GNU/Linux
Install Ubuntu on Dropbox

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Learning objectives

- GNU/Linux General background
- Prepare to install Ubuntu Linux
- Install Ubuntu Linux
- Post Ubuntu installation
- Installing Python and Scapy

Installing
Ubuntu Linux
On VirtualBox

Powered By
GNU/Linux
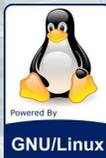
VirtualBox

- A powerful x86 and AMD64/Intel64 Opensource Virtualisation solution
- VirtualBox runs on Linux, Microsoft Windows, Apple Macintosh, and OpenSolaris hosts and supports a large number of guest operating systems
- The software can be downloaded from:
  - https://www.virtualbox.org/wiki/Downloads
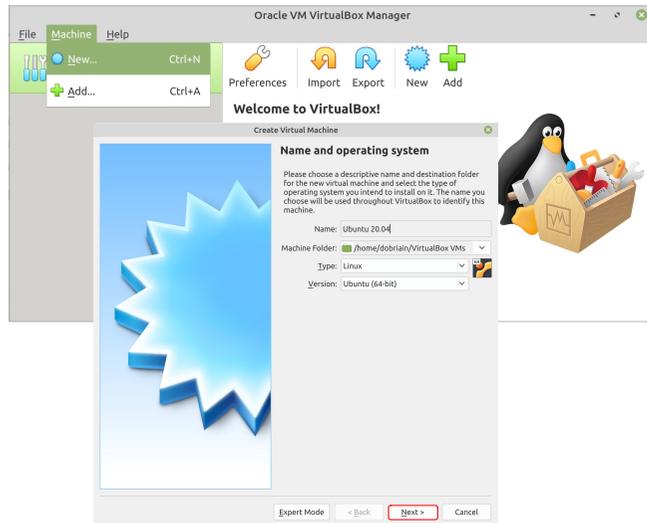
Prepare for Ubuntu on VirtualBox

Prepare for Ubuntu on VirtualBox

- Allow adequate memory for both host and Virtual Machine
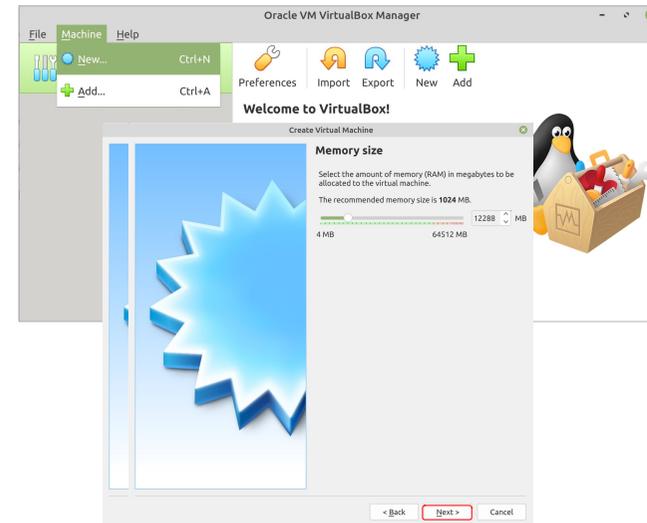
Prepare for Ubuntu on VirtualBox

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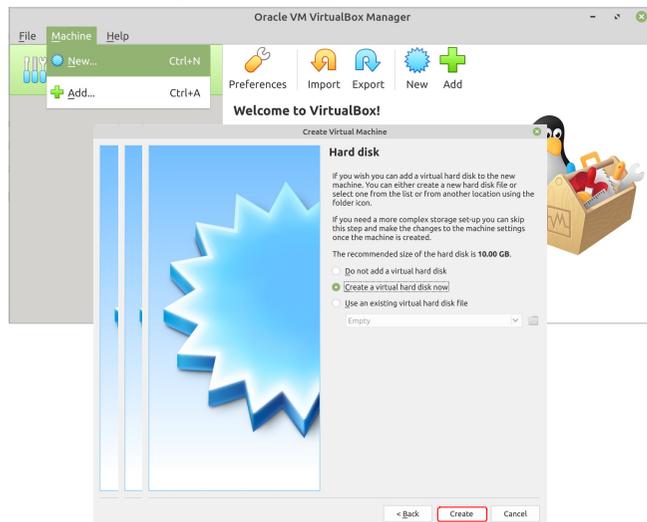
Prepare for Ubuntu on VirtualBox

