

# Ansible

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# Outline

- What & Why
- Install
- Write PlayBook
- Write first PlayBook
- Ansible with cloud



ANSIBLE

# What & Why

## **AUTOMATION FOR EVERYONE**

Deploy apps. Manage systems. Crush complexity.  
Ansible helps you build a strong foundation for DevOps.

<https://www.ansible.com/>

```
# 5.1 建立用戶 migo, pandora, athena, hestia
#####
```

```
sh install_users.sh
# Add user into Migo Group
usermod -a -G migo yarn
usermod -a -G migo hdfs
```

```
# 5.2 建立目錄與設定權限
```

```
#####
```

```
# Create migo folder under /data
# mkdir /data/migo the hestia file already put on /data/migo/hestia
```

```
if [ ! -d "/data/migo" ]; then
    mkdir -p /data/migo
```

```
fi
chown migo:migo /data/migo
chmod 775 /data/migo
```

```
if [ ! -d "/data/migo/tmp" ]; then
    mkdir /data/migo/tmp
fi
```

```
test -e /tmp/tmp && unlink /tmp/tmp
chown athena:migo /data/migo/tmp
chmod 775 /data/migo/tmp
ln -s /data/migo/tmp /tmp/tmp
```

```
# Create ta folder for TA
for folder in $(echo ta ta_finish ta_backup);
do
    mkdir /data/migo/${folder}
    chown athena:migo /data/migo/${folder}
    chmod 777 /data/migo/${folder}
done
```

```
# 5.3 設定SSH
```

```
#####
```

```
# Copy Root SSH Key, I am not SURE need to do this root SSH-KEY, now?
```

```
if [ ! -d "/root/.ssh" ]; then
    mkdir -p "/root/.ssh"
fi
cp -pr /data/migo/deploy/hestia/util/makefile/ssh/* /root/.ssh
chmod 700 /root/.ssh
chmod 644 /root/.ssh/*
chmod 600 /root/.ssh/id_rsa
chown -R root:root /root/.ssh
```

```
# Copy Other User's SSH Key
```

```
for username in $(echo athena migo);
do
    if [ ! -d "/home/${username}/.ssh" ]; then
        mkdir -p "/home/${username}/.ssh"
    fi
    cp -pr /data/migo/deploy/hestia/util/makefile/${username}_ssh/* /home/${username}/.ssh
    chmod 700 /home/${username}/.ssh
```

Before

```

- hosts: local
  user: wuenhouse
  become: True
  tasks:
    # add users athena, pandora, hestia, and all under the group migo -----5-1
    - user: name=migo
    - user: name={{ item }} groups=migo
      with_items:
        - athena
        - pandora
        - hestia
        - yarn
        - hdfs
    # create folder ----- 5-2
    - name: ceate folder data migo and data migo tmp
      become: True
      file: path=/data/migo/tmp state=directory owner=athena group=migo mode=0775

    - name: ceate folder for ta
      become: True
      file: path=/data/migo/{{ item }} owner=athena group=migo mode=0777 state=directory
      with_items:
        - ta
        - ta_finish
        - ta_backup

    - name: deploy ssh #-----5-3
      become: True
      file: path=/home/{{ item }}/.ssh owner={{ item }} group={{ item }} mode=0700 state=directory
      with_items:
        - athena
        - migo

    - copy: src=/data/migo/deploy/hestia/util/makefile/{{ item }}_ssh/ dest=/home/{{ item }}/.ssh
      become: True
      with_items:
        - athena
        - migo

    - name: change mode
      file: path=/home/{{ item }}/.ssh/ mode=0700 state=directory
      with_items:
        - athena
        - migo

    - name: scp file to /data/migo
      shell: cp -pr /data/migo/deploy/{{ item }} /data/migo
      with_items:
        - athena
        - hestia

    - name: scp python code to /data/migo/lib/util and create soft link for athena_vaiable.py
      shell: cp /data/migo/deploy/athena/modules/*/bin/*.py /data/migo/athena/lib/util

    - name: reset ln
      stat: path={{variable_lk}}
      register: st

