

Install Linux Mint on a Macbook Pro

A set of tips for installation and post install

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1 Introduction

To get started acquire a copy of the Mint distribution. The simplest way to do this is to download the latest Linux Mint ISO image file using an already setup workstation, and “burn” it onto a USB drive. For example use a “mac” laptop with `macos` installed. Confirm internet connectivity is available (Wifi or ethernet), and the machine has at least one external port.



NB: as of 1/4/24 not working are:

- wifi broadband
- audio
- touch bar

1.1 Install Mint on a macbook pro

The specific goal of this “DIY” project is to refurbish a seven year old macbook pro laptop with a modern linux operating system. The OS we’ll focus on for this post is **Linux Mint 21.3**. Why Mint? Well, as its been, “since the beginning” of the linux era (circa 1993) the main challenge to installing a linux distribution on almost any PC or mac is wrestling with the hardware drivers: notably video, audio, trackpad and power management drivers. The Mint distro provides a solution the drivers needed for our target macbook pro, making the install much, much more straightforward.

The target machine is a 2016 13-inch MacBook Pro with four Thunderbolt 3 Ports.

To start the process download an **iso** file from the Mint website. The current “Virginia” version of Mint **iso** file is 3.07 GB in size. The “Cinnamon” edition is recommended.

Once downloaded also download the associated **sha256sum.txt** file.

To check the integrity of your local ISO file, generate its SHA256 checksum and compare it to the content of the **sha256sum.txt** file:

```
> sha256sum -b linuxmint-21.3-cinnamon-64bit.iso
```

We can transfer the **iso** file to a USB flash drive using one of several methods. On **macos** we suggest using the app **balenaEtcher**. You can download **balenaEtcher** [here](#)

Insert the bootable USB flash drive into the target macbook and reboot. Hold the **ALT** key while the machine reboots and you’ll be presented with a screen offering boot drive options. Select the icon for the USB drive. A **grub** menu will appear.

From the Grub menu choose **Start Linux Mint 21.2 Cinnamon 64-bit**. and the Mint install program will start.

A linux mint desktop will appear allowing you to “test drive” Mint or to continue the install by clicking the icon labeled “install Linux Mint”.

A setup dialog will start. Select, in sequence

- Language (English for us),
- Network (suggest skip),
- codexes (suggest skip),
- options for a “fresh install” or “something else” (choose **fresh** to devote full hard drive to Mint).
- Location (Pacific region for us),
- name a user who will have administrator privilidges, a hostname, and assign a password.

The install process will proceed. When complete connect the target machine to the Internet. If you have ethernet connectivity plug the cable directly into the target macbook and Mint should connect automatically to the internet. For wireless wifi access use a supported modem e.g. Panda Wireless modem. Panda is supported since Mint 21.2 has **Ralink RT5372** drivers installed. (see appendix for Broadcom install instructions)

The final hardware related step is to add a second monitor, if available, via HDMI.

Thats it. Reboot and login with the admin username and password you provided earlier.

2 Setup configuration

After logging in for the first time start by configuring the displays, the keyboard, the touchpad and the backup software.

1. Open Display menu (press **command** key to open menu and search for “display”). Select Primary monitor with 2560x1440 as the resolution for both monitors. Set **Monitor scale** at 200% to increase default font size

GNU GRand Unified

Bootloader (GRUB). “When your Linux operating system starts up, GRUB is the first program that runs. It loads the kernel of the operating system, and then the kernel loads the rest of the operating system, including the shell, the desktop environment, and other operating system features.” [codecademy.com](https://www.codecademy.com)

in apps. Second monitor should be set at 3840x2160 (200%)

2. Turn on the pre-installed backup program, Timeshift, to provide hourly snapshots.
3. Set keyboard and trackpad preferences:
 - Open Mouse and Touchpad in settings. Turn on Tap to click and Reverse scroll.
 - Open Keyboard > Layouts > Options > Caps Lock behavior and select Swap Esc and Caps-Lock
4. Update base pre-installed software.

```
> sudo apt update
> sudo apt upgrade
```

3 Additional Software setup

1. Install basic utilities `ssh`, `git`, `wget`, `curl`, `zsh`, `vim`, as well as major applications `tex`, `qutebrowser`, `firefox` and `zathura` with one command:

```
sudo apt install ssh zsh curl git texlive-full
dropbox vim zathura qutebrowser firefox
r-base-core
-y
```

2. Install Zotero and Dropbox. The easiest way to install Zotero and Dropbox is with the Mint Software Manager aka Flatpak.
3. Install `oh-my-zsh` and `oh-my-zsh` plugins `z` and `z-autosuggestions`

```
sh -c "$(curl -fsSL https://raw.githubusercontent.com/ohmyzsh/ohmyzsh/master/tools/install.sh)"
git clone https://github.com/zsh-users/zsh-autosuggestions \
  ${ZSH_CUSTOM:-- ~/.oh-my-zsh/custom}/plugins/zsh-autosuggestions
git clone https://github.com/agkozak/zsh-z \
  ${ZSH_CUSTOM:-- ~/.oh-my-zsh/custom}/plugins/zsh-z
```

Don't forget to edit `.zshrc` to include `z` and `z-autosuggestions` in the plugins list.

Run bash shell script `~/Dropbox/dotfiles/set_up_links.sh` to set up symbolic links (e.g. `ln -s ~/Dropbox/prj ~/prj`). See Appendix 1 below for details.

4 Appendix 1. Script to set up links from local Home to Dropbox

`set_up_links.sh`

```
#!/bin/zsh
ff=( ".zshrc" ".vimrc" ".local" ".vim" ".config" )
for P in "${ff[@]}"
do
  echo "create a link for Dropbox/dotfiles version of $P in Home"
  ln -v -s "$HOME/Dropbox/dotfiles/$P" "$HOME/$P"
done

dd=( "sbx" "bin" "docs" "prj" "work" "shr" )
for P in "${dd[@]}"
do
  echo "create a link for Dropbox working directories $P in Home"
  ln -v -s "$HOME/Dropbox/$P" "$HOME/$P"
done
```

5 Appendix 2. Copy files to new Mint machine

Connect to new machine via ssh from mac laptop

First on the new machine (zz)

```
zz> sudo apt install ssh
zz> ifconfig
```

get IP for target, say 10.0.1.196

Either shell in to linux mint machine, or secure copy files over.

```
mac> ssh z@10.0.1.196  
mac> scp .vimrc z@10.0.1.196:~
```

6 Practice

Install docker and run R code from Docker Hub.