- Allow adequate memory for both host and Virtual Machine
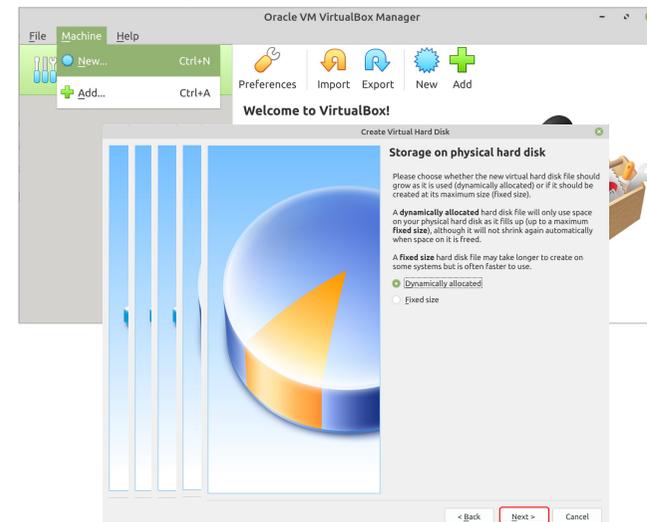
Prepare for Ubuntu on VirtualBox

- Allow adequate Virtual drive space for VM

Prepare for Ubuntu on VirtualBox

- Settings
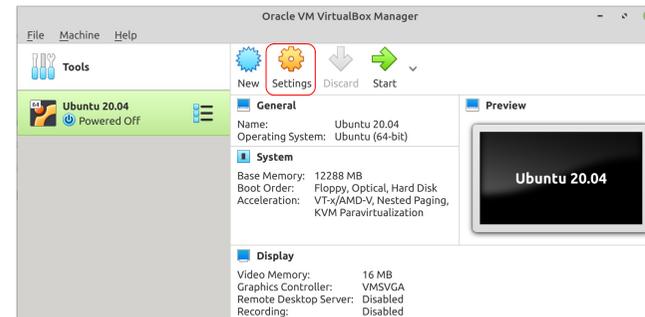
Prepare for Ubuntu on VirtualBox

- Allow 2 CPUs for the VM if possible
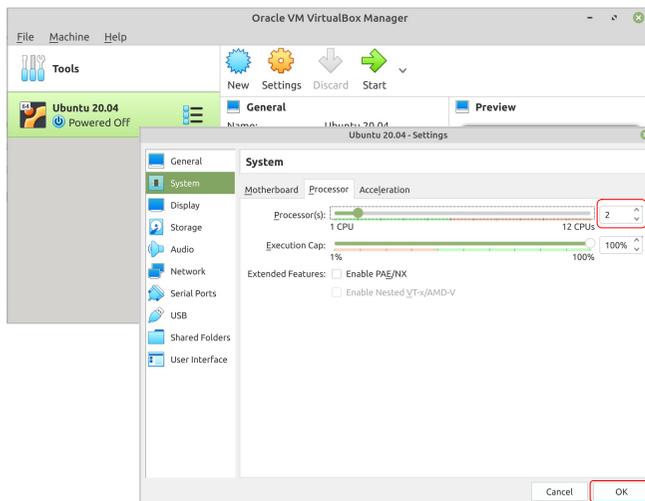
Prepare for Ubuntu on VirtualBox

- Select the Ubuntu .iso image to install
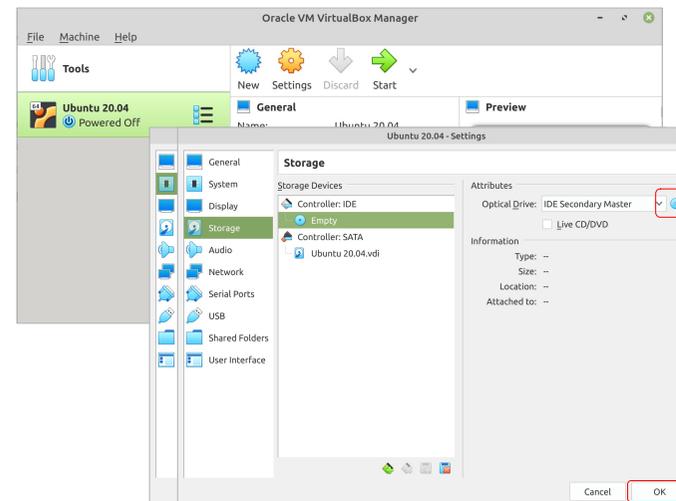
Prepare for Ubuntu on VirtualBox

