Ansible Architecture

Ansible is AgentLess

Ansible Tower/AWX

1. Graphical tool to work with Ansible
2. Easy based on Browser
3. Schedule your play's to run as specific time
4. Logs of plays run
5. RBAC

Modules Path:
/usr/lib/python2.7/site-packages/ansible/modules/

Control Node/Workstation (Linux/Unix Only) Python Installed
yum install ansible python -y

Inventory
- Static [static file with system name/IP] (yaml/ini)
- Dynamic [Active Directory, LDAP, Satellite CMDB, Openstack,AWS,VMWare, VirtualBox] via python script

Push a Task to Managed Hosts
1. Ad-Hoc Command (Development/Testing) One time NOT reusable
   ansible hostname -m Module_name -a 'option1=value1 option2=value2'
2. Playbook (Production) Reusable as many time
   ansible-playbook play1.yml

Playbooks in yaml:
(Indentation)
vim play.yaml
```
- name:  Playbook Purpose
 hosts: list_host
 tasks:
 - name: Install httpd
   yum:
        name: httpd
        state: latest
 - name: Create user
   Module_name:
        Module_options:
```

INVENTORY:
Default File: /etc/ansible/hosts
Custom File: YOUR_CUSTOM_PATH

ANSIBLE Configuration File:
Default File: /etc/ansible/ansible.cfg Level 1
User file(Home Dir): ~/.ansible.cfg Level 2
Project specific: ./ansible.cfg Level 3
Define Env Variable: ANSIBLE_CONFIG #=/tmp/ansible.config Level 4

thread thread thread thread thread forks=5

1. Copy module.py from Control Node to Managed Host (Temp Folder)
2. Change permission of module.py to executable via chmod u+x module.py
3. Check & Execute using python module.py and make changes(if not DESIRED)
4. Remove Module which was copied (rm -rf Module_path)

Managed Hosts/Nodes

Default Settings
ansible_connection: ssh
ansible_port: 22
ansible_user: root (variable file)
remote_user=devops (ansible.cfg)
ansible_password: redhat (SSH_KEY) [--ask-pass for Ad-hoc]

Python Installed — Linux
become: true
become_user: root
become_method: sudo/su
become_ask_pass: true/false

ansible_connection: winrm
ansible_port: 5986
ansible_user: devops (remote_user)
ansible_password: redhat (SSH_KEY)

PowerShell Installed — Windows
become: true
become_user: administrator
become_method: runas
become_ask_pass: true/false

user

ansible_connection: network_cli/netconf
ansible_port: 22 (Depend)
ansible_user: admin (remote_user)
ansible_password: student (SSH_KEY)

Python May/May Not — Network Device
become: true
become_user: admin
become_method: enable
become_ask_pass: true/false

Idempotent Modules/Behaviour
Desired State (OK, Changed, Fatal, ignoring)
Check if the Managed Hosts has already those configs ?
If Yes, Nothing Happen
If No, Config Changed Done

Cloud

In Network Device Case which doesn't have python(Normally):
1. Copy Module.py from Control Node to Itself(CN) (Temp Folder)
2. chmod u+x on the module copied on Control Node
3. Check & Execute module on Control Node (on behalf of Network Device) and create commands if changes required
4. Push Commands to Device and (On Control Node) Remove Module which was copied from localhost (Control Node) (rm -rf Module_path)