

Installing Linux Mint 19.3 “Tricia” - Xfce in a VM (virtual machine)

There are different “flavors” of Linux

Linux Mint is one of those

Ubuntu is one of those

CentOS is one of those

...

For each flavor, there are different versions

19.3 “Tricia” for Linux Mint

19.10 “Eoan Ermine” for Ubuntu

8 for CentOS

...

first, install VirtualBox for your system

<https://www.virtualbox.org/wiki/Downloads>

if you are already using Linux (e.g., Ubuntu or Linux Mint)

use the package manager to install VirtualBox (e.g., via the terminal)

```
sudo apt-get update
```

```
sudo apt-get install virtualbox virtualbox-gt
```

download the Linux Mint ISO (drive image)

64-bit XFCE: <https://www.linuxmint.com/edition.php?id=278>

run VirtualBox

create a new VM

call it something like “cyber”

its type is Linux

its version is Ubuntu (64-bit)

give it about 25% of your system's RAM; e.g.,

4 GB: 1024 MB (1 GB)

16 GB: 4192 MB (4 GB)

how can you tell how much RAM your system has?

on Windows, probably at the control panel

at the Linux terminal, several methods:

```
free -gh
```

```
cat /proc/meminfo | grep MemTotal
```

create a virtual hard drive (VDI)

make it dynamically allocated so that it only uses up as much space as it needs

make it sufficient in size (say 100 GB)

edit the VM

click on *Settings*

click the *General* option

select the *Advanced* tab

set *Shared Clipboard* to **Bidirectional**

click the *Storage* option
select the *Empty CD/DVD* under *Controller: IDE*
click the *CD* icon in the *Attributes* section
select *Choose a virtual CD/DVD disk file...*
find the **Linux Mint ISO** that you downloaded

click the *Network* option
in the *Adapter 1* tab, make it attached to **Bridged Adapter**
select the proper network adapter to “connect” the virtual adapter to
e.g., WiFi if you are using WiFi

click **OK**

start the VM

once the Linux Mint ISO has booted, click on the **Install Linux Mint** icon

when prompted for the installation type, select **Something else**

your hard drive should be referred to as something like `/dev/sda`

it should be empty

if not, select partitions and remove them (this will destroy all data on the drive!)

a new drive will need a new partition table

then, add the following new partitions to the free space

- 1: size=1024 MB
 type=primary
 location=beginning
 use as=ext2
 mount point=/boot
- 2: size=RAM size if RAM size >= 4 GB; 2x RAM size otherwise; e.g.,
 2 GB RAM: 4 GB swap
 4 GB RAM: 4 GB swap
 but no more than 8 GB
 type=primary
 location=end
 use as=swap area
- 3: size=~35% of space left
 type=primary
 location=beginning
 use as=ext4
 mount point=/
- 4: size=~65% of space left
 type=primary
 location=beginning
 use as=ext4
 mount point=/home

/boot: stores the Linux kernel images

swap: memory swap space (also used for hibernation)

/: stores the OS, OS configuration files, and applications

/home: stores your files (application configuration, settings, pictures, etc)

the strategy is that updating the OS means wiping /boot, /, and swap
/home won't be touched
updating then takes little time (~30 minutes)

the **Chicago** timezone is fine (for Central)

set the user; mine is
name: jgourd
computer name: jgourd-cyber
username: jgourd
password: something fairly strong
require my password to log in
don't encrypt my home folder

reboot into Linux Mint
play around!

Things to Install and/or Perform After Installing Linux Mint

these all happen in the terminal
click on the *monitor* icon at the bottom-left of the desktop
-or- click on the “start button” (the LM logo at the bottom-left of the desktop)
then, click on *System* and scroll to **Terminal Emulator**

make sure that you are connected to the Internet!

update the Linux Mint system
sudo apt-get update
sudo apt-get upgrade
sudo apt-get dist-upgrade

install Google Chrome (only for 64-bit OS)
the process is to first get the signing key that Google puts out for their repository
for authentication
then, we add the Google repository and update the list of packages available
finally, we install Google Chrome

```
wget -q -O - https://dl-  
ssl.google.com/linux/linux_signing_key.pub | sudo apt-key add -  
sudo sh -c 'echo "deb [arch=amd64]  
http://dl.google.com/linux/chrome/deb/ stable main" >>  
/etc/apt/sources.list.d/google-chrome.list'  
sudo apt-get update  
sudo apt-get install google-chrome-stable
```

install Microsoft core fonts (for compatibility across systems)
sudo apt-get install ttf-mscorefonts-installer

install essential build tools (for programming)

```
sudo apt-get install build-essential
```

install Vim (the ubiquitous text editor)

```
sudo apt-get install vim
```

next, do yourself a favor and add my Vim “run commands”

these customize Vim in a way that I like

if you wish, grab my .vimrc from the web site and place it in ~

it usually downloads in ~/Downloads; therefore,

```
mv ~/Downloads/.vimrc ~
```

cleanup the system

```
sudo apt-get autoremove
```

```
sudo apt-get clean
```

```
sudo apt-get autoclean
```

set the autorun script when opening up a terminal

we'll first copy the default provided by the OS

then, we ensure that we own it (more on this later)

finally, we'll load it into the current terminal

```
sudo cp /etc/bash.bashrc ~/.bashrc
```

```
sudo chown $USER:$USER ~/.bashrc
```

```
source ~/.bashrc
```

add my useful aliases to the autorun script (i.e., add these to ~/.bashrc)

first edit via on of the following text editors:

```
vim ~/.bashrc (text-based)
```

```
nano ~/.bashrc (text-based)
```

```
xed ~/.bashrc (GUI)
```

then, add the following at the end of the file:

```
alias c='clear'
alias df='df -Th'
alias h='history'
alias h2='history | awk "{ CMD[$2]++; count++; } END
{ for (a in CMD) print CMD[a] " " CMD[a] / count * 100 "% " a; }"'
| grep -v "/" | column -c3 -s " " -t | sort -nr | nl | head -n25'
alias j='jobs'
alias ls='ls -CF --group-directories-first --color=auto $*'
alias lss='ls -Alh $*'
alias m='more'
alias netstat='sudo netstat -alntpu | grep " LISTEN "'
alias p='ps -ef'
alias rm='mv -f -t $HOME/.local/share/Trash/files $*'
alias rmdir='mv -f -t $HOME/.local/share/Trash/files $*'
alias ~='cd ~'
```

finally, load them into the current terminal via

```
source ~/.bashrc
```