Ansible

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1 Introduction

Ansible est un outil d'automatisation sans agent que vous installez sur un nœud de contrôle. Depuis le nœud de contrôle, Ansible gère les machines et autres appareils à distance (par défaut, via le protocole SSH).

Vous n'avez pas besoin d'installer une base de données ou d'exécuter des démons. Ansible peut gérer toute une flotte de machines distantes à partir de ce nœud de contrôle. Ansible.

2 Playbook de base

2.1 Timezone

- name: Set timezone and configure timesyncd

  hosts: "*"

  become: yes

  tasks:

  - name: set timezone

  shell: timedatectl set-timezone africa/casablanca

```
root@pve:~/ansible/playbook# ansible-playbook   timezone.yml  -vvv --ask-become-passansible-playbook 2.7.7
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/root/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  executable location = /usr/bin/ansible-playbook
  python version = 3.7.3 (default, Jan 22 2021, 20:04:44) [GCC 8.3.0]
Using /etc/ansible/ansible.cfg as config file
SUDO password:
/etc/ansible/hosts did not meet host_list requirements, check plugin documentation if this is unexpected
/etc/ansible/hosts did not meet script requirements, check plugin documentation if this is unexpected
Parsed /etc/ansible/hosts inventory source with ini plugin

PLAYBOOK: timezone.yml *****************************************************1 plays in timezone.yml
What is your username?: ibrahimy
What is your password?:

PLAY [Set timezone and configure timesyncd] ************************************
TASK [Gathering Facts] *********************************************************task path: /root/ansible/playbook/timezone.yml:1
<10.10.2.56> ESTABLISH SSH CONNECTION FOR USER: ibrahimy
<10.10.2.56> SSH: EXEC ssh -C -o ControlMaster=auto -o ControlPersist=60s -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-with-mic,gssapi-keyex,hostba
sed,publickey -o PasswordAuthentication=no -o User=ibrahimy -o ConnectTimeout=10 -o ControlPath=/root/.ansible/cp/b542c5a8f2 10.10.2.56 '/bin/sh -c '"'"'echo ~ibrahimy && s
leep 0'"'"''
<10.10.2.56> (0, b'/home/ibrahimy\n', b'')
<10.10.2.56> ESTABLISH SSH CONNECTION FOR USER: ibrahimy
<10.10.2.56> SSH: EXEC ssh -C -o ControlMaster=auto -o ControlPersist=60s -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-with-mic,gssapi-keyex,hostba
sed,publickey -o PasswordAuthentication=no -o User=ibrahimy -o ConnectTimeout=10 -o ControlPath=/root/.ansible/cp/b542c5a8f2 10.10.2.56 '/bin/sh -c '"'"'( umask 77 && mkdir
 -p "` echo /home/ibrahimy/.ansible/tmp `"&& mkdir /home/ibrahimy/.ansible/tmp/ansible-tmp-1640246544.1407964-13661-186834012318019 && echo ansible-tmp-1640246544.1407964-1
3661-186834012318019="` echo /home/ibrahimy/.ansible/tmp/ansible-tmp-1640246544.1407964-13661-186834012318019 `" ) && sleep 0'"'"''
<10.10.2.56> (0, b'ansible-tmp-1640246544.1407964-13661-186834012318019=/home/ibrahimy/.ansible/tmp/ansible-tmp-1640246544.1407964-13661-186834012318019\n', b'')
Using module file /usr/lib/python3/dist-packages/ansible/modules/system/setup.py
<10.10.2.56> PUT /root/.ansible/tmp/ansible-local-13591n9vn87s8/tmpi8qkn15c TO /home/ibrahimy/.ansible/tmp/ansible-tmp-1640246544.1407964-13661-186834012318019/AnsibalIZ_se
tup.py
<10.10.2.56> SSH: EXEC sftp -b - -C -o ControlMaster=auto -o ControlPersist=60s -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-with-mic,gssapi-keyex,
hostbased,publickey -o PasswordAuthentication=no -o User=ibrahimy -o ConnectTimeout=10 -o ControlPath=/root/.ansible/cp/b542c5a8f2 '[10.10.2.56]'
<10.10.2.56> (0, b'sftp> put /root/.ansible/tmp/ansible-local-13591n9vn87s8/tmpi8qkn15c /home/ibrahimy/.ansible/tmp/ansible-tmp-1640246544.1407964-13661-186834012318019/Ans
iballZ_setup.py\n', b'')
```

