

Creating an Ansible playbook

Installing Ansible on control node

These are the instructions to install Ansible on Ubuntu 20.04 LTS. To install on other distributions reference [Official Ansible Documentation](https://docs.ansible.com/ansible/latest/installation_guide/index.html).

Update packages with `sudo apt update`

```
sebastian@LAPTOP-IRMJH3C9:/$ sudo apt update
Get:1 http://archive.ubuntu.com/ubuntu focal InRelease [265 kB]
Get:2 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:5 http://archive.ubuntu.com/ubuntu focal/main amd64 Packages [970 kB]
```

Once the packages are updated, run `sudo apt install ansible` to install the software. Type `y` when prompted.

```
sebastian@LAPTOP-IRMJH3C9:/$ sudo apt install ansible
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ieee-data python3-argcomplete python3-crypto python3-dnspython python3-jmespath python3-kerberos python3-libcloud
  python3-lockfile python3-netaddr python3-ntlm-auth python3-requests-kerberos python3-requests-ntlm python3-selinux
  python3-winrm python3-xlrd python3-xlsxwriter
Suggested packages:
  cowsay sshpass python-lockfile-doc ipython3 python-netaddr-docs
The following NEW packages will be installed:
  ansible ieee-data python3-argcomplete python3-crypto python3-dnspython python3-jmespath python3-kerberos
  python3-libcloud python3-lockfile python3-netaddr python3-ntlm-auth python3-requests-kerberos python3-requests-ntlm
  python3-selinux python3-winrm python3-xlrd python3-xlsxwriter
0 upgraded, 16 newly installed, 0 to remove and 259 not upgraded.
Need to get 9644 kB of archives.
After this operation, 90.2 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

Type `ansible --version` to check if the installation has been successful

```
sebastian@LAPTOP-IRMJH3C9:/$ ansible --version
ansible 2.9.6
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/home/sebastian/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  executable location = /usr/bin/ansible
  python version = 3.8.2 (default, Mar 13 2020, 10:14:16) [GCC 9.3.0]
```

Configuring inventory of hosts

Type `cd /etc/ansible` to move to the folder where the hosts file is stored.

```
sebastian@LAPTOP-IRMJH3C9:~$ cd /etc/ansible
sebastian@LAPTOP-IRMJH3C9:/etc/ansible$ ls
ansible.cfg  hosts
```

Open the hosts file using any editor. In this case vim will be used.

```
sebastian@LAPTOP-IRMJH3C9:/etc/ansible$ vi hosts
```

Add a new group of hosts at the end of the file. To create a group, write [`<group-name>`] and below write all the hosts' ips.

```
[vms]
192.168.100.26
192.168.100.27
```

Run the command `ansible <group-name> -m ping` to check if Ansible is able to communicate with the hosts.

```
sebastian@LAPTOP-IRMJH3C9:/etc/ansible$ ansible vms -m ping
192.168.100.26 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
[DEPRECATION WARNING]: Distribution fedora 35 on host 192.168.100.27 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.
192.168.100.27 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
```

Creating the playbook

Create a new playbook file on /etc/ansible. Use `touch <filename>.yaml` or, as in this case, `sudo vi <filename>.yaml`

```
sebastian@LAPTOP-IRMJH3C9:/etc/ansible$ sudo vi runjenkins.yaml
```

The following playbook will install Docker SDK on the servers in order to user `docker_container` module to run a Docker container. For more information about modules, visit [Ansible Official Module Documentation](https://docs.ansible.com/ansible/latest/modules/).

```

- name: Run Docker containers with Jenkins
  hosts: vms
  tasks:
    - name: Install Docker SDK for python
      pip:
        name:
          - docker
          - docker-compose

    - name: Run containers with Jenkins
      docker_container:
        name: jenkins-python
        volumes:
          - jenkins_home:/var/jenkins_home
        detach: true
        image: jenkins:python
        ports:
          - "8080:8080"
          - "50000:50000"
        state: started

```

To run a playbook, type in console `ansible-playbook <playbook-name>.yaml`

```

sebastiangLAPTOP-100JH3C9:/etc/ansible$ ansible-playbook runjenkins.yml

PLAY [Run Docker containers with Jenkins] *****

TASK [Gathering Facts] *****
ok: [192.168.100.26]
[DEPRECATION WARNING]: Distribution fedora 35 on host 192.168.100.27 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: [192.168.100.27]

TASK [Install docker SDK for python] *****
ok: [192.168.100.27]
ok: [192.168.100.26]

TASK [Run containers with Jenkins] *****
changed: [192.168.100.26]
changed: [192.168.100.27]

PLAY RECAP *****
192.168.100.26      : ok=3    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
192.168.100.27      : ok=3    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

```

If everything was configured successfully, all tasks should have been executed on the remote servers.

Remote server 1:



Welcome to Jenkins!

Sign in

☐ Keep me signed in

Remote server 2:



Welcome to Jenkins!

Sign in

☐ Keep me signed in