



**INSTITUTO SUPERIOR POLITÉCNICO DE TECNOLOGIAS E CIÊNCIAS
DEPARTAMENTO DE ENGENHARIAS E TECNOLOGIAS
CURSO DE ENGENHARIA INFORMÁTICA**

REDES DE COMPUTADORES 1

Memorando

LAB 2 Aplicações Web e HTTP

AUTOR: Stélvio Magno Artur Dias
Número Matrícula: 20220306
Turma: EIN5_M2

OUTUBRO, 2024

1. Qual é a função do ficheiro Vagrantfile?

A função do ficheiro Vagrantfile é para criar e executar ambientes virtuais com rede e armazenamento. Isso permite que o ambiente seja facilmente reproduzido, destruído e reconstruído com um único comando, tornando o processo mais eficiente e prático.

2. Supondo que pretende usar Ubuntu com Python instalado, quais são as configurações necessárias para usar o Vagrant?

Para usar o Ubuntu com Python instalado é necessário executar as seguintes configurações:

- Instalar o vagrant
- Instalar o Virtual box
- Iniciar um novo Vagrantfile (vagrant init)
- Configurar a box para "ubuntu/trusty64"
- Iniciar a maquina virtual com o comando (vagrant up)
- Acessar a maquina virtual com o comando (vagrant ssh)

3. Considera a configuração do ambiente cliente/servidor:

a. Porquê foi necessário a configuração do parâmetro "forwarded_port"?

O forwarded_port serve para redirecionar portas da máquina virtual para a máquina host, permitindo aceder aos recursos da maquina virtual a partir do computador host.

b. Qual é o comando Vagrant que permite executar várias maquinas?

Para executar várias máquinas, podemos usar o seguinte comando Vagrant: "vagrant up".

c. Supondo que esteja a executar duas máquinas ("webserver" e "cliente"), mas não acedeu a nenhuma delas. Quais são os passos para testar a conectividade a partir da máquina "cliente" para a máquina "webserver", a máquina "webserver" tem o ip 192.168.56.21.

Para testarmos a conectividade da máquina "webserver" a partir da máquina "cliente", devemos seguir os seguintes passos:

- Aceder a máquina “cliente” usando o comando `vagrant ssh cliente`.
- Usar o comando `ping` para testar a conectividade: ex “`ping 192.168.56.21`”

Cliente interagindo com o WebServer usando o telnet

```

client: virtual machine match the version of VirtualBox you have installed on
client: your host and reload your VM.
client:
client: Guest Additions Version: 4.3.40
client: VirtualBox Version: 7.0
==> client: Setting hostname...
==> client: Configuring and enabling network interfaces...
==> client: Mounting shared folders...
      client: /vagrant => C:/Users/stelv/OneDrive/Documents/ISPTEC/EINF5-M2/RC1/Projects
==> client: Machine already provisioned. Run `vagrant provision` or use the `--provision`
==> client: flag to force provisioning. Provisioners marked to run always will still run.

C:\Users\stelv\OneDrive\Documents\ISPTEC\EINF5-M2\RC1\Projects>telnet webserver 80
'telnet' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\stelv\OneDrive\Documents\ISPTEC\EINF5-M2\RC1\Projects>vagrant ssh client
Welcome to Ubuntu 14.04.6 LTS (GNU/Linux 3.13.0-170-generic x86_64)

 * Documentation:  https://help.ubuntu.com/

System information disabled due to load higher than 1.0

UA Infrastructure Extended Security Maintenance (ESM) is not enabled.

0 updates can be installed immediately.
0 of these updates are security updates.

Enable UA Infrastructure ESM to receive 64 additional security updates.
See https://ubuntu.com/advantage or run: sudo ua status

New release '16.04.7 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Thu Oct 24 21:45:50 2024 from 10.0.2.2
vagrant@client:~$ telnet webserver 80
Trying 192.168.56.21...
Connected to webserver.
Escape character is '^['.

