

AmRRON

Linux Mint Workstation

Guide



v2.3a - May2018

Developed by codename Chainsaw
<https://chainsawprivacy.wordpress.com>



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Version History

V 1.0	First Release	09 Jun 2016
V 1.1	Added gtkTerm, fixed conky file, converted to LibreOffice format	26 Dec 2016
V1.2	Added discussion about Cinnamon vs Xfce guis. Changed RMS Express to version 1.4 only. Replaced SlientEye, the steganography program, with to new AmRRON standard – Steg. Tails 3.0 KeePass supports v2 databases, removed v1 recommendation	29 May 2017
V2.0	Upgraded to use Mint 18.2 Xfce. Removed Wine & RMS Express. Will add ARDOP later.	3 Sep 2017
V2.1	Added ARDOP guide from Foxtrot Kilo-01, corrections	13 Sep 2017
V2.2	Corrected Conky startup, Converted Conky config	18 Oct 2017
V2.3	Updated conky , use 'ip link show', changed my website.	26 May 2018
V2.3a	Moved the conkyrc wget command to my website so I can keep it updated there.	28 May 2018

1. Introduction & Pre-work

This document will describe the installation of Linux Mint 18, a version of Ubuntu Linux, for use with AmRRON's mission. The completed workstation will support amateur radio operations and information security.

This guide assumes a standard Windows compatible desktop or laptop will be used to install Linux Mint as the **only** operating system. Following this guide will erase all data on the hard drive. I repeat, following this guide **will erase all data** on the hard drive.

If you wish to install Linux Mint in a dual boot mode with Windows, the Mint installer will prompt to "install alongside" windows. Encryption is hard in a dual boot, so I won't cover it here.

When formatting the hard drive, select encrypt the drive. When installed, pick up at section 3 Initial Setup.

If you wish to use some other version of Ubuntu based Linux, you should be able to follow these instructions with some modification.

Pre-Work

Before you start following these instructions and installing Linux Mint, you need to back up your files and data off your old system. These are generic steps for windows. Please use google to help find specifics for your programs.

- 1) Copy the contents of your Windows My Documents, My Pictures, My Music, and My Videos to a USB drive.
- 2) Check your current email program and note your configuration including host, ports, username and password. If you are using Thunderbird on Windows, you can export your profile and folders to the USB (Tools>ImportExport Tools>Export Profile). You must be using a current version. Linux users can copy their .thunderbird folder from their home folder
- 3) If you are using Enigmail on windows, export your configuration to the USB. (Enigmail>Preferences - Backup/Restore, Export Settings and Keys)
- 4) Export your browser bookmarks and passwords to the USB. If you are using Firefox's Sync feature, your bookmarks and passwords will carry over to the new install. Verify your Firefox is sync'd
- 5) Copy your fldigi files to the USD drive. Typically, they are at C:\User\<login_name>\fldigi.files
- 6) Find your Winlink Password for RMS Express and save it
- 7) If you already use KeePass for password management, copy the database to the USB

Linux is similar. See Appendix A for upgrading a Chainsaw Mint 17 workstation.

2. Install Mint

Now it's time to start the install. You do have your back up, right?

This guide recommends Mint 18.3, the latest version of Mint. .

Within Mint, there are 4 versions of the user interface. Two of them are good for the general and new Linux user - Cinnamon and Xfce. Xfce has a good interface and does not require a powerful graphics card like Cinnamon. I have also seen reports from others that Cinnamon was crashing often.

Visit the Linux Mint website and download Mint 18.3 64bit Xfce.

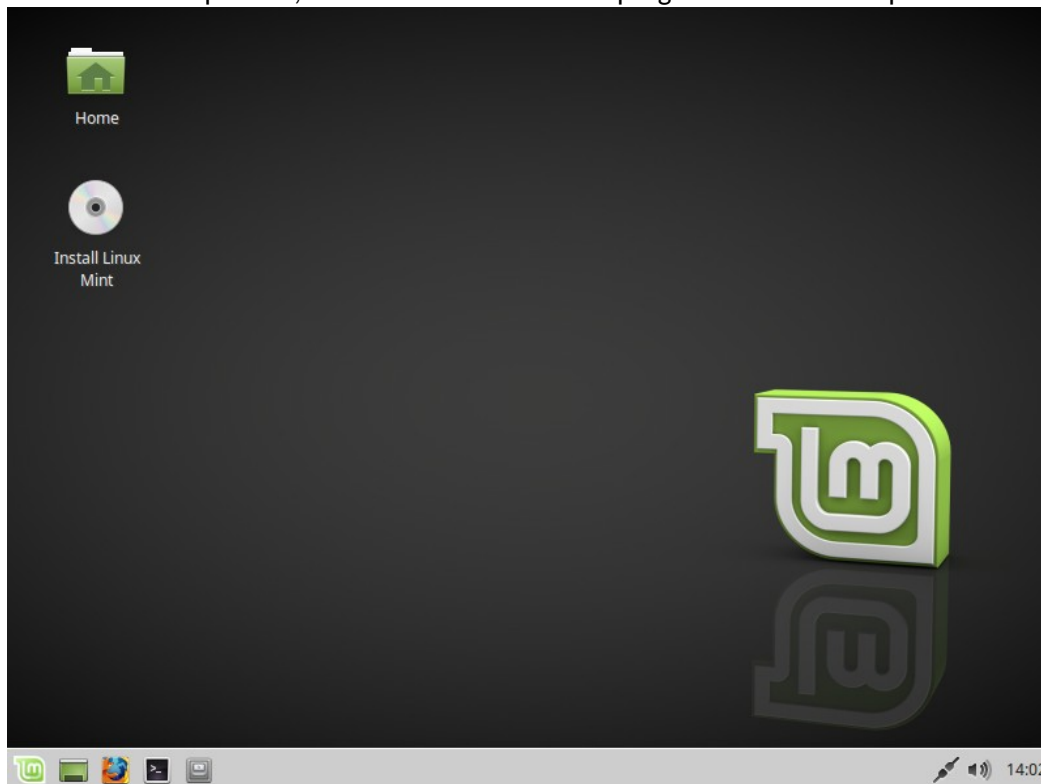
<https://www.linuxmint.com/download.php>