Figure 1: synchronisation de timezone.

```
<10.10.2.56> ESTABLISH SSH CONNECTION FOR USER: ibrahimy
<10.10.2.56> SSH: EXEC ssh -C -o ControlMaster=auto -o ControlPersist=60s -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-
sed,publickey -o PasswordAuthentication=no -o User=ibrahimy -o ConnectTimeout=10 -o ControlPath=/root/.ansible/cp/b542c5a8f2 10.10.2.56 '/bin/sh
himy/.ansible/tmp/ansible-tmp-1640247029.73907-14981-34812102439542/ > /dev/null 2>&1 && sleep 0'''''''
<10.10.2.56> (0, b'', b'')
changed: [10.10.2.56] => {
    "changed": true,
    "cmd": "timedatectl set-timezone Africa/Casablanca",
    "delta": "0:00:01.438724",
    "end": "2021-12-22 05:37:09.658577",
    "invocation": {
        "module_args": {
            "_raw_params": "timedatectl set-timezone Africa/Casablanca",
            "_uses_shell": true,
            "argv": null,
            "chdir": null,
            "creates": null,
            "executable": null,
            "removes": null,
            "stdin": null,
            "warn": true
        }
    },
    "rc": 0,
    "start": "2021-12-22 05:37:08.219853",
    "stderr": "",
    "stderr_lines": [],
    "stdout": "",
    "stdout_lines": []
}
META: ran handlers
META: ran handlers

PLAY RECAP *********************************************************************************************************************************************
10.10.2.56               : ok=2    changed=1    unreachable=0    failed=0
```

Figure 2: synchronisation de timezone.

```
ibrahimy@mysql:~/.ssh$ timedatectl status
               Local time: mer. 2021-12-22 07:35:23 +01
           Universal time: mer. 2021-12-22 06:35:23 UTC
                 RTC time: mer. 2021-12-22 07:35:23
                Time zone: Africa/Casablanca (+01, +0100)
System clock synchronized: no
              NTP service: active
          RTC in local TZ: yes
```

Figure 3: synchronisation de timezone.

2.2 Uncomplicated Firewall (ufw)

- hosts: "*"

remote-user: root

become: yes
tasks:

install basic tools - name: install UFW - Uncomplicated Firewall

apt: name=ufw state=latest

- name: set logging

ufw: logging=on

- name: allow port 22

ufw: rule=allow port=22

- name: allow port 80

ufw: rule=allow port=80

- name: enable ufw

ufw: state=enabled policy=allow

- name: Set firewall default policy

ufw: state=enabled policy=reject

become: true

```
<10.10.2.56> ESTABLISH SSH CONNECTION FOR USER: ibrahimy
<10.10.2.56> SSH: EXEC ssh -C -o ControlMaster=auto -o ControlPersist=60s -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-with-mic,gssapi-keye
sed,publickey -o PasswordAuthentication=no -o User=ibrahimy -o ConnectTimeout=10 -o ControlPath=/root/.ansible/cp/b542c5a8f2 10.10.2.56 '/bin/sh -c '"'"'rm -f -r /h
himy/.ansible/tmp/ansible-tmp-1640248533.679884-18972-265475327299645/ > /dev/null 2>&1 && sleep 0'"'"''
<10.10.2.56> (0, b'', b'')
ok: [10.10.2.56] => {
    "changed": false,
    "commands": [
        "/usr/sbin/ufw logging on"
    ],
    "invocation": {
        "module_args": {
            "app": null,
            "comment": null,
            "default": null,
            "delete": false,
            "direction": null,
            "from_ip": "any",
            "from_port": null,
            "insert": null,
            "interface": null,
            "log": false,
            "logging": "on",
            "proto": null,
            "route": false,
            "rule": null,
            "state": null,
            "to_ip": "any",
            "to_port": null
        }
    },
    "msg": "Status: inactive"
}

TASK [allow port 22] ***********************************************************************************************************************************************
task path: /root/ansible/playbook/firewall.yml:15
```