```

Inicializar o provision

```
webserver: Get:36 http://archive.ubuntu.com trusty-backports/multiverse Tran
slation-en [1,215 B]
webserver: Get:37 http://archive.ubuntu.com trusty-backports/restricted Tran
slation-en [28 B]
webserver: Get:38 http://archive.ubuntu.com trusty-backports/universe Transl
ation-en [36.8 kB]
webserver: Hit http://archive.ubuntu.com trusty Release
webserver: Get:39 http://archive.ubuntu.com trusty/main Sources [1,064 kB]
webserver: Get:40 http://archive.ubuntu.com trusty/restricted Sources [5,433
B]
webserver: Get:41 http://archive.ubuntu.com trusty/universe Sources [6,399 k
B]
webserver: Get:42 http://archive.ubuntu.com trusty/multiverse Sources [174 k
B]
webserver: Hit http://archive.ubuntu.com trusty/main amd64 Packages
webserver: Hit http://archive.ubuntu.com trusty/restricted amd64 Packages
webserver: Hit http://archive.ubuntu.com trusty/universe amd64 Packages
webserver: Hit http://archive.ubuntu.com trusty/multiverse amd64 Packages
webserver: Hit http://archive.ubuntu.com trusty/main Translation-en
webserver: Hit http://archive.ubuntu.com trusty/multiverse Translation-en
webserver: Hit http://archive.ubuntu.com trusty/restricted Translation-en
webserver: Hit http://archive.ubuntu.com trusty/universe Translation-en
```

Ping com o WebServer

```
C:\Users\stelv>ping 192.168.56.21

Pinging 192.168.56.21 with 32 bytes of data:
Reply from 192.168.56.21: bytes=32 time<1ms TTL=64
Reply from 192.168.56.21: bytes=32 time<1ms TTL=64
Reply from 192.168.56.21: bytes=32 time<1ms TTL=64
Reply from 192.168.56.21: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.56.21:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\stelv>|
```

Download do Ubuntu

```
Vagrant failed to initialize at a very early stage:

There was an error loading a Vagrantfile. The file being loaded
and the error message are shown below. This is usually caused by
a syntax error.

Path: <provider config: virtualbox>
Line number: 17
Message: NameError: undefined local variable or method 'vm' for main:Object

    vm.memory = "256"
    ^^

C:\Users\stelv\OneDrive\Documents\ISPTEC\EINF5-M2\RC1\Projects>vagrant up
Bringing machine 'webserver' up with 'virtualbox' provider...
==> webserver: Box 'ubuntu/trusty64' could not be found. Attempting to find and install...
    webserver: Box Provider: virtualbox
    webserver: Box Version: >= 0
The box 'ubuntu/trusty64' could not be found or
could not be accessed in the remote catalog. If this is a private
box on Hashicorp's Vagrant Cloud, please verify you're logged in via
'vagrant login'. Also, please double-check the name. The expanded
URL and error message are shown below:

URL: ["https://vagrantcloud.com/ubuntu/trusty64"]
Error: The requested URL returned error: 404

C:\Users\stelv\OneDrive\Documents\ISPTEC\EINF5-M2\RC1\Projects>vagrant up
Bringing machine 'webserver' up with 'virtualbox' provider...
==> webserver: Box 'ubuntu/trusty64' could not be found. Attempting to find and install...
    webserver: Box Provider: virtualbox
    webserver: Box Version: >= 0
==> webserver: Loading metadata for box 'ubuntu/trusty64'
    webserver: URL: https://vagrantcloud.com/api/v2/vagrant/ubuntu/trusty64
==> webserver: Adding box 'ubuntu/trusty64' (v20191107.0.0) for provider: virtualbox
    webserver: Downloading: https://vagrantcloud.com/ubuntu/boxes/trusty64/versions/20191107.0.0/providers/virtualbox/unknown/vagrant.box
Download redirected to host: cloud-images.ubuntu.com
Progress: 76% (Rate: 563k/s, Estimated time remaining: 0:05:53)
```