbook              playbook
-t TAGS, --tags=TAGS    play   task   tag              tag
--skip-tags=SKIP_TAGS     play   task   tag
-v, --verbose             -vvv

    https://www.imooc.com/article/22729
```

- ansible-playbook [yaml yml]
- ansible-playbook a.yml
-

> -k(–ask-pass) ssh -K(-ask-become-pass) sudo -u

```
ansible-playbook a.yml --syntax-check    #  yaml
ansible-playbook a.yml --list-task       #  tasks
ansible-playbook a.yml --list-hosts      #
ansible-playbook a.yml --start-at-task='Copy Nginx.conf'      #    task
```

```
# vim a.yml
---
- hosts:  192.168.200.129                  //
    remote_user:  root                         //
    tasks:                                              //    ↓
     - name:  disable selinux                //
       command:  '/sbin/setenforce 0'     //  command
     - name:  start httpd                          //     httpd
       service:  name=httpd state=started         //  service    httpd
# ansible-playbook a.yml --syntax-check    #  yaml
# ansible-playbook a.yml
```

```
mkdir -p ansible-playbook/roles/nginx/tasks

cd ansible-playbook

touch site.yml

touch roles/nginx/tasks/main.yml
```

site.yml

```
---
- hosts: dev1
  gather_facts: no
  remote_user: develop
  roles:
    - nginx
```

roles/nginx/tasks/main.yml

```
---
- name: install nginx
  yum: name=nginx state=present
- name: start service nginx
  service: name=nginx state=restated
```

```
ansible-playbook site.yml --syntax-check

ansible-playbook roles/nginx/tasks/main.yml --syntax-check
```

ansible centos -m user -a 'name=gdtcs'

vim chgpwd.yml

```
---
- hosts: centos
  gather_facts: false
  remote_user: root
  tasks:
```

```
  - name: Change password
    user: name={{ username }} password={{ passwd | password_hash('sha512') }}
update_password=always
```

ansible-playbook chgpwd.yml -e "username=root passwd=root"

ansible centos -a 'yum install -y /root/docker/docker-ce-19.03.3-3.el7.x86_64.rpm'

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