- Select Bridged Adaptor if your network will supply and address
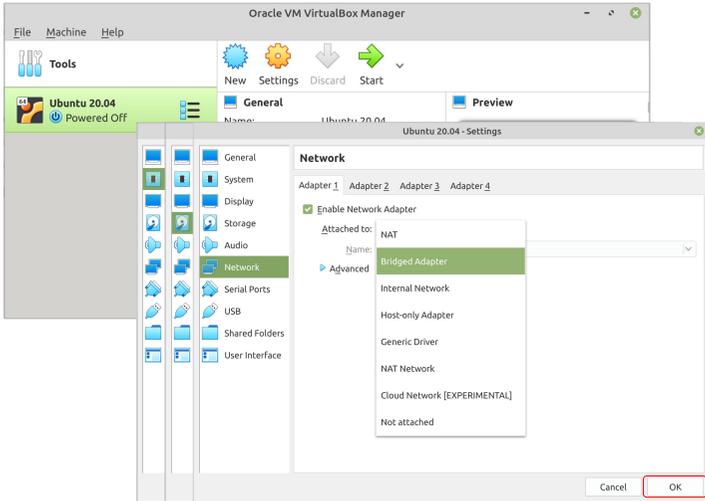
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Prepare for Ubuntu on VirtualBox
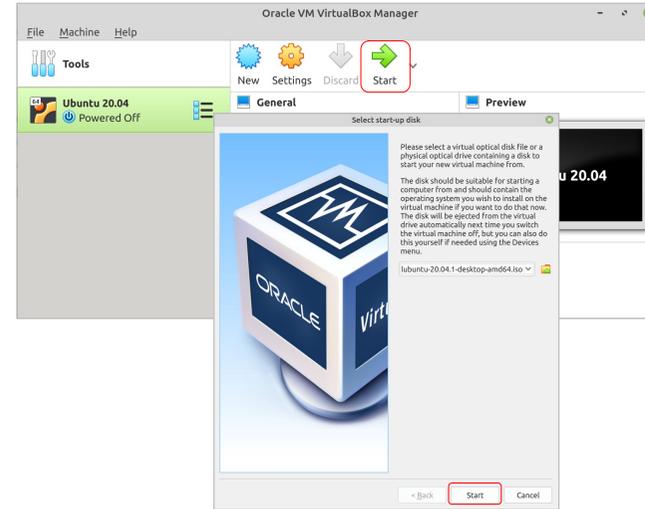
- Start

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Prepare for Ubuntu on VirtualBox

- Start
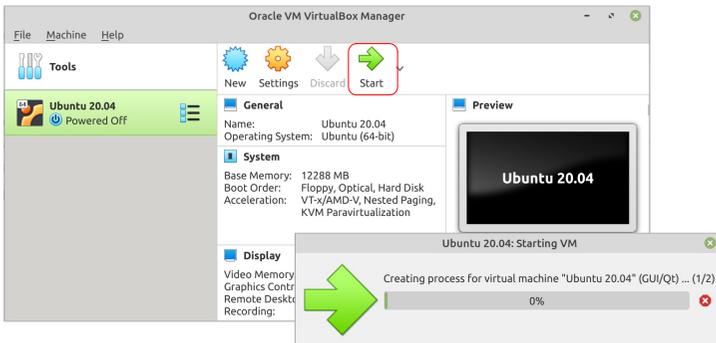
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Prepare for Ubuntu on VirtualBox

