DevOps Sesión 12 (2022-03-21)

Documentación relacionada

- ./4-Topic 704 Configuration Management
- ./Material Curso Ansible/DO407-AUTOMATION WITH ANSIBLE I.pdf
- ./Material Curso Ansible/Introduccion Ansible.txt
- ./Material Curso Ansible/Curso Ansible 2020.pdf

ansible.cfg

- ./4-Topic 704 Configuration Management
- ./Material Curso Ansible/Curso Ansible 2020.pdf pag 54
- ./Laboratorios Ansible-playbook y Ad-doc.txt

- 4 secciones básicas
  - defaults
    - inventory
    - sudo_user
    - forks
    - timeout
    - log_path
    - nocows
  - privilege_escalation
    - become
    - become_method
    - become_user
  - ssh_connection
    - ssh_args
    - control_path
    - scp_if_ssh
  - colors

inventario

- mantener ficheros separados (para evitar errores) por entornos (buena práctica
- usar **-i** para indicar el inventario
- palabra reservada **all**

ayuda

- ansible-doc -l
- ansible-doc copy
- ansible-doc -s copy

cowsay enable

```
yum install cowsay -y
sudo vi /etc/ansible/ansible.cfg
# 218: nocows = 0
# 224: cow_selection = random - otros animales
```

ansible-playbook

- --step

modules

- ./4-Topic 704 Configuration Management
- ./Material Curso Ansible/Curso Ansible 2020.pdf pag 141

copy

- https://docs.ansible.com/ansible/2.9/modules/copy_module.html
- playbooks_resueltos/modulo_file.yml

```
---
- name: Ejemplos de modulos de ficheros y openssl
  hosts: clientes
  remote_user: root
  tasks:
    - name: Crear un firchero con contenido especificado
      copy: content="Esto es un ejemplos desde master"
dest="/tmp/ejemplo-master.txt"  backup=yes
    - name: Propiedades Fichero
      file: path="/tmp/ejemplo-master.txt" backup=yes mode="777"
owner="vagrant"
    - name: copia archivo /etc/hostname a remoto
      copy:
        src: /etc/hostname
        dest: /tmp
        owner: root
        group: root
        mode: '0644'
```

```
        backup: yes
...
```

file

- mcedit (paquete mc)
- crea directorio **/var/log/journal** para persistir los logs del journal entre arranques

modulo_file_directorio.yml

```
---
- name: Ejemplos de modulos de ficheros y openssl
  hosts: clientes
  remote_user: root
  tasks:
    - name: Creacion de un directorio
      file:
        path: "/var/log/journal"
        state: directory
        owner: root
        group: systemd-journal
        mode: 2755
      notify: reiniciar_journald
  handlers:
    - name: reiniciar_journald
      service: name=systemd-journald state=restarted
...
```

- handlers: tareas que responden a una notificación enviada por otras tareas
  - **notify** le indica al **handler** que se tiene que ejecutar
  - si varias tareas llaman al mismo handler, solo se ejecuta una vez, después de la última tarea que lo llame.
  - puede haber 2 handlers que se llamen igual, con un solo **notify** se ejecutaran los dos

delete

modulo_file_delete.yml

```
---
- name: Ejemplos de modulos de ficheros y openssl
  hosts: clientes
  remote_user: root
  tasks:
    - name: Crear un firchero con contenido especificado
      copy: content="Estos2 es un ejemplos2 desde master" dest="/tmp/ejemplo-
master.txt"  backup=yes
    - name: Propiedades Fichero
      file: path="/tmp/ejemplo-master.txt" state=absent backup=yes
...
```

locale

```
ansible all -a "timedatectl set-timezone Europe/Andorra"
ansible all -a "localectl"
ansible all -a "localectl set-locale LANG=es_ES.utf8"
ansible all -a "localectl set-keymap es"
ansible all -a "localectl"

ansible all -a "timedatectl"

ansible clientes -a "yum install httpd -y"
```

fetch

- recoge/descarga ficheros de los nodos, recreando la ruta de la ubicación (dentro de un directorio de máquina)

modulo_lineinfile.yml

```
---
- name: Ejemplo de modulo fetch
  hosts: clientes
  remote_user: root
  tasks:
    - name: Utilizando fetch para copia de seguridad
      fetch:
        src=/etc/hostname
        dest=/tmp/backup
    - name: Utilizando fetch para copia de seguridad con flat solo copia el
fichero, el destino tiene que ser un fichero
      #fetch: src=/etc/passwd  dest=/tmp/backup/passwd  flat=yes
      fetch: src=/etc/passwd  dest=/tmp/backup/
...
```

