

📄 📄📄!

Ansible📄 📄 📄 IT 📄📄 📄📄, 📄 📄, 📄, 📄 📄📄 📄📄📄 📄📄📄 📄 📄 📄. 📄📄📄 📄 📄📄, SSH📄 📄 📄📄📄 📄 📄📄 📄 📄.

Jinja📄 📄📄 📄📄 📄📄 📄📄, 📄📄📄 📄📄📄 📄📄📄 📄📄📄 📄 📄 📄. Jinja📄 Ansible📄 📄 📄📄, 📄📄 📄📄 📄📄📄 📄 📄📄 📄📄

Ansible📄 Jinja📄 Control 📄📄 📄 📄📄. 📄 📄📄 📄📄📄 📄📄 📄 📄📄 📄 📄📄📄 📄 📄 📄.

📄📄 📄 📄 📄, selinux 📄📄 📄 📄 📄.

```
# 📄📄 selinux=enforcing📄 selinux=disabled📄 📄  
vi /etc/selinux/config  
.  
.  
selinux=disabled
```

Kubespray 📄 📄

Control 📄 📄 📄

📄 📄📄 📄📄 📄 📄📄 📄📄 pip📄 📄 📄

```
sudo apt update  
  
# 📄📄 📄 kubespray 📄📄 📄📄 📄  
sudo apt install git python3 python3-pip -y
```

📄📄 📄📄 pip 📄📄 📄 📄

```
python3 -V  
python 3.10.6  
  
pip -V  
pip 22.0.2 from /usr/lib/python3/dist-packages/pip (python 3.10)
```

pip📄 📄 Ansible 📄 Jinja 📄📄 📄 📄 📄. pip📄 📄 📄📄📄 📄 📄📄 📄📄 pip📄 📄📄 📄📄 📄 📄📄, Ansible📄 Jinja 📄

git clone `https://github.com/kubernetes-incubator/kubespray.git`

```
git clone https://github.com/kubernetes-incubator/kubespray.git
```

kubespray `requirements.txt`

```
# kubespray
cd kubespray

# pip
pip install -r requirements.txt
```

`requirements.txt`

```
ansible==5.7.1
ansible-core==2.12.5
cryptography==3.4.8
jinja2==3.1.2
jmespath==1.0.1
MarkupSafe==2.1.2
netaddr==0.8.0
pbr==5.11.1
ruamel.yaml==0.17.21
ruamel.yaml.clib==0.2.7
```

`ansible`

```
ansible --version
```

```
ansible [core 2.12.5]
  config file = /home/ansible/kubespray/ansible.cfg
  configured module search path = ['/home/ansible/kubespray/library']
  ansible python module location = /home/ansible/.local/lib/python3.10/site-packages/ansible
  ansible collection location = /home/ansible/.ansible/collections:/usr/share/ansible/collections
  executable location = /home/ansible/.local/bin/ansible
  python version = 3.10.6 (main, Mar 10 2023, 10:55:28) [GCC 11.3.0]
```

```
jinja version = 3.1.2
libyaml = True
```

-bash: ansible: command not found?

ansible 命令未找到，Ansible 的 PATH 环境变量未配置。

Ansible 安装目录

```
ls ~/.local/bin/
__pycache__  ansible-config  ansible-console  ansible-galaxy  ansible-playbook  ansible-test  jp.py  pbr
ansible      ansible-connection  ansible-doc      ansible-inventory  ansible-pull      ansible-vault  netaddr
```

使用 pip 安装 Ansible 到 ~/.local/bin 目录。Python packaging 工具，用于安装和管理 Python 包。

Ansible 的 ~/.bashrc 文件

~/.bashrc 中的 Bash Shell 配置

```
vi ~/.bashrc

# 配置 PATH
export PATH=$PATH:/home/ansible/.local/bin

# 配置 ansible
:wq

# bashrc 文件生效
source ~/.bashrc
```

ansible 命令配置

```
# inventory/sample 目录复制到 inventory/mycluster 目录
# -rfp 递归复制目录
cp -rfp inventory/sample inventory/mycluster
```

```

# IPS 列表，IP 列表
declare -a IPS=(192.168.1.150 192.168.1.160 192.168.1.170)

# inventory.py 脚本
# 设置 CONFIG_FILE 为 hosts.yaml，hosts.yaml 文件
CONFIG_FILE=inventory/mycluster/hosts.yml python3 contrib/inventory_builder/inventory.py ${IPS[@]}

# inventory 脚本 IP 列表 (hosts.yaml) 文件