- Install
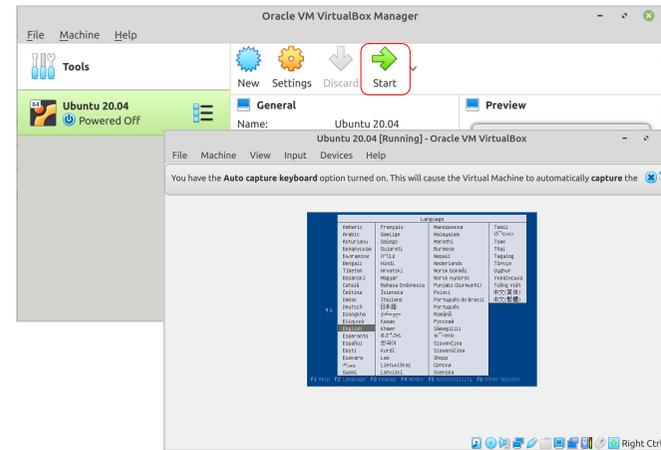
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Install
Ubuntu Linux

Updates and other software

- English (UK)
    - **English (UK, extended, with Win Keys)**
    - ◉ Continue

Updates and other software

- ◉ **Normal installation**
- ◻ Minimal installation
- ◼ **Download updates while installing Ubuntu**
- ◼ **Install third party software for graphics and Wi-Fi hardware and additional media formats**

Installation type

- ◉ **Erase disk and install Ubuntu**
    - Advanced
        - ◉ **None**
        - ◻ Use LVM with the new Ubuntu installation
        - ◻ Erase disk and use ZFS
        - ☐ Encrypt the new Ubuntu installation for security**
- ◻ Something else
- **Install now**

** Only with LVM or ZFS

Write changes to disks

- Partition table (sda)
  - Partition #2 of sda as ESP
  - Partition #3 of sda as ext4

- ◉ Continue

Where are you

- ◉ Dublin
- **Continue**

Who are you

- Your name: **Ada Lovelace**
- Your computer's name: **ADAUbuntu**
- Pick a username: **alovelace**
- Choose a password: **ada_secret**
- Confirm youre password: **ada_secret**
  - ▫ Log in automatically
  - ◉ Require my password to log in
  - ☐ Use Active Directory
- **Continue**

Post Install Ubuntu Linux

GNU/Linux

Post install activity

- Add terminal to Favourites pane
  - Alt-F2 and type `gnome-terminal` in the window

Run a Command

gnome-terminal

Press ESC to close

- Add the terminal to the Favourites

All Windows
New Window
Preferences
Add to Favorites
Quit

- Remove unnecessary applications from Favourites

New Window
Play/Pause
Next
Previous
Stop & Quit
Remove from Favorites

ubuntu

Update the Operating System

- Update to the latest version of packages

```
alovelace:~$ sudo apt update
Fetched 369 kB in 1s (382 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.

alovelace:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

ubuntu

Add some essential packages

- Install `GCC`, `make` and the openSSH Server

```
alovelace:~$ sudo apt install gcc make openssh-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  gcc-multilib autoconf automake libtool flex bison gcc-doc make-doc
  molly-guard monkeysphere ssh-askpass
The following NEW packages will be installed:
  gcc make openssh-server
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 550 kB of archives.
After this operation, 1,991 kB of additional disk space will be
used.
Preconfiguring packages …
Setting up openssh-server (1:8.3p1-1) ...
Setting up gcc (4:10.2.0-1ubuntu1) ...
Setting up make (4.3-4ubuntu1) ...
Processing triggers for systemd (246.6-1ubuntu1) ...
Processing triggers for man-db (2.9.3-2) ...
Processing triggers for ufw (0.36-7) ...
```

ubuntu

SSH keys

- Generate SSH keys