- flat: no recrea la ruta de la ubicación del fichero y lo deja directamente en el directorio que le hemos indicado

lineinfile

se utiliza para la configuración de ficheros, podremos asegurarnos de que una línea en particular esté en un archivo, o reemplace una línea existente usando una expresión regular, antes o después de la expresión, que este presente o que no este presente.

modulo_lineinfile.yml

```
---
- name: Ejemplo de modulo fetch
  hosts: clientes
  remote_user: root
  tasks:
    - name: Utilizando modulo lineinfile para modificar la configuracion de
selinux
```

```
      lineinfile: path=/etc/sysconfig/selinux regexp="^SELINUX="
line="SELINUX=disabled"
    - name: Eliminar una linea de un fichero, en este caso del arvhivo sudoers
la linea de  %wheel
      lineinfile: dest=/etc/sudoers state=absent regexp="^%wheel"
    - name: Añadir una linea de configuracion al archivo de apache httpd.conf
      lineinfile:
        path: /etc/httpd/conf/httpd.conf
        regexp: '^Listen '
        insertafter: '^#Listen '
        line: 'Listen 8080'
    - name: Añadir una linea despues de la expresinon buscada en un archivo
      lineinfile:
        path: /etc/services
        regexp: '^# port for http'
        insertbefore: '^www.*80/tcp'
        line: '# port for http by default'

    - name:  touch a file, using symbolic modes to set the permissions
(equivalent to 0644)
      file:
        path: /tmp/testfile
        state: touch
        mode: "u=rw,g=r,o=r"

    - name: Add a line to a file if it does not exist, without passing regexp
      lineinfile:
        path: /tmp/testfile
        line: '192.168.1.99 foo.lab.net foo'
...
```

install docker

; playbook_centos_install_docker.yaml

```
---
- name: Install docker Centos
  gather_facts: No
  hosts: clientes
  user: root

  tasks:
    - name: Install yum utils
      yum:
        name: yum-utils
        state: latest

    - name: Install device-mapper-persistent-data
      yum:
        name: device-mapper-persistent-data
        state: latest

    - name: Install lvm2
```

```
      yum:
        name: lvm2
        state: latest

    - name: Add Docker repo
      get_url:
        url: https://download.docker.com/linux/centos/docker-ce.repo
        dest: /etc/yum.repos.d/docer-ce.repo
      become: yes

    - name: Enable Docker Edge repo
      ini_file:
        dest: /etc/yum.repos.d/docer-ce.repo
        section: 'docker-ce-edge'
        option: enabled
        value: 0
      become: yes

    - name: Enable Docker Test repo
      ini_file:
        dest: /etc/yum.repos.d/docer-ce.repo
        section: 'docker-ce-test'
        option: enabled
        value: 0
      become: yes

    - name: Install Docker
      package:
        name: docker-ce
        state: latest
      become: yes

    - name: Install Docker Compose
      package:
        name: docker-compose
        state: latest
      become: yes


    - name: Start Docker service
      service:
        name: docker
        state: started
        enabled: yes
      become: yes

    - name: Add user vagrant to docker group
      user:
        name: vagrant
        groups: docker
        append: yes
      become: yes

    - name: Utilizando modulo lineinfile para modificar la configuracion de
selinux
      lineinfile: path=/etc/sysconfig/selinux regexp="^SELINUX="
```

```
line="SELINUX=disabled"

    - name: Stop and disabled firewalld
      service:
        name: firewalld
        state: stopped
        enabled: no
...
```

when_facts

- ./4-Topic 704 Configuration Management
- ./Material Curso Ansible/Curso Ansible 2020.pdf pag 68
- ./Specific Distribution ansible facts.txt
- https://techviewleo.com/list-of-ansible-os-family-distributions-facts/