```

After

# What & Why

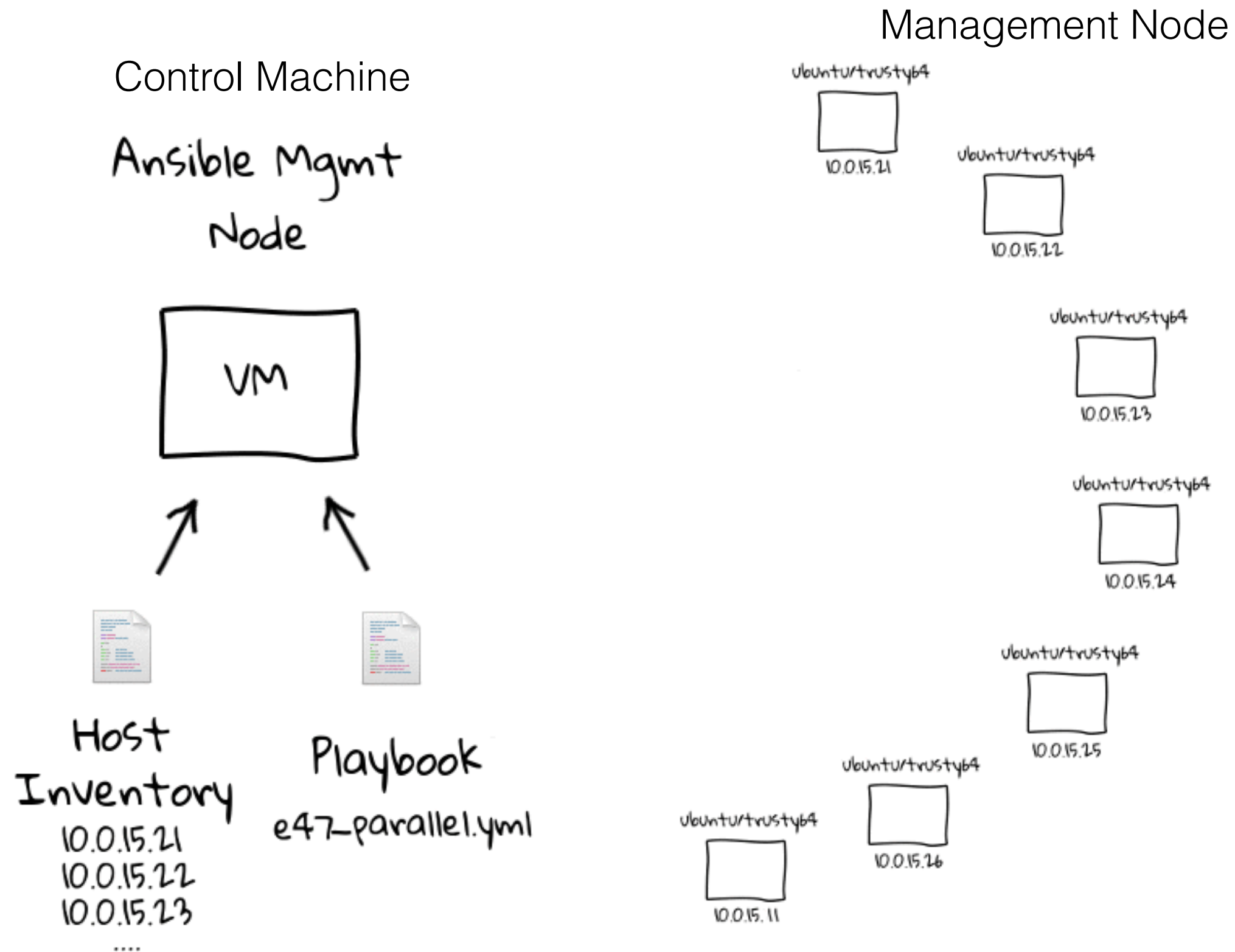
## COMPLETE IT AUTOMATION

Ansible seamlessly unites workflow orchestration with configuration management, provisioning, and application deployment in one easy-to-use and deploy platform.

Regardless of where you start with Ansible, you'll find our simple, powerful and agentless automation platform has the capabilities to solve your most challenging problems.

<https://www.ansible.com/>

# Install



# Install

- Requirements
  - Control Machine Requirement
    - Ansible can be run from any machine with Python 2.6 or 2.7 installed (Windows isn't supported for the control machine).
  - Managed Node Requirements
    - You also need Python 2.4 or later. If you are running less than Python 2.5 on the remotes, you will also need **python-simplejson**



# Install

- download.. <https://github.com/wuenhouse/Ansible/archive/master.zip>
- check python version
- deploy\_ansible\_env.sh

# Testing

- 解壓縮後運行方式
- path: /playbook/unit\_test.yml
- ansible-playbook unit\_test.yml
- 複雜範例：ansible-playbook ansible\_users.yml --extra-vars "variable\_lk=/data/migo/athena/lib/athena\_variable.py words=params"

# Definition

- config - 設定Ansible 的系統預設值，或是一些系統變數,ansible will read ANSIBLE\_CONFIG# ansible.cfg **in the current working directory**

```
[defaults]
private_key_file = /xxxx/xxx.pem
host_key_checking = False

[ssh_connection]
ssh_args = -o ForwardAgent=yes
```

- hostfile - 指定management nodes 的 file, use -i specify or default is **/etc/ansible/hosts**

```
[local]
127.0.0.1

[azclient]
10.65.0.19
```

- Playbook - 運行Ansible 的腳本
- role - 寫好的腳本可以重複使用

# Write PlayBook - role

- role - <https://galaxy.ansible.com/>
- case:
  - 如果要透過ansible安裝，但不知道怎麼寫，可以從ansible role base search 符合需求的直接安裝
- example roles:
  - - ocean.git
  - [https://galaxy.ansible.com/list#/roles?page=1&page\\_size=10&users=ocean&order=username,name](https://galaxy.ansible.com/list#/roles?page=1&page_size=10&users=ocean&order=username,name)
  - - { role: bfmartin.ssh\_known\_hosts, host: github.com, gitlab.migosoft.com }

# Write PlayBook - role

- 使用role範例 - playbook的內容

```
- hosts: azclient
  user: wuenhouse
  become: True
  roles:
    - ocean.git
    - { role: bfmartin.ssh_known_hosts, host: github.com, gitlab.migosoft.com }
  tasks:
    - name: clone pandora project from git
      become: False
      git: repo={{ project_git_repo }} dest={{ project_source_path }} accept_hostkey=True

    ## add users athena, pandora, hestia, and all under the group migo
    - user: name=migo
    - user: name={{ item }} groups=migo
      with_items:
        - athena
        - pandora
        - hestia

  vars:
    - project_git_repo: git@github.com:wuenhouse/Angular.git
    - project_source_path: /tmp/deploy
```

# Write first PlayBook

- 從安裝playbook 開始
- 寫一個playbook，可以運行在本機建立一個 user 是自己的名字，並在自己的home 目錄下 clone 一個open的git repository <https://github.com/wuenhouse/Angular.git>

# Ansible with cloud

- <http://wuen-house.blogspot.tw/2016/02/ansible.html?view=flipcard>  
請參考先前紀錄的過程