

Ansible Task-1

Ansible:-

Ansible is an open-source software provisioning, configuration management, and



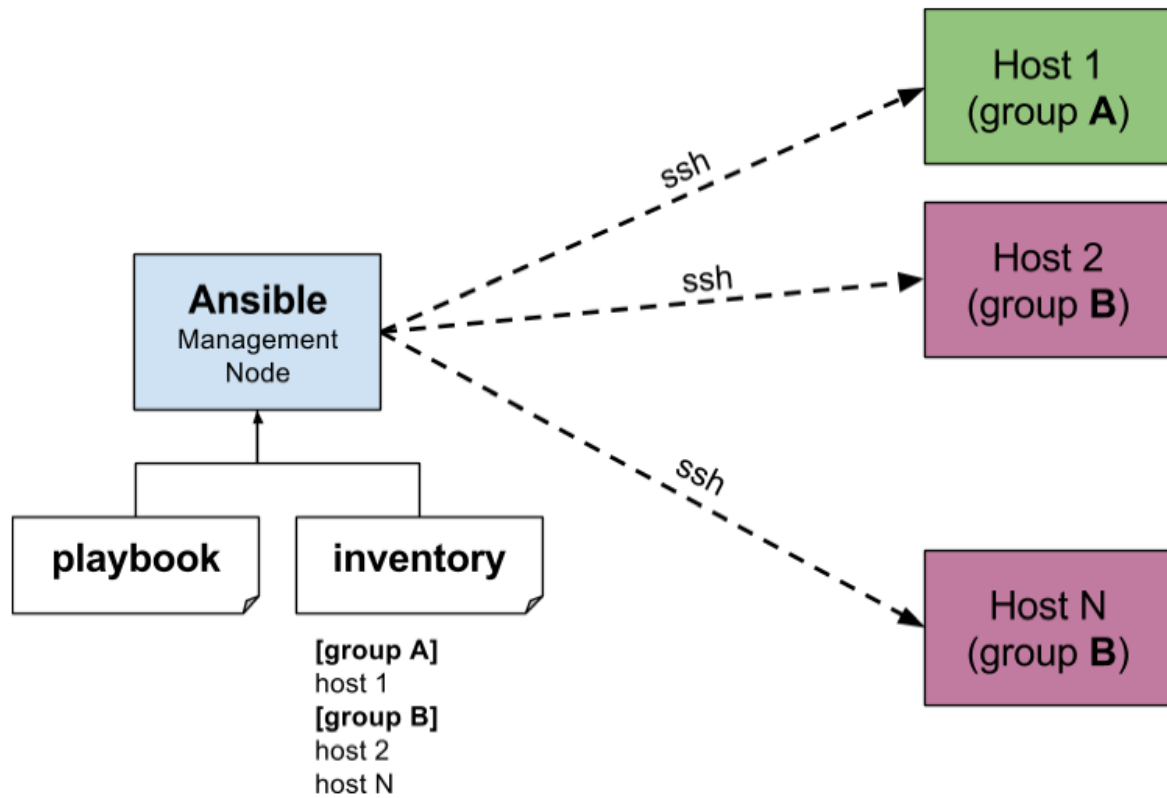
application-deployment tool enabling infrastructure as code. It runs on many Unix-like systems, and can configure both Unix-like systems as well as Microsoft Windows.