modulo_when_facts.yaml

```
---
- hosts: clientes
  user: root

  tasks:

  - name: restart apache en debian
    service:
      name: apache2
      state: started
      enabled: yes
    when: ansible_distribution == 'Debian' or ansible_distribution == 'Ubuntu'

  - name: restart httpd en centos
    service:
      name: httpd
      state: started
      enabled: yes
    when: ansible_distribution == 'CentOS' or ansible_distribution == 'Red Hat
Enterprise Linux'
...
```

```
---
- hosts: clientes
  user: root

  tasks:
  - name: Install apache para debian
    apt:
      name: {{ item }}
```

```
      state: latest
    with_items:
     - apache2
     - php
    when: ansible_distribution == 'Debian' or ansible_distribution == 'Ubuntu'

  - name: Install httpd para centos
    yum:
      name: {{ item }}
      state: latest
    with_items:
     - httpd
     - httpd-devel
     - php*
     - mariadb*
    when: ansible_distribution == 'CentOS' or ansible_distribution == 'Red Hat
Enterprise Linux'

  - name: restart apache en debian
    service:
      name: apache2
      state: started
      enabled: yes
    when: ansible_distribution == 'Debian' or ansible_distribution == 'Ubuntu'

  - name: restart httpd en centos
    service:
      name: httpd
      state: started
      enabled: yes
    when: ansible_distribution == 'CentOS' or ansible_distribution == 'Red Hat
Enterprise Linux'
...
```

modulo_comandos_script.yml

loop

- https://docs.ansible.com/ansible/latest/user_guide/playbooks_loops.html
- **with_items** se eliminará este formato, usar **loop**

```
- name: paquetes
  yum:
    name: "{{  item  }}"
    state: present
  loop:
     - httpd
     - php*
```

expect

- ./4-Topic 704 Configuration Management
- ./module expect ansible cambiar password a usuarios linux.txt
- https://docs.ansible.com/ansible/latest/modules/expect_module.html

- librerias/dependencias necesarias:

```
ansible cliente12 -a "yum install pexpect -y"
ansible cliente12 -a "yum -y install python-pip -y"
ansible cliente12  -a "pip install --upgrade pexpect"
```

modulo_expect.yml

```
---
- name: Ejecuta un comando y responde a las solicitudes
  hosts: cliente12
  remote_user: root
  tasks:
   # - name: Para ejecutar este modulo tenemos que instalar el paquete pexpect
    #  yum: name=pexpect state=latest

     - name: Case insensitve password string match
       expect:
         command: passwd vagrant
         responses:
           (?i)password: "vagrant"
...
```

- The question, or key, under responses is a python regex match. Case insensitive searches are indicated with a prefix of ?i.

docker

- ./4-Topic 704 Configuration Management
- ./Material Curso Ansible/Curso Ansible 2020.pdf pag 193
- https://docs.ansible.com/ansible/2.9/modules/docker_container_module.html
- Laboratorio ansible docker-network.txt linea 71

; /etc/ansible/hosts

```
...
[docker]
192.168.33.11  ansible_python_interpreter=/usr/bin/python3
...
```

```
ansible docker -a "yum -y install python2-pip -y"
ansible docker -a "pip install docker-py"

ansible docker  -a "docker run -dtiP --name ansible-web nbrown/nginxhello"
```

docker-network.yml

```
---
- name: Crear red y conectar el contedor ansible-web
  hosts: docker
  remote_user: root
  tasks:
  - name: crear red llama da ansible
    docker_network:
      name: ansible
      state: present
      connected:
        - ansible-web
...
```

```
ansible docker -a "docker network list"
ansible docker -m shell -a "docker network inspect ansible | grep -w Name"
```

volumenes

playbook_modulo_cloud_docker2.yml

```
---
- name: Playbook docker con volumenes,mapeos de puertos y mensajes con
pushbullet
  hosts: docker
  remote_user: root
  tasks:
    #- pip: name=pushbullet.py

    - name: Creacion de un directorio /web en los servidores de docker para
persistir un volumen
      file:
        path: "/web"
        state: directory
        owner: root
        group: root
        mode: 0755
    - name: crear un fichero con contenido específico
      copy: content="Web en docker-Ansible" dest="/web/index.html" backup=yes


# Reinicio de servicios de docker
  #  - name: Restart docker
   #   action: service name=docker state=restarted

# Example action to start service docker, if not running
    - service:
```

```
        name: docker
        state: started

    - name: pull image
      docker_image:
        name: agarciaf/intranet
       # state: present

    - name: create docker container
      docker_container:
        name: intranet2
        image: agarciaf/intranet
        ports:
          - "8081:80"
        volumes:
          - "/web:/var/www/html"
        state: started
...
```

kubernetes

- ./4-Topic 704 Configuration Management/Deploy kubernetes con ansible
- https://docs.ansible.com/ansible/2.9/modules/k8s_module.html

roles

- fraccionar un playbook en diferentes ficheros para facilitar su implementeación

pushbullet/pushover

- notificaciones a los teléfonos a través de app

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Last update: **21/03/2022 21:47**