

Lab1 Ansible

Vérification de l'installation de Ansible dans VM1

```
root@rania-virtual-machine: /home/rania
root@rania-virtual-machine:/home/rania# ansible --version
ansible [core 2.15.9]
  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
  ansible collection location = /root/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/bin/ansible
  python version = 3.10.12 (main, Jun 11 2023, 05:26:28) [GCC 11.4.0] (/usr/bin/python3)
  jinja version = 3.0.3
  libyaml = True
```

Vérification des adresses IP pour les machines VM1 et VM2

```
root@rania-virtual-machine: /home/rania# ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 192.168.80.155  netmask 255.255.255.0  broadcast 192.168.80.255
    inet6 fe80::8187:5bc2:c753:2b3b  prefixlen 64  scopeid 0x20<link>
    ether 00:0c:29:da:1a:05  txqueuelen 1000  (Ethernet)
    RX packets 166919  bytes 247478178 (247.4 MB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 36133  bytes 2216656 (2.2 MB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

ens37: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 192.168.1.101  netmask 255.255.255.0  broadcast 192.168.1.255
    inet6 fe80::a15f:d498:5ae8:7123  prefixlen 64  scopeid 0x20<link>
    ether 00:0c:29:da:1a:0f  txqueuelen 1000  (Ethernet)
    RX packets 260  bytes 33364 (33.3 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 211  bytes 25749 (25.7 KB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0
```

```
ens37: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 192.168.1.100  netmask 255.255.255.0  broadcast 192.168.1.255
    inet6 fe80::a4d2:a308:1cf3:a4f8  prefixlen 64  scopeid 0x20<link>
    ether 00:0c:29:01:06:b7  txqueuelen 1000  (Ethernet)
    RX packets 369  bytes 47271 (47.2 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 205  bytes 23695 (23.6 KB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0
```

Installation de SSH sur VM1 (Machine Ansible)

```
root@rania-virtual-machine: /home/rania
root@rania-virtual-machine:/home/rania# sudo apt install ssh
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ssh is already the newest version (1:8.9p1-3ubuntu0.6).
0 upgraded, 0 newly installed, 0 to remove and 188 not upgraded.
```

Installation de SSH sur VM2 (Machine cible)

```
root@rania-virtual-machine:/home/rania# sudo apt install openssh-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
openssh-server is already the newest version (1:8.9p1-3ubuntu0.6).
The following packages were automatically installed and are no longer required:
  ansible-core python-babel-localedata python3-babel python3-jinja2 python3-jmespath python3-kerberos
  python3-ntlm-auth python3-packaging python3-requests-kerberos python3-requests-ntlm python3-resolvelib python3-winrm
  python3-xlrd python3-xlsxwriter python3-yaml python3-zipp python3-zstd sshpass
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 61 not upgraded.
```

Configuration de SSH entre VM1 et VM2

```
root@rania-virtual-machine:/home/rania# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Created directory '/root/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:4QRS2ISIS10z0GHld+x0eayjKK0wKF0yZXR3LDQuWYQ root@rania-virtual-machine
The key's randomart image is:
+---[RSA 3072]-----+
| ..=%X. |
| .. .EB=+ . |
| .O..+.+O=. O |
| .....O.=..O O |
| . +      S  + O |
| *.        O O |
| +. O .    + |
| .. O. .. . |
|    .O. . |
+---[SHA256]-----+
root@rania-virtual-machine:/home/rania# ssh-copy-id rania@192.168.1.100
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.pub"
```

Sur VM1, on a généré une paire de clés SSH

Puis on a copié la clé publique de VM1 sur VM2 pour permettre une connexion sans mot de passe