Burn the ISO file to a DVD or copy it to a 4GB USB stick (I use rufus to make bootable USBs

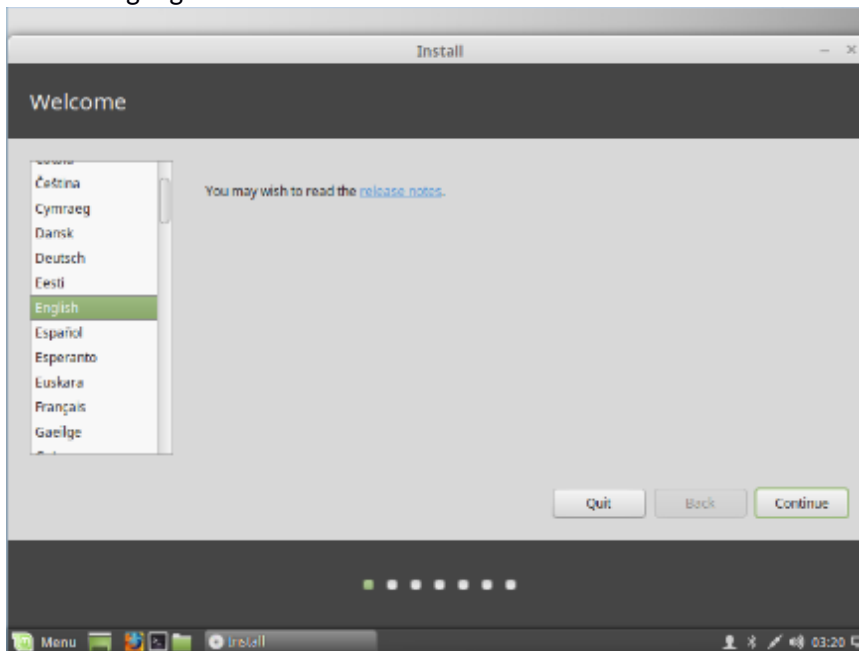
<https://rufus.akeo.ie/>)

Boot to your USB stick or DVD. You may need to press a key on boot to show boot options. (ESC, F2, or F12 usually)

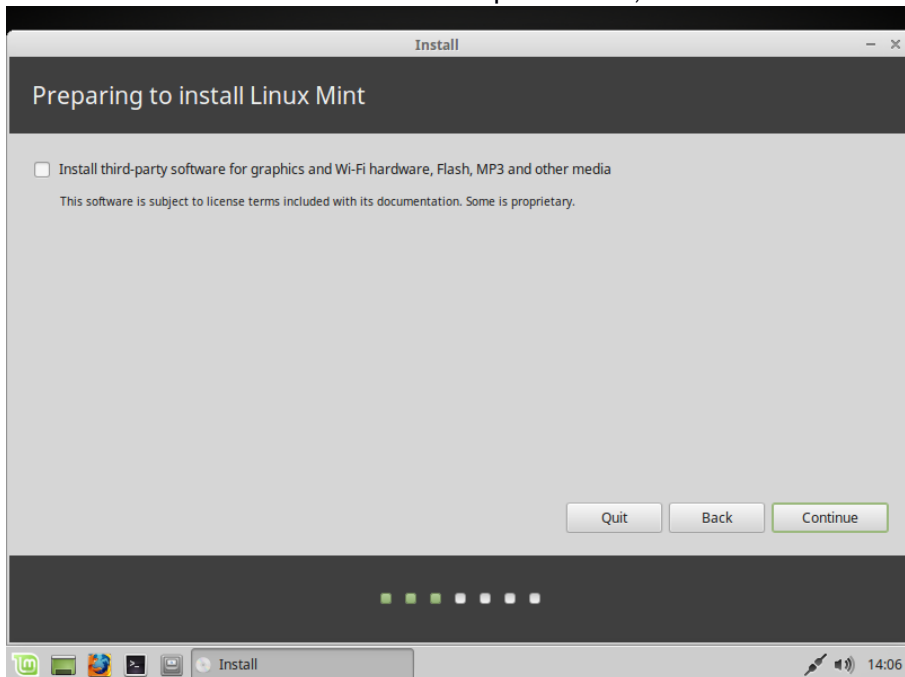
Once the desktop boots, Run the Install Linux Mint program on the desktop.



