

COMN - Computer Communications and Networks

Coursework VM Setup

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Why we use a virtual machine

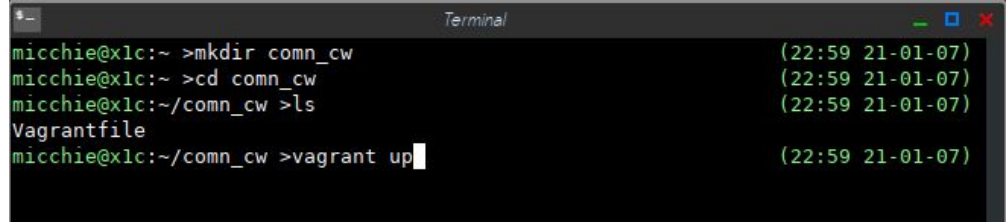
- Courseworks rely on many external apps and libraries
- Installing and configuring them for individual environment are tedious or often impossible
- We want a common platform

Software to be installed in your laptop

- Windows Mac and Linux
 - Virtualbox (<https://www.virtualbox.org/>)
 - Emulate the hardware and execute virtual machines
 - Vagrant (<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

Launch a VM

- Run Git Bash (Windows) or Terminal (Mac/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`

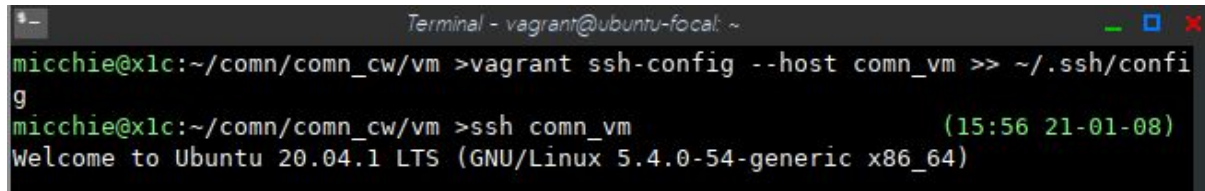


```
micchie@xlc:~ >mkdir comn_cw (22:59 21-01-07)
micchie@xlc:~ >cd comn_cw (22:59 21-01-07)
micchie@xlc:~/comn_cw >ls (22:59 21-01-07)
Vagrantfile
micchie@xlc:~/comn_cw >vagrant up (22:59 21-01-07)
```

*https://git.ecdf.ed.ac.uk/mhonda/comn_cw/blob/master/vm/Vagrantfile

SSH Login to the VM (Linux/Mac)

- 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 20.04.1 LTS login banner.

```
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

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