

TP5 Vagrant

Q1) Installation de Vagrant

Téléchargement et installation

- `sudo apt-get install vagrant -y`

Q2)

Rechercher une distrib prise en charge par Vagrant

- <https://app.vagrantup.com/boxes/search>

Création du VagrantFile

- `mkdir vm-ubuntu-18_04`
- `cd vm-ubuntu-18_04`
- `vagrant init "ubuntu/bionic64"`

```
marc@magnorod:~/vm-ubuntu-18_04$ vagrant box list
ubuntu/bionic64 (virtualbox, 20201125.0.0)
```

Création et configuration de la VM

- `vagrant up`

Connexion SSH

- `vagrant ssh`

Récolte d'info

adresse ip

- `ip addr show`

```
vagrant@ubuntu-bionic:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 02:bd:38:fa:b3:5d brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 86217sec preferred_lft 86217sec
    inet6 fe80::bd:38ff:fefa:b35d/64 scope link
        valid_lft forever preferred_lft forever
```

disque dur (système de fichiers)

- `df -h`

```
vagrant@ubuntu-bionic:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            481M   0    481M   0% /dev
tmpfs           99M   596K   98M    1% /run
/dev/sda1       9.7G  1.1G   8.6G   11% /
tmpfs           493M   0    493M   0% /dev/shm
tmpfs           5.0M   0    5.0M   0% /run/lock
tmpfs           493M   0    493M   0% /sys/fs/cgroup
vagrant         49G   44G   5.0G   90% /vagrant
tmpfs           99M   0     99M   0% /run/user/1000
```

mémoire vive

- free -h

```
vagrant@ubuntu-bionic:~$ free -h
              total        used        free      shared  buff/cache   available
Mem:           984M        79M        653M        596K        252M        767M
Swap:           0B           0B           0B
```

cpu

- lscpu

```
vagrant@ubuntu-bionic:~$ lscpu
Architecture:        x86_64
CPU op-mode(s):      32-bit, 64-bit
Byte Order:          Little Endian
CPU(s):              2
On-line CPU(s) list: 0,1
Thread(s) per core:  1
Core(s) per socket:  2
Socket(s):           1
NUMA node(s):        1
Vendor ID:            GenuineIntel
CPU family:           6
Model:               142
Model name:           Intel(R) Core(TM) i5-8250U CPU @ 1.60GHz
Stepping:            10
CPU MHz:              1799.998
BogoMIPS:             3599.99
Hypervisor vendor:    KVM
Virtualization type:  full
L1d cache:           32K
L1i cache:           32K
L2 cache:            256K
L3 cache:            6144K
NUMA node0 CPU(s):   0,1
Flags:                fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
                    clflush mmx fxsr sse sse2 ht syscall nx rdtscp lm constant_tsc rep_good nopl xtopology nons
                    top_tsc cpuid tsc_known_freq pni pclmulqdq ssse3 cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt
                    aes xsave avx rdrand hypervisor lahf_lm abm 3dnowprefetch invpcid_single pti fsgsbase avx2
                    invpcid rdseed clflushopt md_clear flush_l1d
```

fichier partagé

- ls /vagrant

```
marc@magnorod:~/vm-ubuntu-18_04$ ls -l
total 48
-rw-rw-r-- 1 marc marc  0 déc.  1 22:37 fichier-test
-rw-rw-r-- 1 marc marc 44603 déc.  1 22:24 ubuntu-bionic-18.04-cloudimg-console.log
-rw-rw-r-- 1 marc marc  3022 déc.  1 22:15 Vagrantfile
marc@magnorod:~/vm-ubuntu-18_04$

vagrant@ubuntu-bionic:~$ ls -l /vagrant
total 48
-rw-rw-r-- 1 vagrant vagrant 3022 Dec  1 21:15 Vagrantfile
-rw-rw-r-- 1 vagrant vagrant  0 Dec  1 21:37 fichier-test
-rw-rw-r-- 1 vagrant vagrant 44603 Dec  1 21:24 ubuntu-bionic-18.04-cloudimg-console.log
vagrant@ubuntu-bionic:~$
```