Test de la connectivité SSH

```
root@rania-virtual-machine:/home/rania# ssh rania@192.168.1.100
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.5.0-17-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

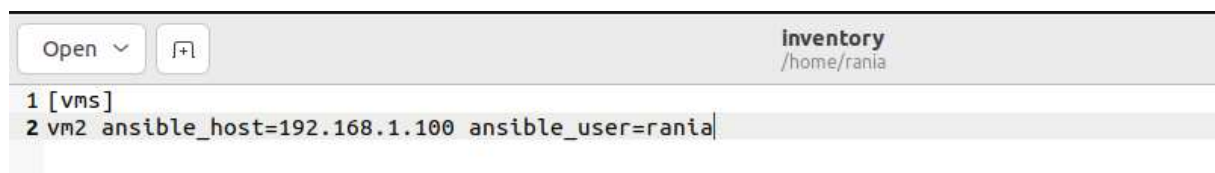
Expanded Security Maintenance for Applications is not enabled.

51 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

rania@rania-virtual-machine:~$
```

Configuration de l'inventaire Ansible



```
1 [vms]
2 vm2 ansible_host=192.168.1.100 ansible_user=rania
```

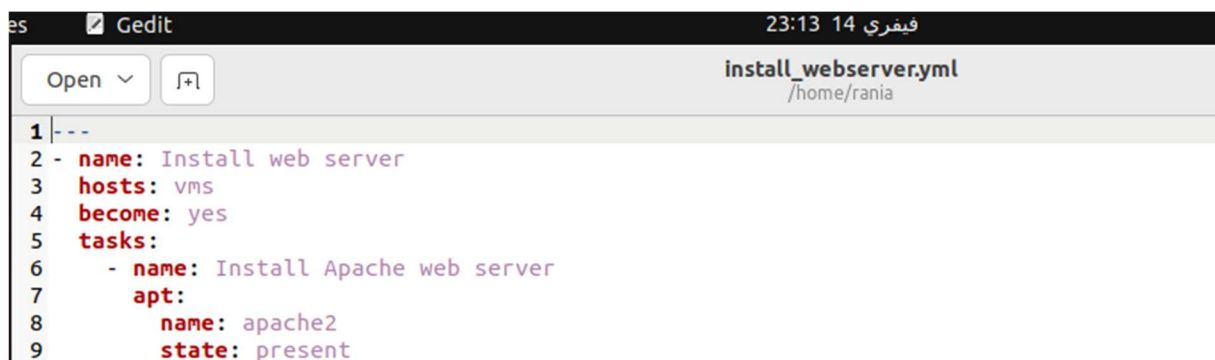
Création d'un fichier d'inventaire nommé Inventory contenant les informations sur la machine cible VM2

Test de la connectivité avec Ansible



```
root@rania-virtual-machine:/home/rania# ansible -i inventory -m ping vms
vm2 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
```

Exécution d'un playbook pour installer un serveur web



```
1 ---
2 - name: Install web server
3   hosts: vms
4   become: yes
5   tasks:
6     - name: Install Apache web server
7       apt:
8         name: apache2
9         state: present
```


Création du playbook Ansible pour installer un serveur web sur la machine cible VM2.

```
root@rania-virtual-machine:/home/rania# ansible-playbook -i inventory install_webserver.yml

PLAY [Install web server] *****
TASK [Gathering Facts] *****
ok: [vm2]
TASK [Install Apache web server] *****
changed: [vm2]
PLAY RECAP *****
vm2                : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Exécution du playbook

```
Last login: Wed Feb 14 22:55:34 2024 from 192.168.1.101
rania@rania-virtual-machine:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2024-02-14 22:55:49 CET; 42min ago
     Docs: https://httpd.apache.org/docs/2.4/
  Main PID: 5135 (apache2)
    Tasks: 55 (limit: 4555)
   Memory: 4.9M
      CPU: 447ms
  CGroup: /system.slice/apache2.service
          └─5135 /usr/sbin/apache2 -k start
             └─5136 /usr/sbin/apache2 -k start
                └─5138 /usr/sbin/apache2 -k start
```

Vérification l'installation d'Apache HTTP Server sur VM2