
ANSIBLE

Ansible

It is an open source automation software

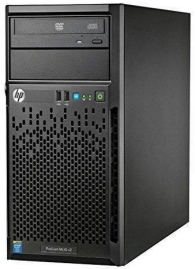
- Simple
- Powerful
- Agentless
- Cross Platform

Uses

- Provisioning
- Configuration Management
- Application deployment
- Orchestration

How Ansible works

CONTROL NODE



MANAGED NODE

Control Node - Device where ansible is deployed

Managed Node - Device(s) to be Managed by Ansible

Inventory - List of host or group of hosts which are managed by ansible

Module - Piece of code written in python or powershell (or any) to do task in managed node

https://docs.ansible.com/ansible/latest/modules/list_of_all_modules.html

Play - Module to be executed in target node

PlayBook

- YAML file contains one or multiple play

  eg:

  playbook.yaml or playbook.yml

Requirements to Install Ansible

Ansible can be installed as control node which should be a unix or linux-based OS

Python package must be installed on controller node

Verify

yum list python

python --version

Installing Ansible in RHEL

#Download EPEL Software

wget http://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm

#Install EPEL with rpm installer

rpm -ivh epel-release-latest-7.noarch.rpm

#Install Ansible

yum install ansible -y

Managed Node Requirement

Linux	-	python 2.4 or later
		sshd
Windows	-	powershell 3.0 or newer & .net 4.0
		winrm

Method1

Connecting Linux Managed Node via Ansible

#Generate ssh key pair in ansible controller

ssh-keygen

#Copy the content of public key (~/.ssh/id_rsa.pub) to managed node's authorized_key file (~/.ssh/authorized_keys)

Method2

Connecting Linux Managed Node via Ansible

1. Copy the private key file provided by aws to ansible controller
2. Change Permission of private key

   chmod 600 ansible.pem

Verify

```
ssh -i ansible.pem ec2-user@10.0.0.100
```

you will be able to login as ec2-user without password to managed node

Default Inventory List

/etc/ansible/hosts

Default Ansible configuration

/etc/ansible/ansible.cfg

Creating Project Directory

vi /sansbound/ansible.cfg
[defaults]
inventory=/sansbound/inventory

vi /sansbound/inventory
server1
server2
server3
server4

[mumbai]
server1
server2

Verify host or group of hosts from inventory

```
ansible  rhel --list-hosts
```

Privilege

Ad-hoc Command

It is a single task which executes a module in the managed node(s)

Ansible Playbook

It is a YAML file contains one or multiple play

Indentation

vim ~/.vimrc

autocmd FileType yaml setlocal ai ts=2 sw=2 et

Writing a Playbook

Verify Syntax

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

Running a playbook

```
ansible-playbook  devops.yml
```

AWS Managed by Ansible

ansible.cfg file for AWS

vi ansible.cfg

[defaults]

inventory=inventory

host_key_checking=False

inventory file for AWS

vi inventory

localhost

Generate key pair and copy public key to authorized_keys

ssh-keygen

copy content of /root/.ssh/id_rsa.pub to /root/authorized_keys(localhost)

Verify

ansible -m ping localhost

Install Softwares

#Install PIP

```
yum install python2-pip-8.1.2-8.el7.noarch -y
```

#Install BOTO

```
pip install boto
```

Simply Playbook for EC2 Instance Launch

```
- name: Launch EC2 Instance
  ec2:
        aws_access_key: XYZ
        aws_secret_key: XYZ
        region: ap-south-1
        image: ami-007d5db58754fa284
        instance_type: t2.micro
        key_name:  ansible
```

Installing docker in amazon linux using ansible

Docker Commands

```
docker images
docker ps
docker ps -a
docker run -d alpine
docker container stop 79
docker container stop `docker container ls -aq`
docker container rm `docker container ls -aq`
```

Run jenkins container

```
docker pull jenkins/jenkins:lts
docker run -d -p 8080:8080 -p 50000:50000 jenkins/jenkins:lts
docker exec <cid> cat /var/jenkins_home/secrets/initialAdminPassword
```

Integrate Jenkins with Ansible

#Login to Container

sudo docker exec -it <cid> /bin/bash

#create key pair in jenkins as jenkins user

ssh-keygen

#copy the public key to ansible machine

Create a jenkins job to run ansible playbook

```
ssh root@ansible ansible-playbook -i /sansbound/inventory  --private-key
/sansbound/ansible.pem -u ec2-user -b /sansbound/deploy.yml
```