```

编辑 hosts.yaml 文件

```

vi inventory/mycluster/hosts.yml

all:
  hosts:
    node1:
      ansible_host: 192.168.1.150 # 设置 IP 地址
      ip: 192.168.1.150
      access_ip: 192.168.1.150
    node2:
      ansible_host: 192.168.1.160
      ip: 192.168.1.160
      access_ip: 192.168.1.160
    node3:
      ansible_host: 192.168.1.170
      ip: 192.168.1.170
      access_ip: 192.168.1.170
  children:
    kube_control_plane: # 控制平面
      hosts:
        node1:
    kube_node: # 节点
      hosts:
        node2:
        node3:
    etcd: # etcd 节点
      hosts:
        node1:

```

```
k8s_cluster:
  children:
    kube_control_plane:
    kube_node:
calico_rr:
  hosts: {}
```

❏ ❏ ❏❏❏❏ ❏❏❏❏ ❏❏ ❏❏ ❏ ❏❏ ❏❏ ❏❏ ❏❏ ❏❏❏:

```
vi inventory/mycluster/group_vars/k8s_cluster/k8s-cluster.yml
```

```
# ❏❏ ❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏
# 20❏❏❏
kube_version: v1.26.5
# 70❏❏❏
kube_network_plugin: calico
# 76❏❏❏
kube_service_addresses: 10.233.0.0/18
# 81❏❏❏
kube_pods_subnet: 10.233.64.0/18
# 160❏❏❏
cluster_name: cluster.local
# 229❏❏❏
container_manager: containerd
```

❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏:

```
vi inventory/mycluster/group_vars/k8s_cluster/addons.yml
```

```
# ❏❏ ❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏ ❏❏❏❏
```

```
# 4
```

```
dashboard_enabled: false
```

```
# 7
```

```
helm_enabled: false
```

```
# 10
```

```
registry_enabled: false
```

```
# 16
```

```
metrics_server_enabled: false
```

```
# 100
```

```
ingress_nginx_enabled: false
```

```
# 177
```

```
metallb_enabled: false
```

```
# 246
```

```
argocd_enabled: false
```

Control root

Control

Control 'ansible' A sudoers.d

```
#
```

```
useradd ansible
```

```
passwd ansible
```

```
New Password:
```

```
# root sudoers ansible root
```

```
echo "ansible ALL=(ALL) NOPASSWD:ALL" | sudo tee /etc/sudoers.d/root
```

Control

Ansible playbook to configure Kubernetes cluster nodes.

```
ansible-playbook -i inventory/mycluster/hosts.yml --become --become-user=root cluster.yml
```

Ansible playbook to configure Kubernetes cluster nodes (20 ~ 40 nodes).

Ansible playbook to configure Kubernetes cluster nodes.

```
TASK [network_plugin/calico : Check if inventory match current cluster configuration] *****
ok: [node1] => {
  "changed": false,
  "msg": "All assertions passed"
}
Sunday 12 March 2023 08:40:32 +0000 (0:00:00.191)    0:39:33.779 *****
Sunday 12 March 2023 08:40:32 +0000 (0:00:00.112)    0:39:33.892 *****
Sunday 12 March 2023 08:40:33 +0000 (0:00:00.108)    0:39:34.000 *****
PLAY RECAP *****
localhost                : ok=3    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
node1                    : ok=727  changed=16   unreachable=0    failed=0    skipped=1263  rescued=0    ignored=1
node2                    : ok=621  changed=10   unreachable=0    failed=0    skipped=1113  rescued=0    ignored=1
node3                    : ok=623  changed=10   unreachable=0    failed=0    skipped=1111  rescued=0    ignored=1
```

Ansible playbook to configure Kubernetes cluster nodes.

```
[root@node1 user]# kubectl get nodes
NAME        STATUS    ROLES    AGE     VERSION
node1       Ready    control-plane   3h8m    v1.26.5
node2       Ready    <none>        3h7m    v1.26.5
node3       Ready    <none>        3h7m    v1.26.5
```

Worker nodes are in state "Ready", Worker nodes are in state "Ready".

Label <none> is not present on worker nodes.

```
kubectl label node <node> node-role.kubernetes.io/worker=worker
```

Ansible:

```
[root@node1 user]# kubectl get nodes
NAME        STATUS    ROLES    AGE     VERSION
node1       Ready    control-plane   3h21m    v1.26.5
node2       Ready    worker        3h20m    v1.26.5
node3       Ready    worker        3h20m    v1.26.5
```

Updated 26 June 2023 01:16:41 by □