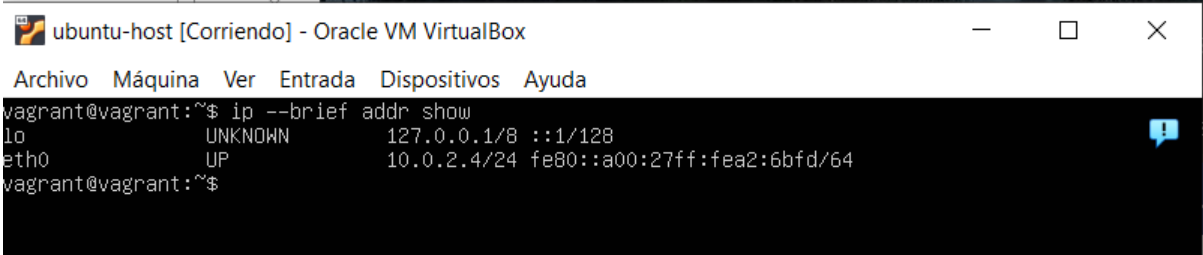


Ansible

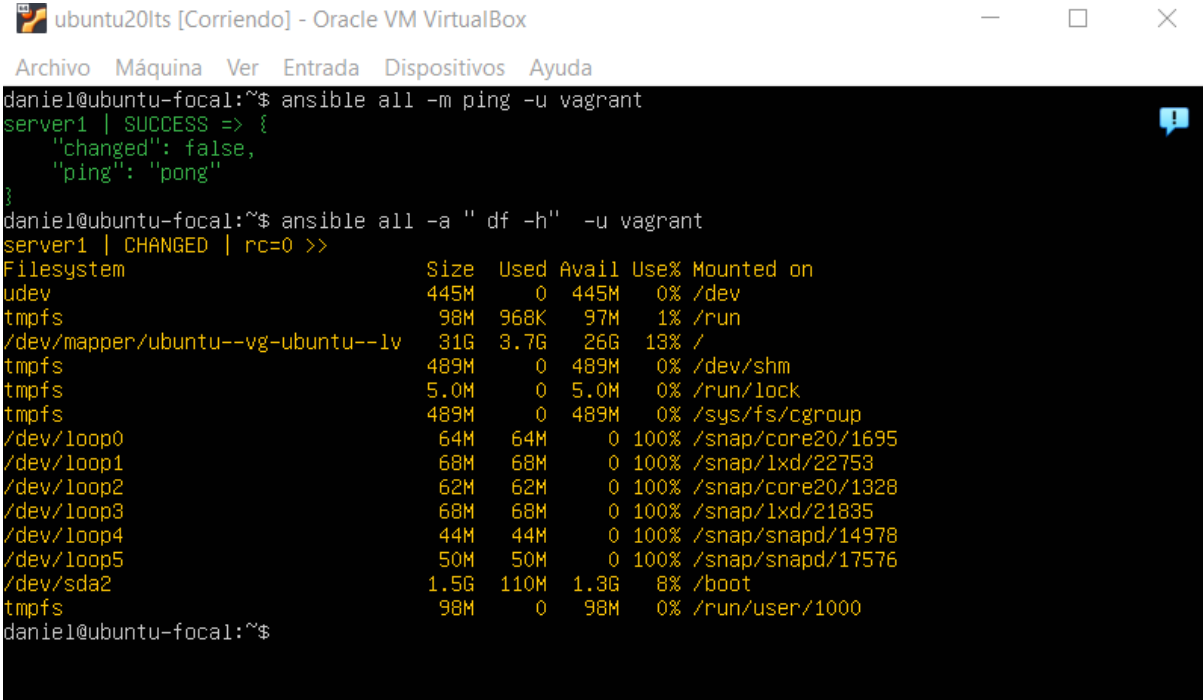
host ip address



A terminal window titled 'ubuntu-host [Corriendo] - Oracle VM VirtualBox'. The terminal shows the command 'ip --brief addr show' being executed. The output displays the loopback interface 'lo' with IP '127.0.0.1/8' and the ethernet interface 'eth0' with IP '10.0.2.4/24' and MAC address 'fe80::a00:27ff:fea2:6bfd/64'.

```
ubuntu-host [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
vagrant@vagrant:~$ ip --brief addr show
lo          UNKNOWN      127.0.0.1/8  ::1/128
eth0        UP           10.0.2.4/24  fe80::a00:27ff:fea2:6bfd/64
vagrant@vagrant:~$
```