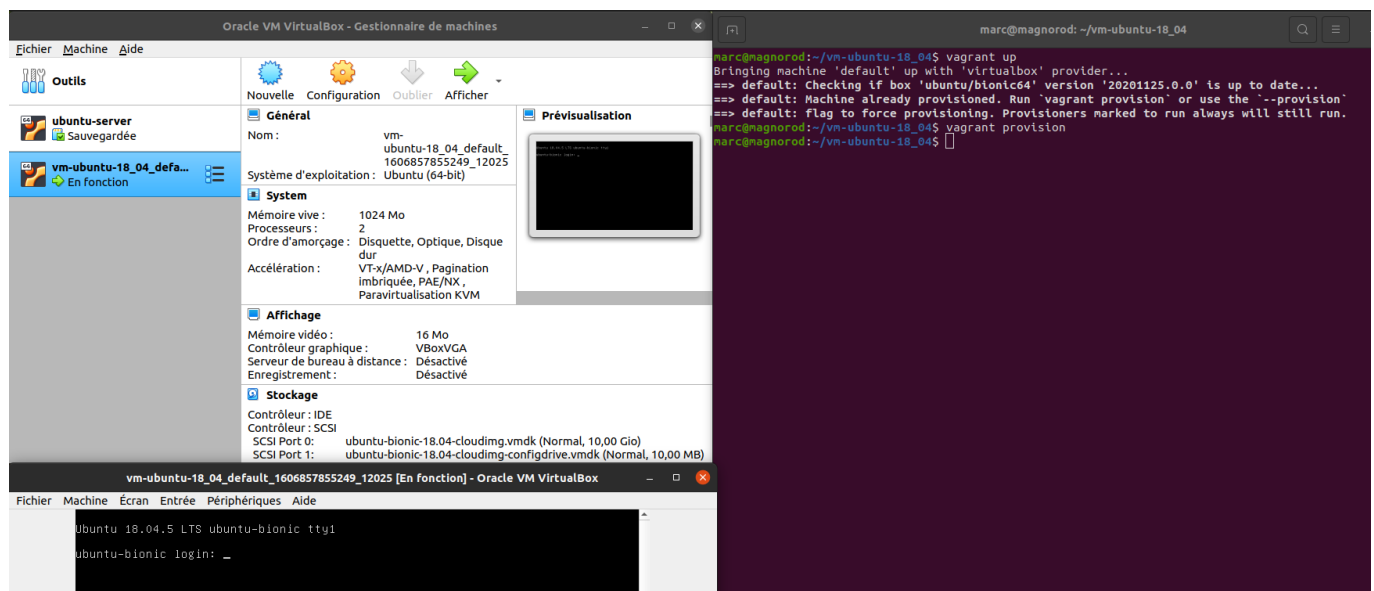
Q3)

Pour utiliser le mode GUI virtualbox doit être installé !

modifier le Vagrantfile

```
# Provider-specific configuration so you can fine-tune various
# backing providers for Vagrant. These expose provider-specific options.
# Example for VirtualBox:
#
# config.vm.provider "virtualbox" do |vb|
#   # Display the VirtualBox GUI when booting the machine
#   vb.gui = true
#
#   # Customize the amount of memory on the VM:
#   vb.memory = "2048"
end
```

- vagrant up
- vagrant provision



Q4)

3 modes réseau

mode forward de port:

forward du port 8080 de l'hôte sur le port 80 de l'invité

modif du Vagrantfile

- config.vm.network "forwarded_port", guest: 80, host: 8080

puis

- vagrant up

le forward de port s'effectue bien

```

marc@magnorod:~/vm-ubuntu-18_04$ vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Checking if box 'ubuntu/bionic64' version '20201125.0.0' is up to date...
==> default: Clearing any previously set forwarded ports...
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
    default: Adapter 1: nat
==> default: Forwarding ports...
    default: 80 (guest) => 8080 (host) (adapter 1)
    default: 22 (guest) => 2222 (host) (adapter 1)

vagrant@ubuntu-bionic:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 02:bd:38:fa:b3:5d brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 86363sec preferred_lft 86363sec
    inet6 fe80::bd:38ff:fe80:b35d/64 scope link
        valid_lft forever preferred_lft forever