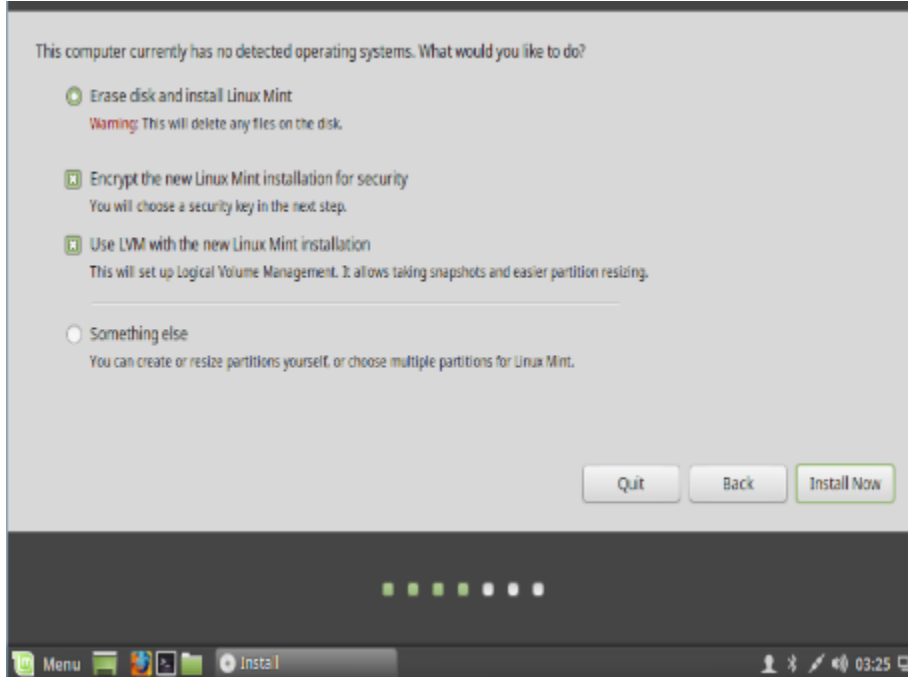
Select Language & Press Continue



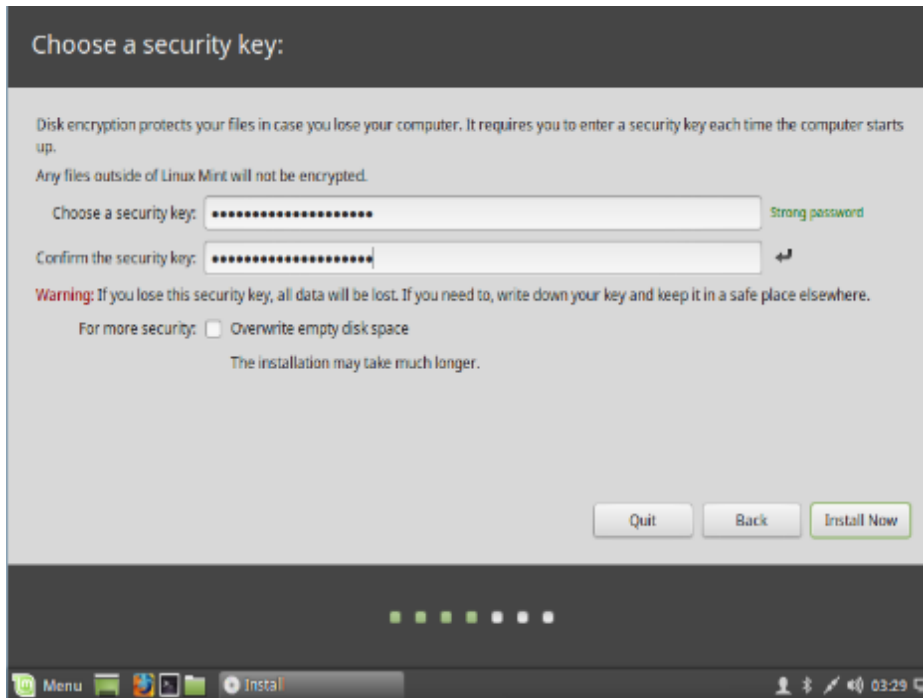
Select the box to install 3rd party software and press continue. This option installs propitiatory drivers for video cards and other hardware that are not “open source”, but are free for Linux.



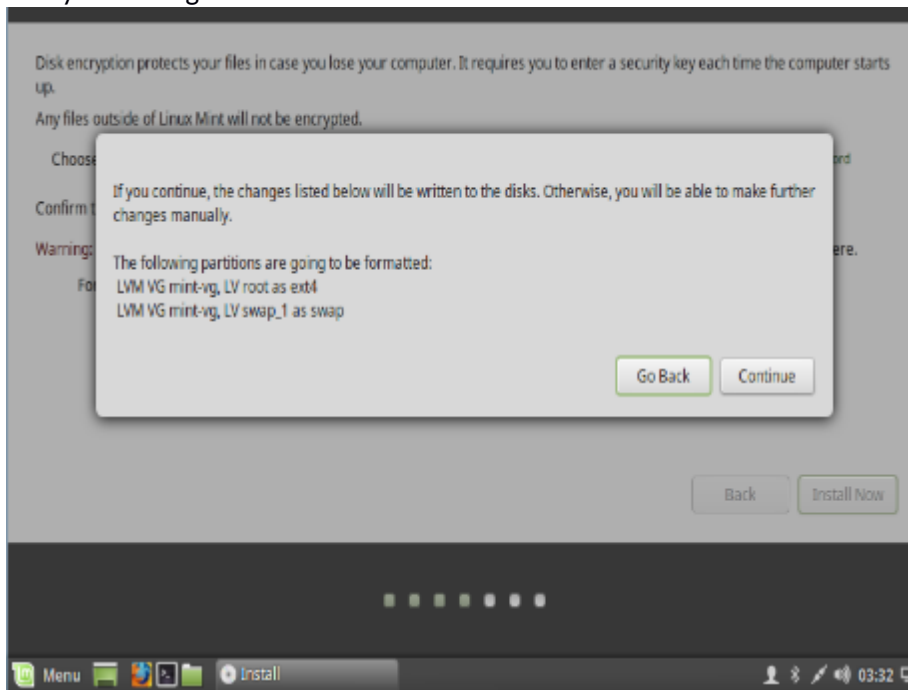
This installation will be the only OS on the computer. IT will erase all the data. You backed up right? Select to encrypt the disk and use LVM. Click Install Now.