How It's work:-

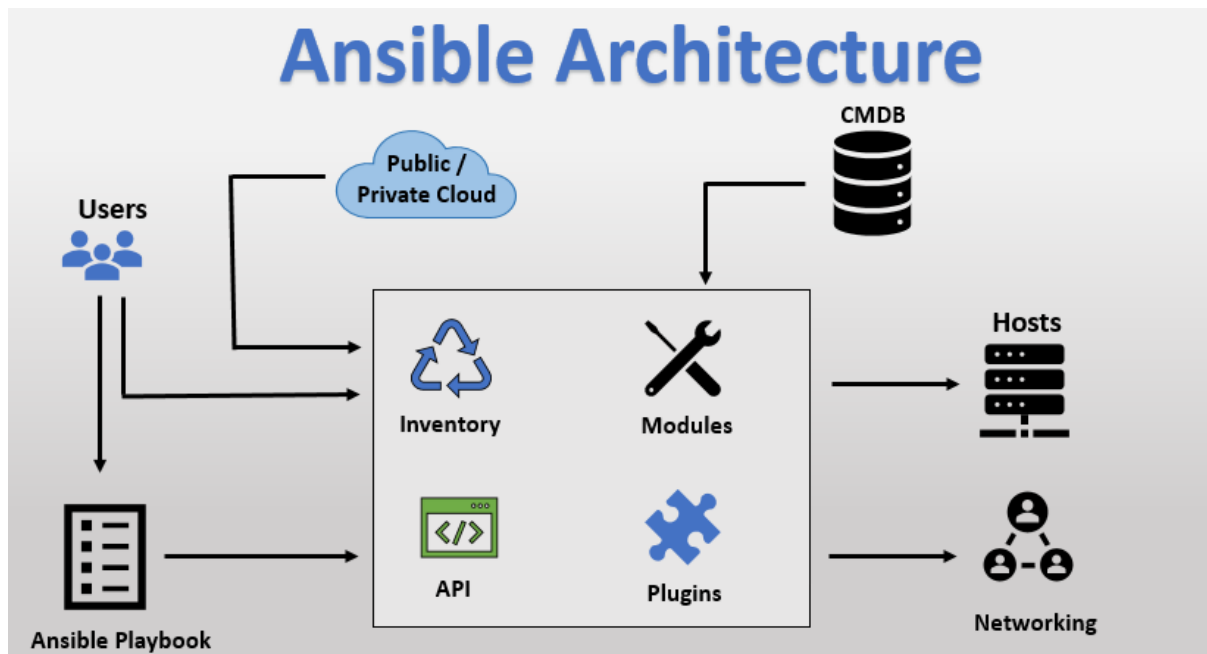
Ansible works by connecting to your nodes and pushing out small programs, called "**Ansible** modules" to them. ... **Ansible** then executes these modules (over SSH by default), and removes them when finished. Your library of modules can reside on any machine, and there are no servers, daemons, or databases required.

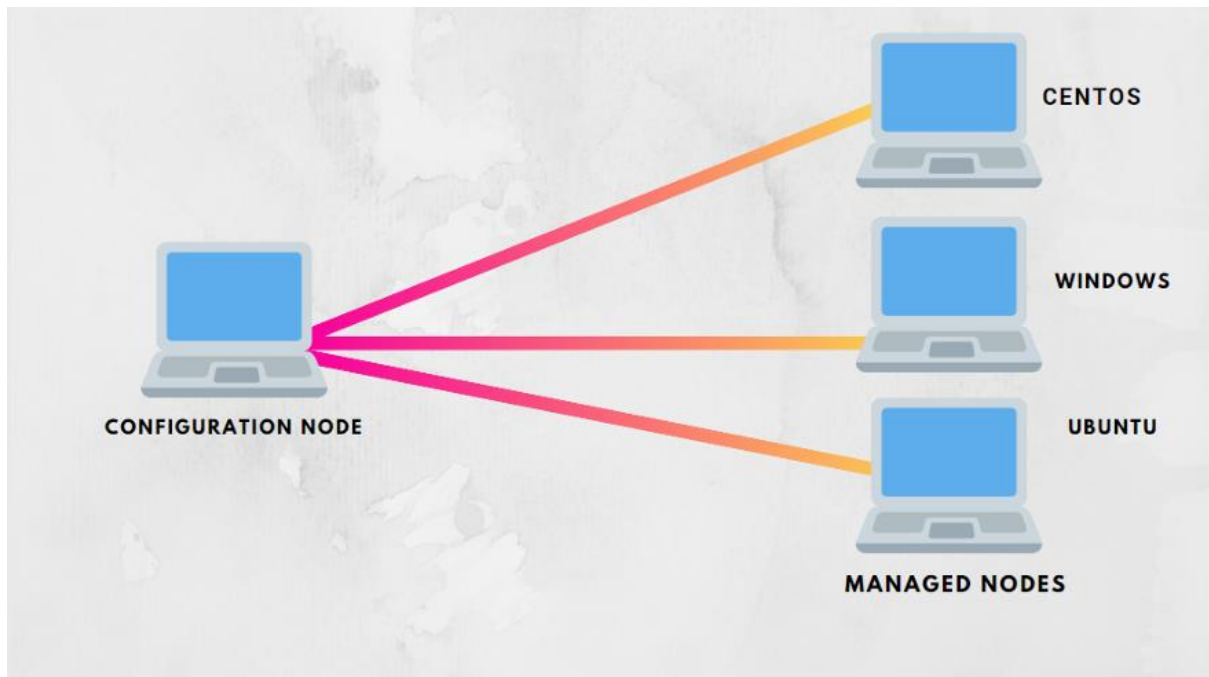
Is Ansible written in Python?