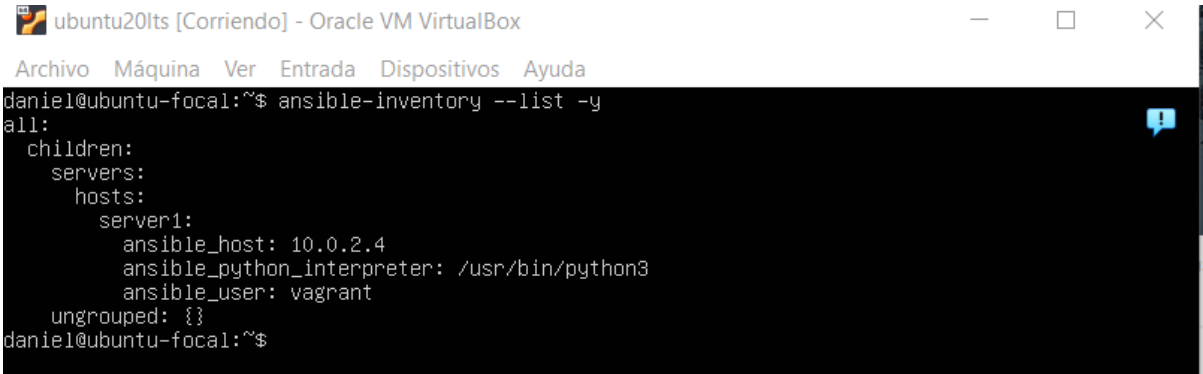
Connection from control node to host



A terminal window titled 'ubuntu20lts [Corriendo] - Oracle VM VirtualBox'. The terminal shows two Ansible commands being executed. The first command is 'ansible all -m ping -u vagrant', which returns a success message. The second command is 'ansible all -a "df -h" -u vagrant', which returns a table of disk usage for all hosts.

```
ubuntu20lts [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
daniel@ubuntu-focal:~$ ansible all -m ping -u vagrant
server1 | SUCCESS => {
  "changed": false,
  "ping": "pong"
}
daniel@ubuntu-focal:~$ ansible all -a "df -h" -u vagrant
server1 | CHANGED | rc=0 >>
Filesystem                                Size  Used Avail Use% Mounted on
udev                                     445M   0  445M   0% /dev
tmpfs                                    98M   96K   97M   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv       31G   3.7G   26G  13% /
tmpfs                                    489M   0   489M   0% /dev/shm
tmpfs                                    5.0M   0   5.0M   0% /run/lock
tmpfs                                    489M   0   489M   0% /sys/fs/cgroup
/dev/loop0                              64M   64M   0 100% /snap/core20/1695
/dev/loop1                              68M   68M   0 100% /snap/lxd/22753
/dev/loop2                              62M   62M   0 100% /snap/core20/1328
/dev/loop3                              68M   68M   0 100% /snap/lxd/21835
/dev/loop4                              44M   44M   0 100% /snap/snapd/14978
/dev/loop5                              50M   50M   0 100% /snap/snapd/17576
/dev/sda2                              1.5G  110M   1.3G   8% /boot
tmpfs                                    98M   0   98M   0% /run/user/1000
daniel@ubuntu-focal:~$
```

ansible inventory file



A terminal window titled 'ubuntu20lts [Corriendo] - Oracle VM VirtualBox'. The terminal shows the command 'ansible-inventory --list -y' being executed. The output displays the Ansible inventory file structure, showing a group named 'all' with a sub-group 'children' containing a group 'servers' with a host 'server1' and its configuration.

```
ubuntu20lts [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
daniel@ubuntu-focal:~$ ansible-inventory --list -y
all:
  children:
    servers:
      hosts:
        server1:
          ansible_host: 10.0.2.4
          ansible_python_interpreter: /usr/bin/python3
          ansible_user: vagrant
      ungrouped: {}
daniel@ubuntu-focal:~$
```

ansible playbook

```
daniel@ubuntu-focal:/etc/ansible$ cat playbook.yml
---
- hosts: servers
  become: true
  tasks:
    - name: Install packages
      apt: name={{item}} update_cache=yes state=latest
      loop: [ 'nginx', 'vim' ]
      tags: ['setup']

daniel@ubuntu-focal:/etc/ansible$ _
```