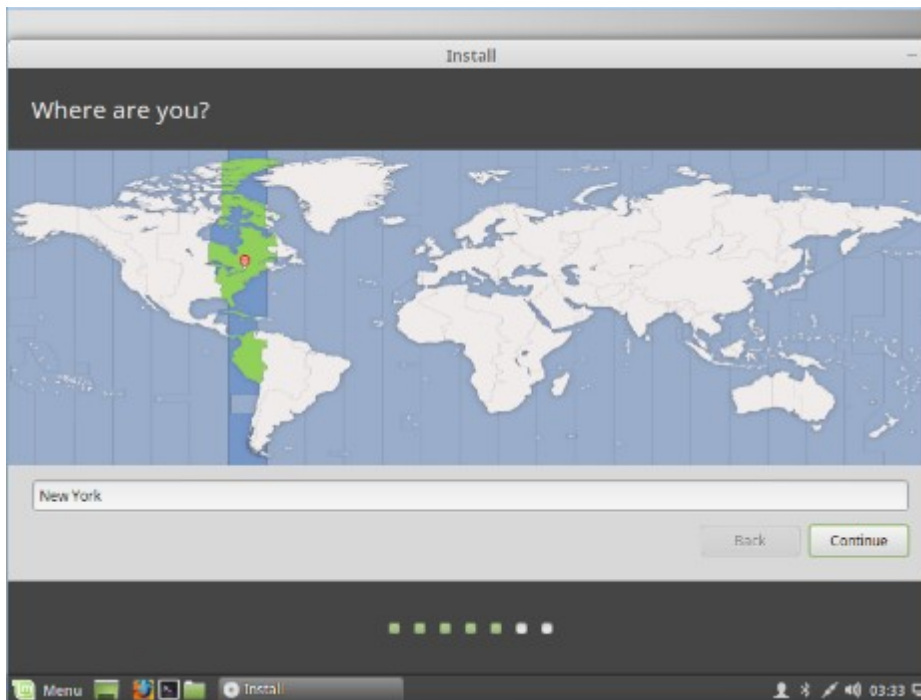
Enter your security key for the hard disk. Use a long phrase and add numbers and special characters. This is a “password” you will enter every time you boot your computer. Overwrite empty space if you wish to make it extra secure and have extra time. Click Install Now.



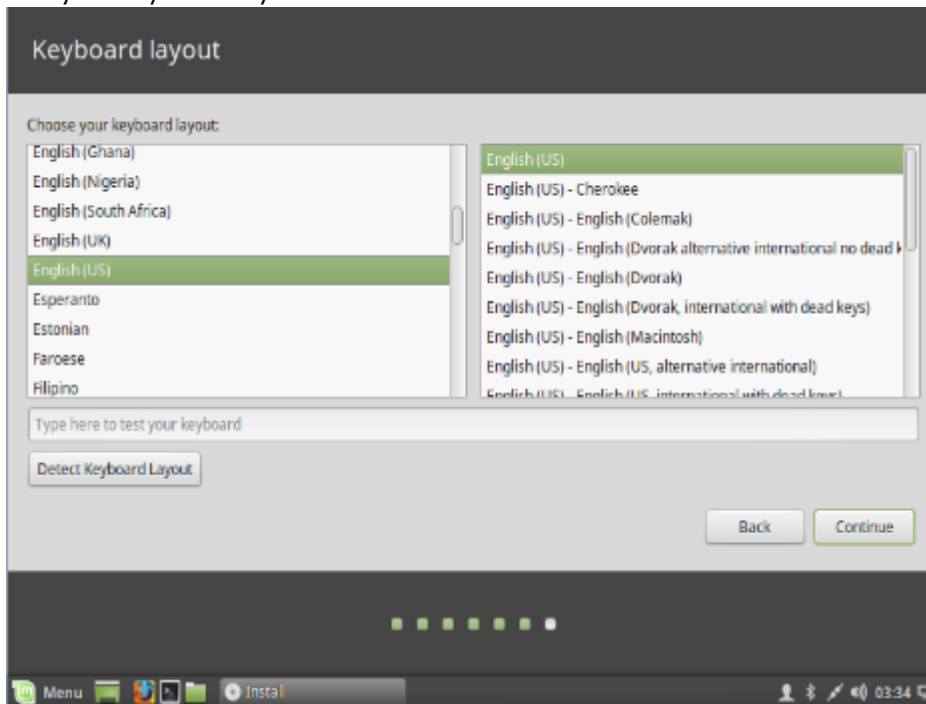
Verify the changes and click Continue



Select Location - used for time zones.

