

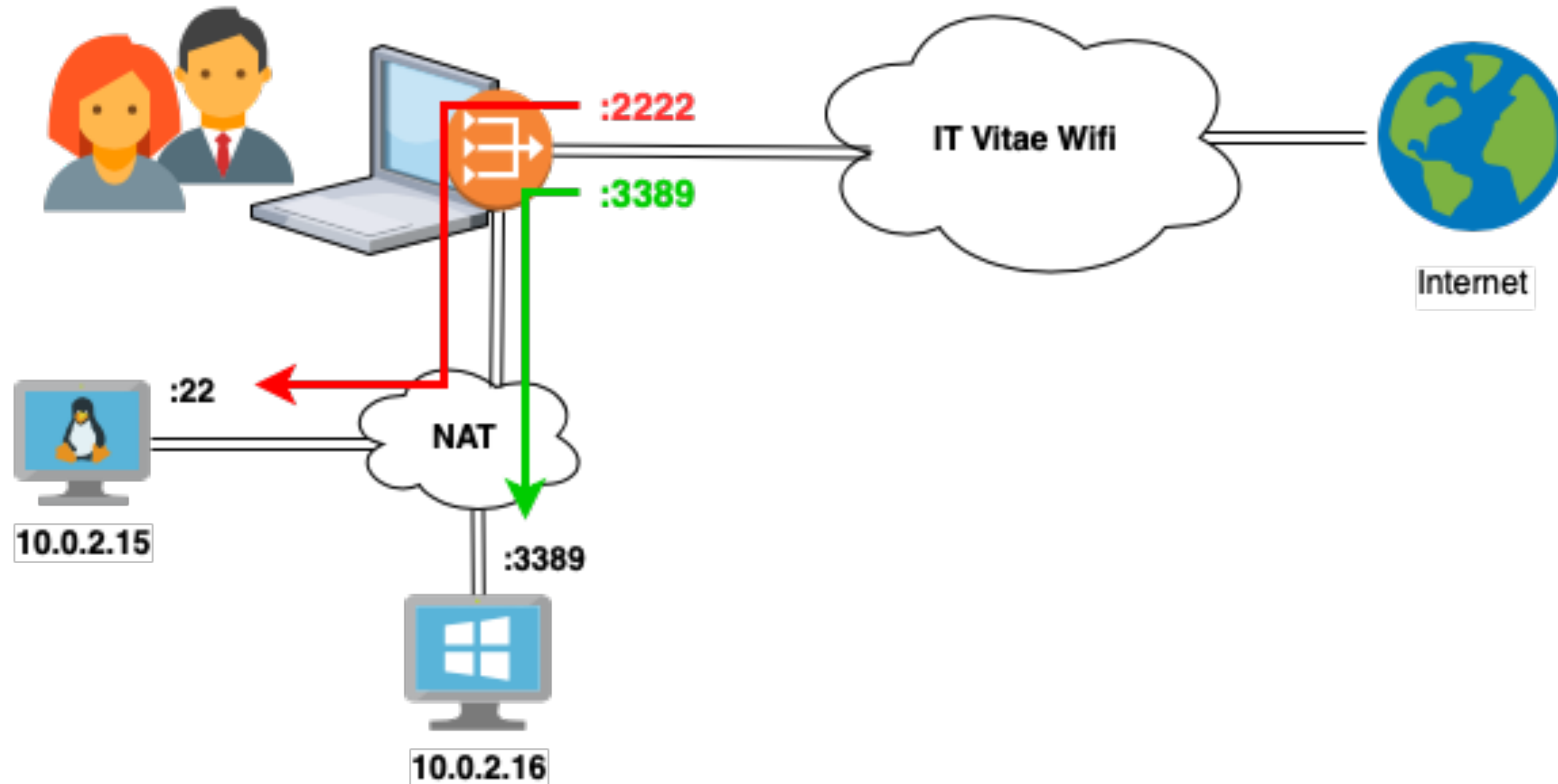
Linux, day 2



Networking and virtualization



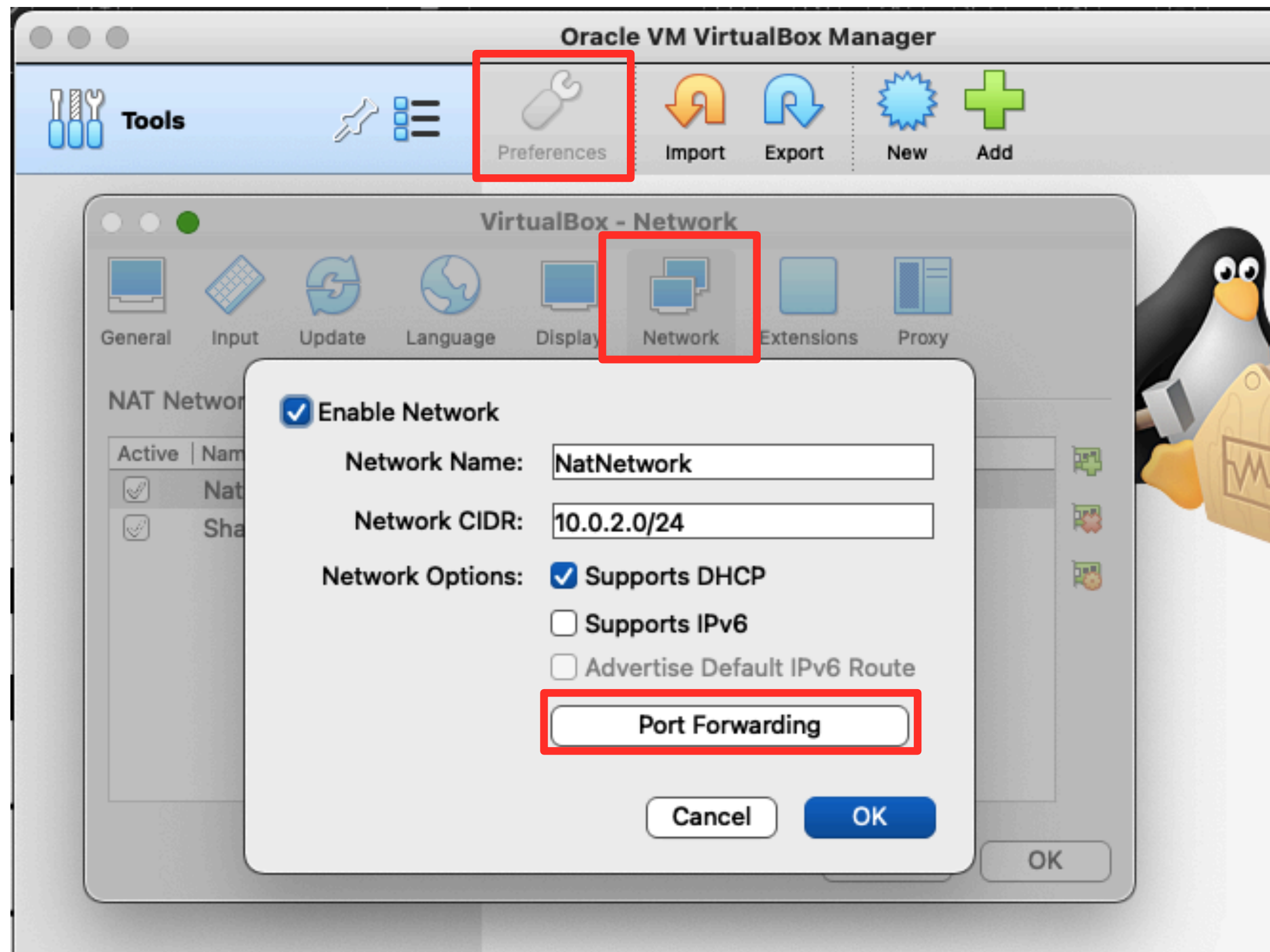
Port forwarding into NAT Net



You try!

- First, find your VM's IP address (10.0.2.15?)
- In the VirtualBox configuration / settings:
 - Find the shared "*NATnetwork*".
 - Add a port forward on 127.0.0.1:2222.
 - To port :22 of your VM (e.g. 10.0.2.15).

You try!



IPv6					
Name	Protocol	Host IP	Host Port	Guest IP	Guest Port
...	TCP	127.0.0.1	2222	10.0.2.15	22

What did we just do?

- On the host OS we made a “listener” on 2222.
- This “listener” forwards all traffic,
 - Coming to port 2222 on the host OS...
 - To port 22 on the guest OS (VM).
- So, let's make sure something's there!