```

ping source	ping destination	resultat
hote	invité	ko
invite	hote	ok

mode prive :

modif du Vagrantfile

- config.vm.network "private_network", ip: "192.168.33.10" puis
- vagrant up

```

vagrant@ubuntu-bionic:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 02:bd:38:fa:b3:5d brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 86387sec preferred_lft 86387sec
    inet6 fe80::bd:38ff:fe80:b35d/64 scope link
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:27:5f:4f brd ff:ff:ff:ff:ff:ff
    inet 192.168.33.10/24 brd 192.168.33.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe27:5f4f/64 scope link
        valid_lft forever preferred_lft forever

```

coté hôte on remarque qu'une interface est créée

ping source	ping destination	resultat
hote	invité	ok

ping source	ping destination	resultat
invite	hote	ok

mode public :

modif du Vagrantfile

- config.vm.network "public_network"

puis

- vagrant up

Utilisation d'un bridge sur l'interface de la carte wi-fi wlp2s0

```
==> default: Available bridged network interfaces:
1) wlp2s0
2) docker0
==> default: When choosing an interface, it is usually the one that is
==> default: being used to connect to the internet.
default: Which interface should the network bridge to? 1
==> default: Preparing network interfaces based on configuration...
default: Adapter 1: nat
default: Adapter 2: bridged
==> default: Forwarding ports...
default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Running 'pre-boot' VM customizations...
```

```
vagrant@ubuntu-bionic:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 02:bd:38:fa:b3:5d brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 86292sec preferred_lft 86292sec
    inet6 fe80::bd:38ff:fefa:b35d/64 scope link
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:27:5f:4f brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.33/24 brd 192.168.1.255 scope global dynamic enp0s8
        valid_lft 86296sec preferred_lft 86296sec
    inet6 2a02:8431:1352:ea00:b616:1058:5f67:2ca6/128 scope global dynamic noprefixroute
        valid_lft 86295sec preferred_lft 86295sec
    inet6 2a02:8431:1352:ea00:a00:27ff:fe27:5f4f/64 scope global dynamic mngtmpaddr noprefixroute
        valid_lft 604694sec preferred_lft 604694sec
    inet6 fe80::a00:27ff:fe27:5f4f/64 scope link
        valid_lft forever preferred_lft forever
```

ping source	ping destination	resultat
hote	invité	ok
invite	hote	ok

Q5)

utilisation du mode réseau forward de port dans le Vagrantfile

- config.vm.network "forwarded_port", guest: 80, host: 8080

sur l'invité:

- sudo apt install apache2 -y

test sur l'invité:

```
root@ubuntu-bionic:~# curl -I http://127.0.0.1
HTTP/1.1 200 OK
Date: Tue, 01 Dec 2020 22:45:53 GMT
Server: Apache/2.4.29 (Ubuntu)
Last-Modified: Tue, 01 Dec 2020 22:42:09 GMT
ETag: "2aa6-5b56ed63f0480"
Accept-Ranges: bytes
Content-Length: 10918
Vary: Accept-Encoding
Content-Type: text/html
```

test sur l'hôte:

```
marc@magnorod:~$ curl -I http://127.0.0.1:8080
HTTP/1.1 200 OK
Date: Tue, 01 Dec 2020 22:47:03 GMT
Server: Apache/2.4.29 (Ubuntu)
Last-Modified: Tue, 01 Dec 2020 22:42:09 GMT
ETag: "2aa6-5b56ed63f0480"
Accept-Ranges: bytes
Content-Length: 10918
Vary: Accept-Encoding
Content-Type: text/html
```