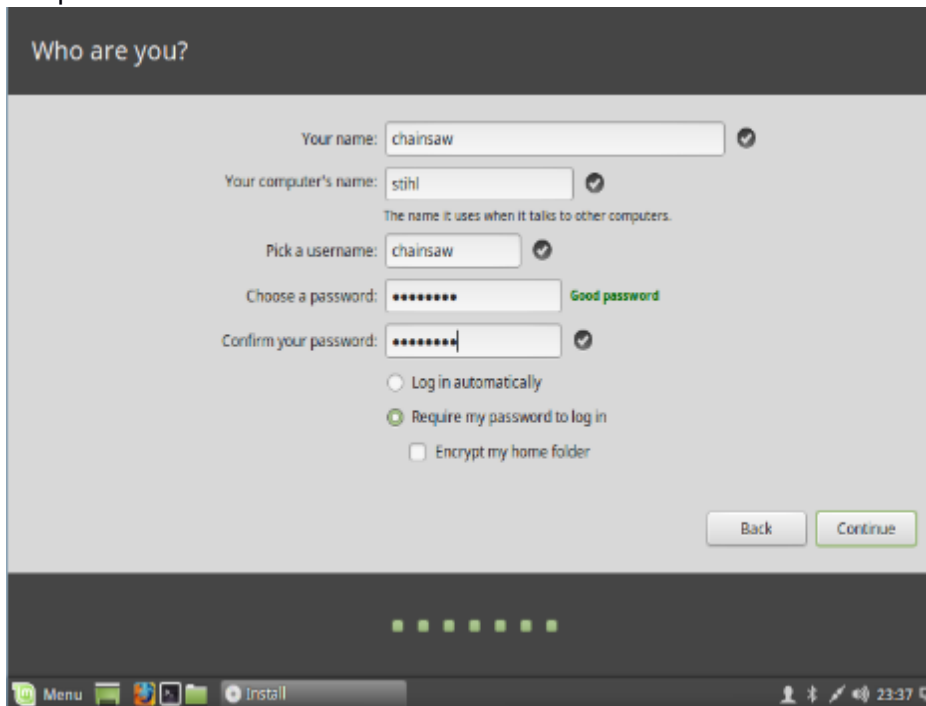


Pick your keyboard layout



Enter your details. Use short, non-descriptive computer names.

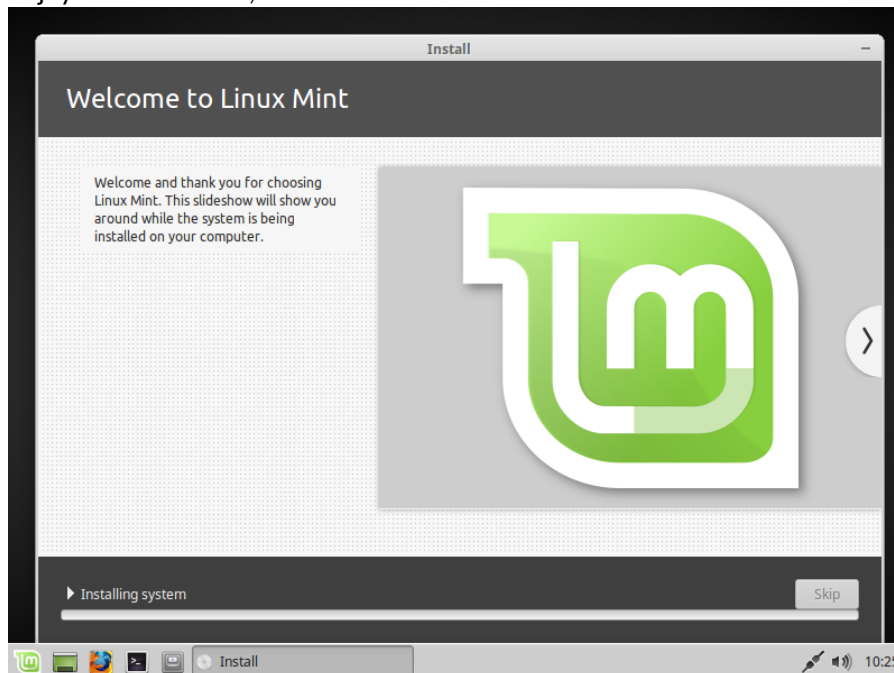
Don't bother encrypting your home folder since the entire workstation is encrypted, unless you plan to share this computer with other users.