Ansible itself is **written in Python** and has a fairly minimal learning curve. **Ansible** follows a simple setup procedure and does not depend on any additional software, servers or client daemons. It manages nodes over SSH and is parallel by default.



Ansible Architecture:-





Ansible task:-

Write an Ansible PlayBook that does the following operations in the managed nodes:

- ◆ Configure Docker
- ◆ Start and enable Docker services

- ◆ Pull the httpd server image from the Docker Hub
- ◆ Run the httpd container and expose it to the public
- ◆ Copy the html code in /var/www/html directory and start the web server

configure Docker ,first I have to configure yum and then install docker and start the docker services. If everything works fine , We also have to configure a web-server.

As ansible is written on the top of python so we can use python package manager to install ansible

```
pip3 install ansible
```

```
Check version of ansible,check all the host
```

```

Activities Terminal Tue 23:54
root@localhost:~

File Edit View Search Terminal Help

[root@localhost ~]# ansible --version
ansible 2.9.11
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/root/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/local/lib/python3.6/site-packages/ansible
  executable location = /usr/local/bin/ansible
  python version = 3.6.8 (default, Jan 11 2019, 02:17:16) [GCC 8.2.1 20180905 (Red Hat 8.2.1-3)]
[root@localhost ~]# ansible all --list-hosts
hosts (1):
  192.168.43.71
[root@localhost ~]#

```

We create a yml file `repo,copy, container, service` include for docker in `webdocker.yml` file

```
vim webdocker.yml //create yml file for config
docker(use command)
```

```
ansible-playbook webdocker.yml //run the playbook(use this command)
```

The screenshot shows a terminal window with the following content:

```
root@localhost:~# ansible-playbook -i hosts webdocker.yml
PLAYBOOK: webdocker.yml
--
name: Integrating ansible with docker
hosts: 192.168.43.71
tasks:
  - name: adding docker repo
    yum_repository:
      name: docker repo
      description: docker repo
      baseurl: https://download.docker.com/linux/centos/7/x86_64/stable
      gpgcheck: no
  - name: docker package
    package:
      name: "docker-ce-18.06.3.ce-3.el7.x86_64"
      state: present
  - name: start docker service
    service:
      name: "docker"
      state: started
      enabled: yes
  - name: "Installing python"
    command: "pip3 install docker"
  - name: copy local file into the folder
    file:
      path: "/web"
      state: directory
  - name: copying local file into folder
    copy:
      src: "index.html"
      dest: "/web/"
  - name: creating container
    docker_container:
      name: "webserver"
      image: "httpd"
      state: started
      exposed_ports:
        - "80"
      ports:
        - "8080:80"
      volumes:
        - /web:/usr/local/apache2/htdocs/
```

The terminal status bar at the bottom shows the file path and line/character count: "webdocker.yml" 40L, 1136C. The bottom right corner displays "5.1 All".

```
Activities Terminal Tue 23:03 root@localhost~  
File Edit View Search Terminal Tabs Help  
root@localhost~  
[root@localhost ~]# vim webdocker.yml  
[root@localhost ~]# ansible-playbook webdocker.yml  
PLAY [Integrating ansible with docker] *****  
TASK [Gathering Facts] *****  
ok: [192.168.43.71]  
TASK [adding docker repo] *****  
ok: [192.168.43.71]  
TASK [docker package] *****  
ok: [192.168.43.71]  
TASK [start docker service] *****  
ok: [192.168.43.71]  
TASK [Installing python] *****  
changed: [192.168.43.71]  
TASK [copy local file into the folder] *****  
ok: [192.168.43.71]  
TASK [copying local file into folder] *****  
ok: [192.168.43.71]  
TASK [creating container] *****  
changed: [192.168.43.71]  
PLAY RECAP *****  
192.168.43.71 : ok=8 changed=2 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0  
[root@localhost ~]# systemctl status docker  
● docker.service - Docker Application Container Engine  
Loaded: loaded (/usr/lib/systemd/system/docker.service; enabled; vendor preset: disabled)  
Active: active (running) since Tue 2020-08-04 21:33:14 IST; 1h 27min ago  
Docs: https://docs.docker.com  
Main PID: 1397 (dockerd)  
Tasks: 18  
Memory: 148.5M  
CGroup: /system.slice/docker.service  
└─ 1397 /usr/bin/dockerd -H fd://  
└─ 14326 /usr/bin/docker-proxy -proto tcp -host-ip 0.0.0.0 -host-port 8888 -container-ip 172.17.0.2 -container-port 88  
Aug 04 21:33:12 localhost.localdomain dockerd[1397]: time="2020-08-04T21:33:12.439973134+05:30" level=warning msg="Your kernel does not support cgroup blkio weight"
```