Figure 4: installation et logging de ufw.

```
<10.10.2.56> SSH: EXEC ssh -C -o ControlMaster=auto -o ControlPersist=60s -o KbdInteractiveAuthentication=no -o PreferredAuthentications=gssapi-wit
sed,publickey -o PasswordAuthentication=no -o User=ibrahimy -o ConnectTimeout=10 -o ControlPath=/root/.ansible/cp/b542c5a8f2 10.10.2.56 '/bin/sh -c
himy/.ansible/tmp/ansible-tmp-1640248539.7957451-18981-105575630808093/ > /dev/null 2>&1 && sleep 0'"'"''
<10.10.2.56> (0, b'', b'')
changed: [10.10.2.56] => {
    "changed": true,
    "commands": [
        "/usr/sbin/ufw allow from any to any port 22"
    ],
    "invocation": {
        "module_args": {
            "app": null,
            "comment": null,
            "default": null,
            "delete": false,
            "direction": null,
            "from_ip": "any",
            "from_port": null,
            "insert": null,
            "interface": null,
            "log": false,
            "logging": null,
            "port": "22",
            "proto": null,
            "route": false,
            "rule": "allow",
            "state": null,
            "to_ip": "any",
            "to_port": "22"
        }
    },
    "msg": "Status: inactive"
}
```

Figure 5: enable de port 22.

```
<10.10.2.56> ESTABLISH SSH CONNECTION FOR USER: ibrahimy
<10.10.2.56> SSH: EXEC ssh -C -o ControlMaster=auto -o ControlPersist=60s -o KbdInteractiveAuthentication=no -o Prefe
sed,publickey -o PasswordAuthentication=no -o User=ibrahimy -o ConnectTimeout=10 -o ControlPath=/root/.ansible/cp/b54
himy/.ansible/tmp/ansible-tmp-1640248546.180519-19011-174629272570695/ > /dev/null 2>&1 && sleep 0'"'"''
<10.10.2.56> (0, b'', b'')
changed: [10.10.2.56] => {
    "changed": true,
    "commands": [
        "/usr/sbin/ufw allow from any to any port 80"
    ],
    "invocation": {
        "module_args": {
            "app": null,
            "comment": null,
            "default": null,
            "delete": false,
            "direction": null,
            "from_ip": "any",
            "from_port": null,
            "insert": null,
            "interface": null,
            "log": false,
            "logging": null,
            "port": "80",
            "proto": null,
            "route": false,
            "rule": "allow",
            "state": null,
            "to_ip": "any",
            "to_port": "80"
        }
    },
    "msg": "Status: inactive"
}
```

Figure 6: enable de port 80.

```
rredAuthentications=gssapi-with-mic,gssapi-keyex,hostbased,publickey -o PasswordAuthentication=no -o User=ibrahimy -o
 ConnectTimeout=10 -o ControlPath=/root/.ansible/cp/b542c5a8f2 10.10.2.56 '/bin/sh -c '"'"'rm -f -r /home/ibrahimy/.a
nsible/tmp/ansible-tmp-1640253257.5759757-30721-130145394853738/ > /dev/null 2>&1 && sleep 0'"'"''
<10.10.2.56> (0, b'', b'')
changed: [10.10.2.56] => {
    "changed": true,
    "commands": [
        "/usr/sbin/ufw -f enable",
        "/usr/sbin/ufw default reject"
    ],
    "invocation": {
        "module_args": {
            "app": null,
            "comment": null,
            "default": "reject",
            "delete": false,
            "direction": null,
            "from_ip": "any",
            "from_port": null,
            "insert": null,
            "interface": null,
            "log": false,
            "logging": null,
            "policy": "reject",
            "proto": null,
            "route": false,
            "rule": null,
            "state": "enabled",
            "to_ip": "any",
            "to_port": null
        }
    },
    "msg": "Status: active\nLogging: on (low)\nDefault: reject (incoming), allow (outgoing), disabled (routed)\nNew p
rofiles: skip\n\nTo                         Action      From\n--                         ------      ----\n22
                ALLOW IN    Anywhere                   \n80                         ALLOW IN    Anywhere
    \n22 (v6)                   ALLOW IN    Anywhere (v6)              \n80 (v6)                    ALLOW IN    Anyw
here (v6)"
}
META: ran handlers
META: ran handlers

PLAY RECAP *********************************************************************************************************
10.10.2.56                 : ok=7    changed=1    unreachable=0    failed=0
```

Figure 7: recap de ufw.

2.3 Install mysql server

- name: Install mysql server initialize

hosts: dbserver

gather-facts: false

become: true

vars:

mysql-root-password: '***'

ansible-python-interpreter: /usr/bin/python3

tasks:

- name: Ensure required packages are installed

apt:

name:

- mysql-server

state: latest

- name: Install Required pip modules

pip:

name:

- PyMySQL

state: present

executable: pip3

- name: Ensure mysql service is running

systemd:

name: mysqld

state: restarted

enabled: yes

- name: Add .my.cnf to user home

template:

src: /root/ibrahimy/my.conf
dest: /tmp/dump.sql