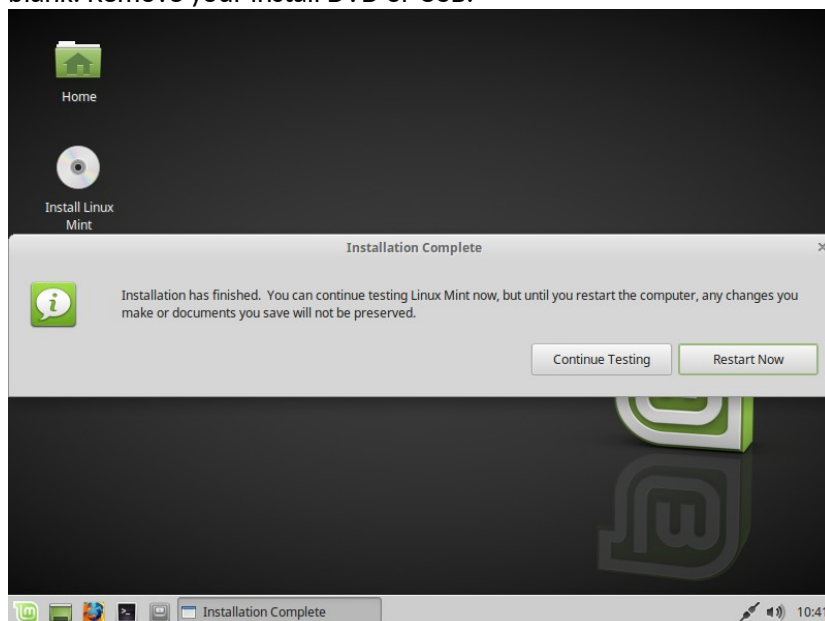
Installation Begins

The install will download additional software as needed

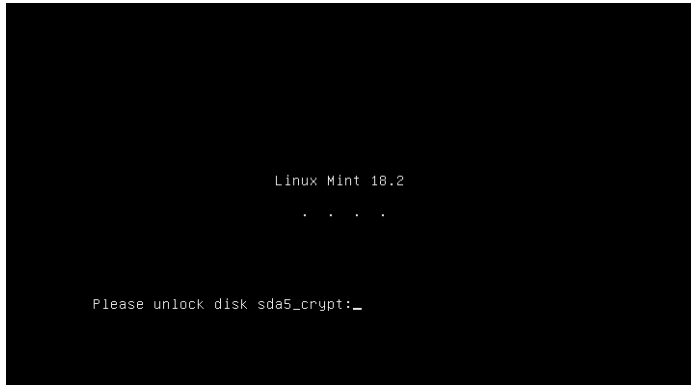
Enjoy the slide show, this takes about 15-20 minutes.



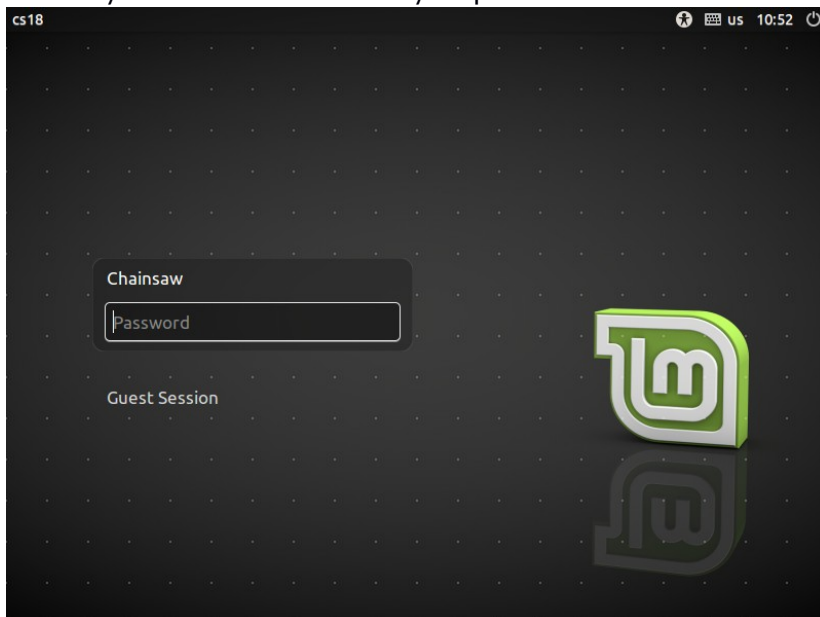
When it finished, click Restart Now. If the screen saver comes up, the user name is 'mint' and the password is blank. Remove your install DVD or USB.



On Boot, enter your Security Key to access your encrypted drive. If your screen goes black, just type the password and press enter.



Click on your username and enter your password

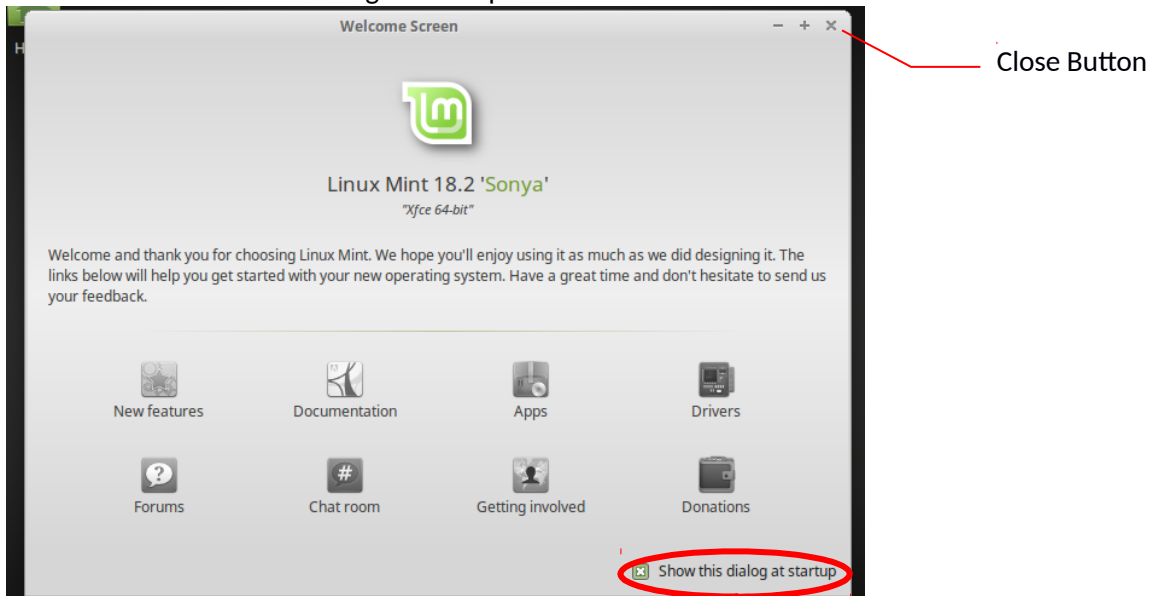


Congratulations, you have installed Linux Mint 18!