```
alovelace:~$ ssh-keygen -t rsa -b 4096
Generating public/private rsa key pair.
Enter file in which to save the key (/home/Alovelace/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/Alovelace/.ssh/id_rsa
Your public key has been saved in /home/Alovelace/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:Pm4KoPJHgvlnVsJ9AuBpjVNDLMoA5o7HBHkQBkiH6gI ub-g3-20-04@ubuntu
The key's randomart image is:
+---[RSA 4096]----+
|@B.+.            |
|Bo= +            |
|+=.B .           |
|E+* o            |
|+=+o o  S        |
|++..+ +..        |
|+. o.o oo        |
|... =. ...       |
|  .=  .o.        |
+----[SHA256]-----+
```

ubuntu

VirtualBox

- If the install is on VirtualBox
  - Insert the Guest Additions CD image by selecting the option under "Devices" in the menu
  - That will then mount in **`/media/alovelace`** on the filesystem
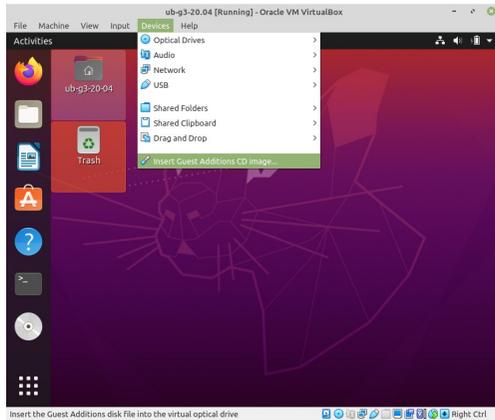
VirtualBox

- If the install is on VirtualBox
  - Add the mounted Guest Additions


```
alovelace:~$ cd /media/alovelace/Vbox_Gas_6.1.10
alovelace:/media/alovelace/Vbox_Gas_6.1.10~$ sudo ./autorun.sh
Verifying archive integrity... All good.
Uncompressing VirtualBox 6.1.10 Guest Additions for Linux........
VirtualBox Guest Additions installer
Removing installed version 6.1.10 of VirtualBox Guest Additions...
Copying additional installer modules ...
Installing additional modules ...
VirtualBox Guest Additions: Starting.
VirtualBox Guest Additions: Building the VirtualBox Guest Additions kernel
modules.  This may take a while.
VirtualBox Guest Additions: To build modules for other installed kernels, run
VirtualBox Guest Additions:   /sbin/rcvboxadd quicksetup <version>
VirtualBox Guest Additions: or
VirtualBox Guest Additions:   /sbin/rcvboxadd quicksetup all
VirtualBox Guest Additions: Building the modules for kernel 5.8.0-36-generic.
VirtualBox Guest Additions: Running kernel modules will not be replaced until
the system is restarted
Press Return to close this window...


Alovelace:/media/alovelace/Vbox_Gas_6.1.10~$ sudo init 6
```

Running Ubuntu Linux Desktop

Ubuntu Linux
Install Scapy

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GNU/Linux

Install Scapy on Linux

```
~$ sudo apt-get install python3-pip texlive
~$ pip3 install --pre scapy[complete]
~$ pip3 install scapy-http
```

- **Texlive**
  - typesetting, previewing and printing of TeX documents
- **pip3**
  - A tool for installing and managing Python3 packages
- **scapy**
  - Interactive packet manipulation tool
- **scapy-http**
  - HTTP-layer support for Scapy

Test run Scapy interactive shell

```
~$ scapy3

                    aSPY//YASa
               apyyyyCY//////////YCa
              sY//////YSpcs  scpCY//Pp       |
          ayp ayyyyyyySCP//Pp      syY//C     | Welcome to Scapy
          AYAsAYYYYYYYY///Ps            cY//S | Version 2.4.3
               pCCCCY//p          cSSps y//Y  | https://github.com/secdev/scapy
               SPPPP///a          pP///AC//Y  |
                A//A               cyP////C   | Have fun!
                p///Ac              sC///a    |
                P////YCpc           A//A      | Wanna support scapy? Rate it on
         scccccp///pSP///p          p//Y      | sectools!
         sY/////////y  caa          S//P      | http://sectools.org/tool/scapy/
          cayCyayP//Ya              pY/Ya     |           -- Satoshi Nakamoto
           sY/PsY////YCc            aC//Yp    |
            sc  sccaCY//PCypaapyCP//YSs
                  spCPY//////YPSps
                     ccaacs

                          using IPython 7.14.0

>>>
```

Learning objectives

- GNU/Linux General background ✓
- Prepare to install Ubuntu Linux ✓
- Install Ubuntu Linux ✓
- Post Ubuntu installation ✓
- Installing Python and Scapy ✓

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C A R L O W
Institiúid Teicneolaíochta Cheatharlach

Dr Diarmuid Ó Briain
Innealtóir Cairte

Léachtóir

CELEBRATING
50 YEARS
1970-2020

Athena SWAN
Bronze Award
GENDER CHARTER

engc●re
advancing technology