playbook execution

```
daniel@ubuntu-focal:/etc/ansible$ ansible-playbook -i hosts playbook.yml

PLAY [servers] *************************************************************************************************************************************

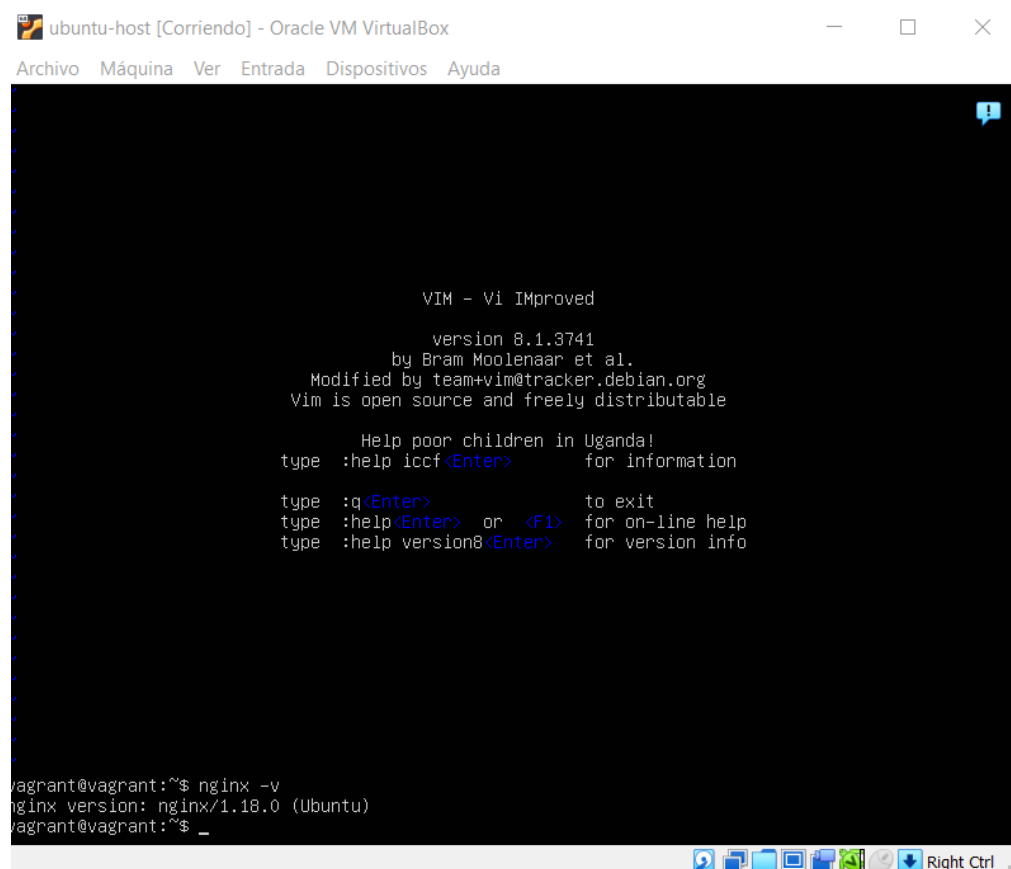
TASK [Gathering Facts] *************************************************************************************************************************************
ok: [server1]

TASK [Install packages] *************************************************************************************************************************************
changed: [server1] => (item=nginx)
changed: [server1] => (item=vim)

PLAY RECAP *************************************************************************************************************************************
server1                : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=
0    ignored=0

daniel@ubuntu-focal:/etc/ansible$ _
```

packages installed on host



The screenshot shows a terminal window titled "ubuntu-host [Corriendo] - Oracle VM VirtualBox". The terminal output shows the installation of nginx and vim on a host. The first command is "vagrant@vagrant:~\$ nginx -v", which outputs "nginx version: nginx/1.18.0 (Ubuntu)". The second command is "vagrant@vagrant:~\$ _", which outputs a blank line. The terminal also shows the output of the "vim" command, which displays the Vim help screen.

```
ubuntu-host [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda

VIM - Vi IMproved
version 8.1.3741
by Bram Moolenaar et al.
Modified by team+vim@tracker.debian.org
Vim is open source and freely distributable

Help poor children in Uganda!
type :help iccf<Enter>      for information

type :q<Enter>              to exit
type :help<Enter> or <F1>   for on-line help
type :help version8<Enter> for version info

vagrant@vagrant:~$ nginx -v
nginx version: nginx/1.18.0 (Ubuntu)
vagrant@vagrant:~$ _
```

ssh connection from control node to host

```
daniel@ubuntu-focal:~$ ssh vagrant@10.0.2.4
Welcome to Ubuntu 20.04.4 LTS (GNU/Linux 5.4.0-110-generic x86_64)

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

System information as of Thu 24 Nov 2022 10:01:21 PM UTC

System load:  0.66               Processes:            127
Usage of /:   12.2% of 30.63GB   Users logged in:     1
Memory usage: 19%               IPv4 address for eth0: 10.0.2.4
Swap usage:   0%

This system is built by the Bento project by Chef Software
More information can be found at https://github.com/chef/bento
Last login: Thu Nov 24 22:00:32 2022
vagrant@vagrant:~$ nginx -v
nginx version: nginx/1.18.0 (Ubuntu)
vagrant@vagrant:~$
```

PKI

Es una tecnología para autenticar usuarios y dispositivos en el mundo digital. Básicamente se tiene una o más aportes firman que una clave criptográfica pertenece a un usuario o dispositivo. Esta llave luego puede servir para identificar al usuario en redes digitales.

Depende de firmas digitales que utilizan criptografía de clave pública. Aquí, la clave secreta de cada entidad(usuario o dispositivo) solo la conoce esa entidad y la usa para firmar, esta es la llave privada.

SSH

Secure Shell es un protocolo de que facilita la comunicación segura entre dos sistemas usando una arquitectura cliente/servidor y que permite a los usuarios conectarse a un host remotamente. SSH encripta la sesión de conexión, por lo que es imposible que alguien pueda obtener contraseñas no encriptadas. Da un mecanismo para autenticar un usuario remoto, llevar entradas desde el cliente al host y devolverlas al cliente.