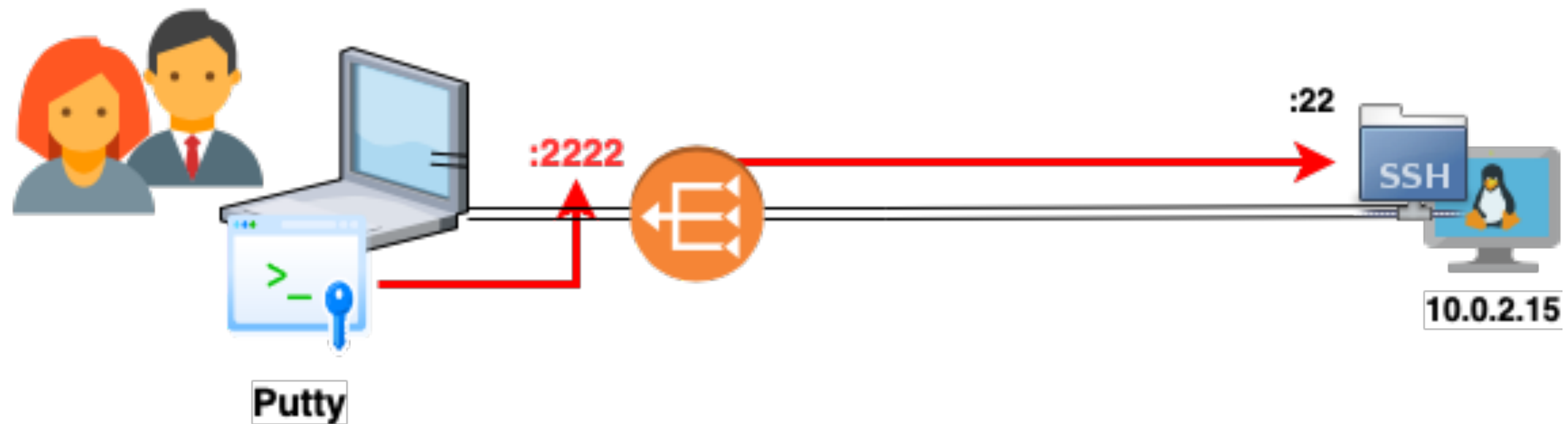
You try!

- On your guest VM, start the SSH daemon.

```
$ sudo systemctl enable sshd  
$ sudo systemctl start sshd
```

- On Ubuntu it's not "sshd" but "ssh".

Using the port forward



You try!

- On your host OS, connect to 127.0.0.1:2222.
 - Windows: use *Putty.exe*, or Powershell.
 - MacOS and Linux:

```
$ ssh -p 2222 tess@127.0.0.1
```

See: [Download Putty](#)

Making connecting easier

- Nobody likes remembering IP addresses!
 - On the VMs (both) run:

```
$ sudo nano /etc/hosts
```

- This asks for YOUR password.

Making connecting easier

- Add two lines, adjusted for your IP addresses.

```
10.0.2.15 ubuntu  
10.0.2.11 fedora
```

- Save and quit with <ctrl><x>.

Making connecting easier

- On the guest VMs, you can now run:

```
$ ssh tess@ubuntu
```

```
$ ssh tess@fedora
```

LAB: Users and groups

Command hints

useradd	Create a new user
usermod	Modify a user
groupadd	Create a new group
id	Show identity of a user
man	MANual pages

Assignment

- Create two new groups:
 - “staff” and “dummies”
- Create another two new users:
 - “opsuser” and “dummy2”
- Add yourself and “opsuser” to “staff”.
- Add “dummy” and “dummy2” to “dummies”

Assignment (spoilers)

```
$ sudo useradd -m opsuser  
$ sudo useradd -m dummy2  
$ sudo groupadd staff  
$ sudo groupadd dummies  
$ sudo usermod -a -G staff opsuser  
$ sudo usermod -a -G staff $USER  
$ sudo usermod -a -G dummies dummy  
$ sudo usermod -a -G dummies dummy2
```


Closing

Homework

- Reading:
 - "Files and directories", p 39-55
 - "File permissions", p 411-420
 - Chapter 27

Homework

- Go do:
 - Request a [free copy of the CPH book](#).

Reference materials

Resources

- [VirtualBox networking modes](#)
- [Download Putty](#)
- [Download WinSCP](#)
- [SSH keys for dummies](#)
- [Cyber Plumber's Handbook](#)