3. Initial Setup

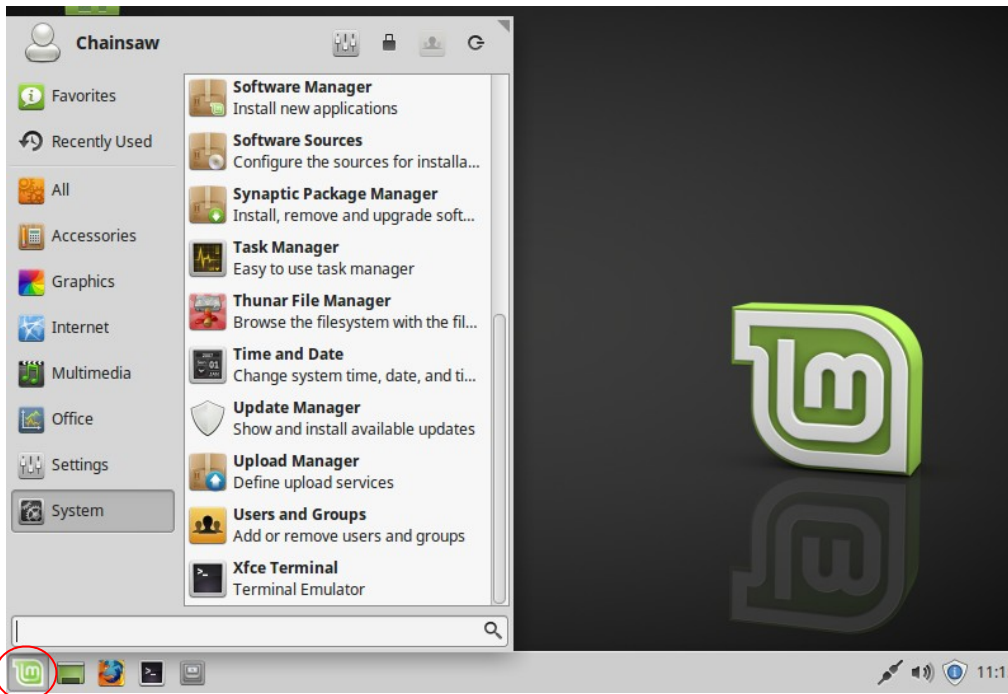
Drivers

Click drivers and select any drivers needed for your hardware. Apply changes and restart if needed. Log back in then uncheck “Show this dialog at Startup” and close the welcome screen.

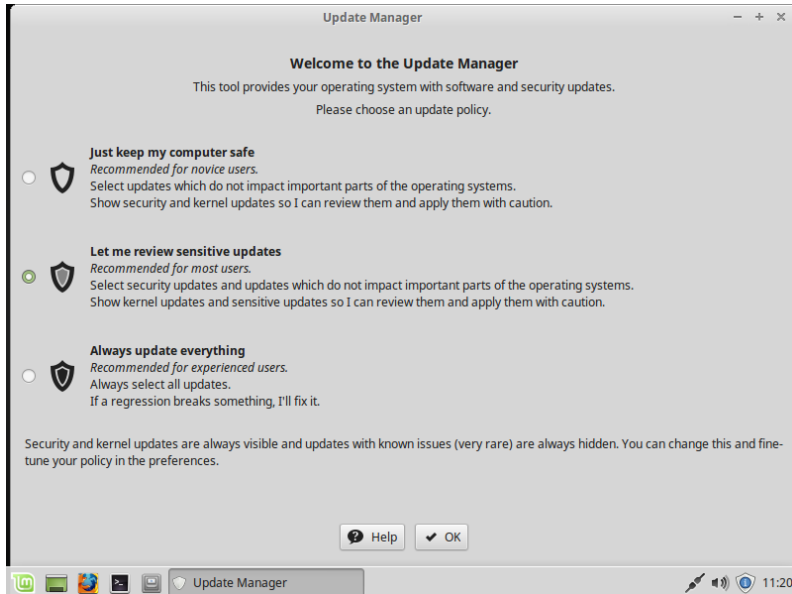


Updates

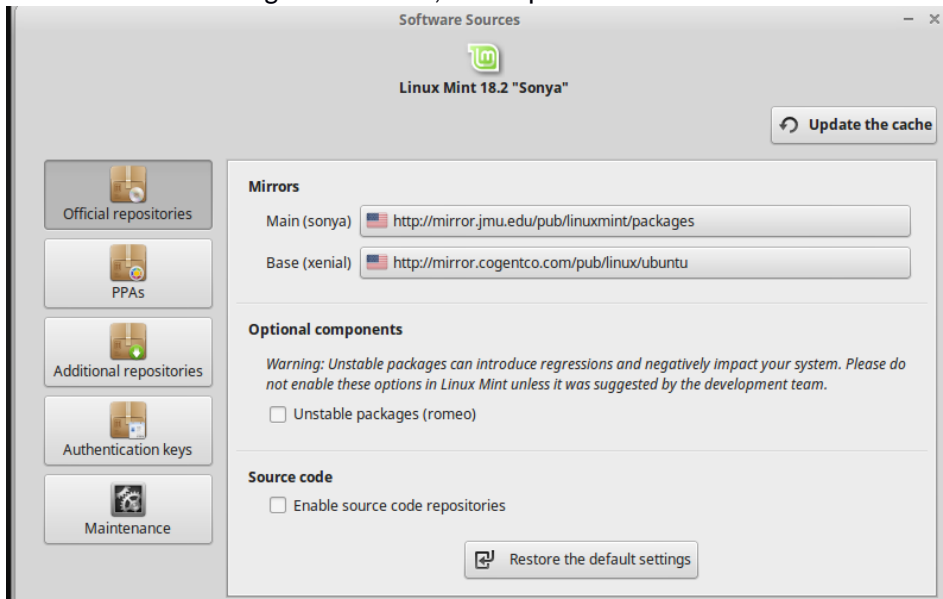
Update the system by going to Menu> System> Update Manager. You will need to scroll down to see the entire list.