after complete task check status of docker ,check images

```
Activities Terminal Tue 23:07 root@localhost:/web  
File Edit View Search Terminal Tabs Help  
root@localhost:/web  
Aug 04 22:55:16 localhost.localdomain dockerd[1397]: time="2020-08-04T22:55:16.090514230+05:30" level=warning msg="xtables contention detected while running [-t nat -C DOCKER -p tcp -d 0/0 --dport 8888 -j DNAT  
[root@localhost ~]# ls  
anaconda-ks.cfg desktop docker_task.yml docker.yml Documents Downloads index.html Initial-setup-ks.cfg Music Pictures Public Templates Videos webdocker.yml winscp  
[root@localhost ~]# cd /web  
[root@localhost web]# ls  
index.html  
[root@localhost web]# cat index.html  
working fine!!!!  
[root@localhost web]# docker images  
REPOSITORY TAG IMAGE ID CREATED SIZE  
httpd latest 9d2a8c6e5b57 12 days ago 166MB  
centos 8 831691599b88 6 weeks ago 215MB  
[root@localhost web]# docker ps  
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES  
490204b30f86 httpd "httpd-foreground" 11 minutes ago Up 10 minutes 0.0.0.0:8888->80/tcp webserver  
[root@localhost web]# docker inspect webserver  
{  
  "Id": "490204b30f86f4362fc83e9c9c38c2bd0d82e1e6d15f8d6c8efa73c09278e6e7",  
  "Created": "2020-08-04T17:25:10.772565828Z",  
  "Path": "httpd-foreground",  
  "Args": [],  
  "State": {  
    "Status": "running",  
    "Running": true,  
    "Paused": false,  
    "Restarting": false,  
    "OOMKilled": false,  
    "Dead": false,  
    "Pid": 14349,  
    "ExitCode": 0,  
    "Error": "",  
    "StartedAt": "2020-08-04T17:25:10.374977362Z",  
    "FinishedAt": "0001-01-01T00:00:00Z"  
  },  
  "Image": "sha256:9d2a8c6e5b5714303c7b72793311d155b1652d270a785c25b88197069ba78734",  
  "ResolvConfPath": "/var/lib/docker/containers/490204b30f86f4362fc83e9c9c38c2bd0d82e1e6d15f8d6c8efa73c09278e6e7/resolv.conf",  
  "HostnamePath": "/var/lib/docker/containers/490204b30f86f4362fc83e9c9c38c2bd0d82e1e6d15f8d6c8efa73c09278e6e7/hostname",  
  "HostsPath": "/var/lib/docker/containers/490204b30f86f4362fc83e9c9c38c2bd0d82e1e6d15f8d6c8efa73c09278e6e7/hosts",  
  "LogPath": "/var/lib/docker/containers/490204b30f86f4362fc83e9c9c38c2bd0d82e1e6d15f8d6c8efa73c09278e6e7/490204b30f86f4362fc83e9c9c38c2bd0d82e1e6d15f8d6c8efa73c09278e6e7-json.log",  
  "Name": "/webserver",  
  "RestartCount": 0,  
  "Restart": "on-failure",  
  "Driver": "overlay2",  
  "Platform": "linux",  
  "MountLabel": ""  
}
```

We can check in cmd by command (#curl ip:port)

```
Command Prompt
Microsoft Windows [Version 10.0.18363.959]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\hp>curl 192.168.43.71:8888
working fine!!!!

C:\Users\hp>
```

Or on a webpage we check using ip:port(in my case i used ex. 192.168.43.71:8888)

