

# COMN - Computer Communications and Networks

## **Coursework VM Setup**

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# Why we use a virtual machine

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- Courseworks rely on many external apps and libraries
- Installing and configuring them for individual environment are tedious or often impossible
- We want a common platform

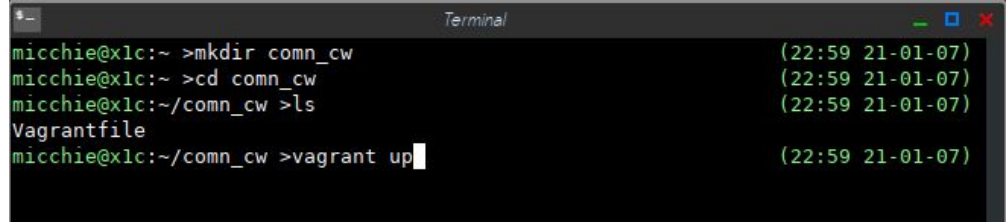
# Software to be installed in your laptop

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- Windows Mac (not M1) and Linux
  - Virtualbox 7.0 (<https://www.virtualbox.org/>)
    - Emulate the hardware and execute virtual machines
  - Vagrant 2.4.0 or higher (<https://www.vagrantup.com/>)
    - Configure, control and provision VMs
- Windows only
  - Git for Windows (<https://gitforwindows.org/>)
  - Also disable Hyper-V Hypervisor
    - Control Panel->Programs and Features->Turn Windows features on or off->Hyper-V->Hyper-V Platform
    - useful link: [https://www.itu.dk/people/ropf/blog/vagrant\\_install.html](https://www.itu.dk/people/ropf/blog/vagrant_install.html)

# Launch a VM

- Run Git Bash (Windows) or Terminal (Mac (not M1\*) /Linux)
- Create an empty directory
  - `mkdir comn_cw`
  - `cd comn_cw`
- Download **Vagrantfile\*\*** in this `comn_cw` directory using a web browser
- Start the VM
  - `vagrant up`



```
micchie@xlc:~ >mkdir comn_cw (22:59 21-01-07)
micchie@xlc:~ >cd comn_cw (22:59 21-01-07)
micchie@xlc:~/comn_cw >ls (22:59 21-01-07)
Vagrantfile
micchie@xlc:~/comn_cw >vagrant up (22:59 21-01-07)
```

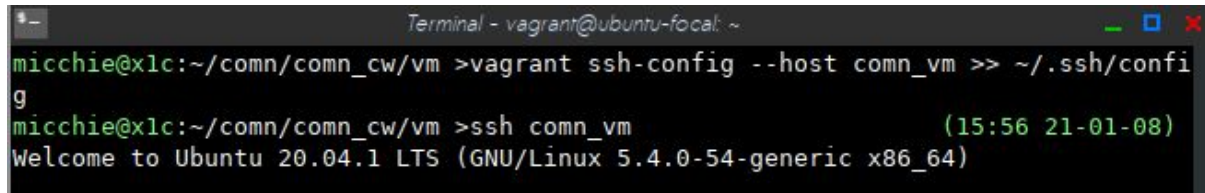
\* <https://git.ecdf.ed.ac.uk/mhonda/comn24cw/blob/main/vm/README.md>

\*\* <https://git.ecdf.ed.ac.uk/mhonda/comn24cw/blob/main/vm/Vagrantfile>

# SSH Login to the VM (Linux/Mac)

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- Option 1
  - `cd comn_cw`
  - `vagrant ssh`
- Option 2
  - `vagrant ssh-config --host comn_vm >> ~/.ssh/config`
  - `ssh comn_vm`



A terminal window titled "Terminal - vagrant@ubuntu-focal: ~" showing the execution of two commands. The first command is `vagrant ssh-config --host comn_vm >> ~/.ssh/config`, which appends the SSH configuration for the 'comn\_vm' host to the local configuration file. The second command is `ssh comn_vm`, which initiates an SSH connection to the VM. The output of the second command shows the user 'micchie@xlc' in the directory '~/comn/comn\_cw/vm', the time '(15:56 21-01-08)', and the Ubuntu version 'Welcome to Ubuntu 20.04.1 LTS (GNU/Linux 5.4.0-54-generic x86\_64)'.

```
Terminal - vagrant@ubuntu-focal: ~  
micchie@xlc:~/comn/comn_cw/vm >vagrant ssh-config --host comn_vm >> ~/.ssh/config  
g  
micchie@xlc:~/comn/comn_cw/vm >ssh comn_vm (15:56 21-01-08)  
Welcome to Ubuntu 20.04.1 LTS (GNU/Linux 5.4.0-54-generic x86_64)
```

# Shared Folder

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- Files in the directory where Vagrantfile is can be accessed inside the VM at `/vagrant`