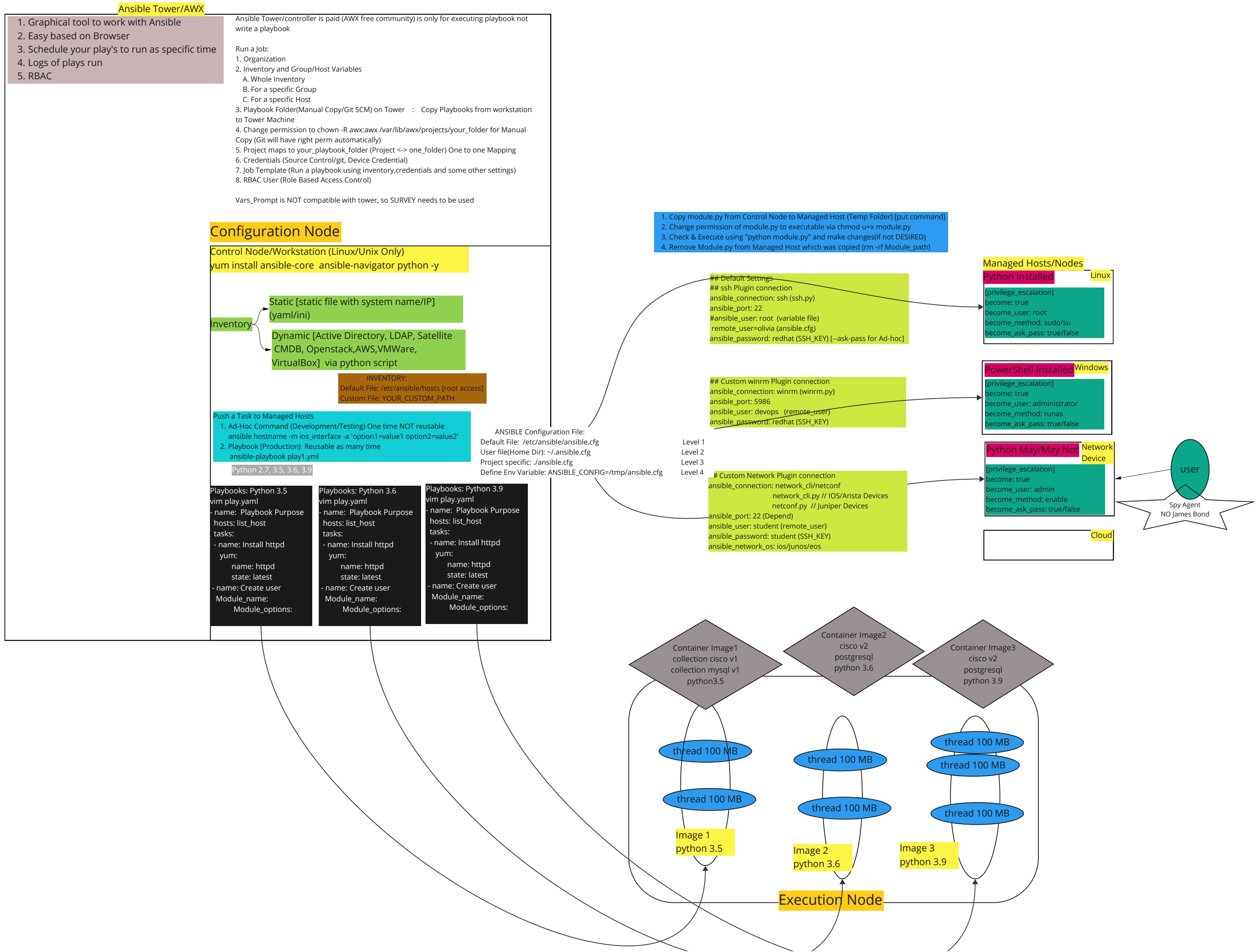
Ansible Architecture

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

Ansible Tower/controller is paid (AWX free community) is only for executing playbook not write a playbook

Run a Job:
1. Organization
2. Inventory and Group/Host Variables
   A. Whole Inventory
   B. For a specific Group
   C. For a specific Host
3. Playbook Folder(Manual Copy/Git SCM) on Tower : Copy Playbooks from workstation to Tower Machine
4. Change permission to chown -R awx:awx /var/lib/awx/projects/your_folder for Manual Copy (Git will have right perm automatically)
5. Project maps to your_playbook_folder (Project <-> one_folder) One to one Mapping
6. Credentials (Source Control/git, Device Credential)
7. Job Template (Run a playbook using inventory,credentials and some other settings)
8. RBAC User (Role Based Access Control)

Vars_Prompt is NOT compatible with tower, so SURVEY needs to be used

Configuration Node

Control Node/Workstation (Linux/Unix Only)
yum install ansible-core ansible-navigator 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

INVENTORY:
Default File: /etc/ansible/hosts [root access]
Custom File: YOUR_CUSTOM_PATH

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

Python 2.7, 3.5, 3.6, 3.9

```
Playbooks: Python 3.5
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:
```

```
Playbooks: Python 3.6
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:
```

```
Playbooks: Python 3.9
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:
```

```
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.cfg         Level 4
```

1. Copy module.py from Control Node to Managed Host (Temp Folder) [put command]
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.py from Managed Host which was copied (rm -rf Module_path)

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

```
## Custom winrm Plugin connection
ansible_connection: winrm (winrm.py)
ansible_port: 5986
ansible_user: devops   (remote_user)
ansible_password: redhat (SSH_KEY)
```

```
# Custom Network Plugin connection
ansible_connection: network_cli/netconf
                    network_cli.py // IOS/Arista Devices
                    netconf.py  // Juniper Devices
ansible_port: 22 (Depend)
ansible_user: student (remote_user)
ansible_password: student (SSH_KEY)
ansible_network_os: ios/junos/eos
```

Managed Hosts/Nodes

Python Installed — Linux

```
[privilege_escalation]
become: true
become_user: root
become_method: sudo/su
become_ask_pass: true/false
```

PowerShell Installed — Windows

```
[privilege_escalation]
become: true
become_user: administrator
become_method: runas
become_ask_pass: true/false
```

Python May/May Not — Network Device

```
[privilege_escalation]
become: true
become_user: admin
become_method: enable
become_ask_pass: true/false
```

Cloud

user

Spy Agent
NO James Bond

Execution Node

Container Image1
collection cisco v1
collection mysql v1
python3.5

Container Image2
cisco v2
postgresql
python 3.6

Container Image3
cisco v2
postgresql
python 3.9