Choose an update policy and click Ok. The middle “Let me review sensitive updates” policy is recommended for our workstations.

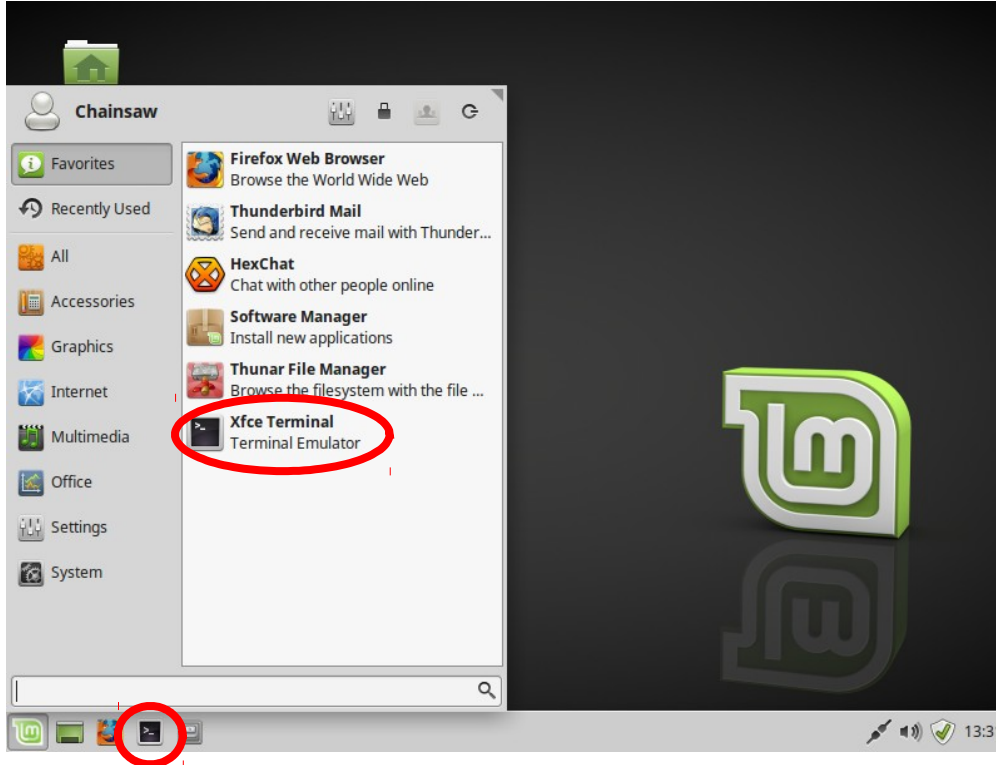


Press ok to “switch to a local mirror”. Click on the Mirrors buttons that have web links to select a faster site. It will take a minute to test the speed of all the mirror sites. Chose the best for you. Do this for both Base and Main mirrors. After selecting both mirrors, Click Update the Cache.



Once the cache is updated, close the Software Sources window. Click Install Updates to install the update manager update. When that is done, click the Install Updates a second time. Once you see the green checkmark in the lower right, your system is up to date. Updates that don't fit your policy may still show in the update manager. This is part of the “let me review” policy. Don't select any of these unless you know you need them. Close the Update Manager.

The rest of these steps will use the terminal command line. To open the terminal, click the terminal icon at the bottom or in the menu



We will use the “sudo” command often. Sudo allows us to run commands with administrator or “root” privileges. It will ask you for your password and remember it for about 10 minutes. You can copy and paste into the terminal window using Shift-Control-V to paste and Shift-Control-C to copy. Copy and paste one command line at a time and hit enter to execute the line.

Change to updated Adobe Flash.

The flash that comes with Mint is an older version and not updated quickly. This will install the latest version that is kept up to date. In a terminal window:

```
sudo apt-get install flashplugin-installer
```

Enable the firewall

```
sudo ufw enable
```

Add Graphical firewall manager

```
sudo apt-get install gufw
```

Run a full update. This is more thorough than the graphical Update Manager we used earlier.

```
sudo apt-get update
sudo apt-get -y upgrade
sudo apt-get -y dist-upgrade
```

If it asks you about overwriting “issue” files, answer Yes this time. In the future, answer No.

Install multimedia codecs

The restricted extras package will install most of the essential codecs for playing formats like mp3. It will also install the Microsoft fonts.

```
sudo apt-get -y install ubuntu-restricted-extras
```

Add your user to the USB groups

This is needed for accessing your USB connected rigs. \$USER will use our username in the command.

```
sudo usermod -a -G dialout $USER
sudo usermod -a -G tty $USER
sudo usermod -a -G audio $USER
```

If you plan to use VirtualBox to run other operating systems on your Linux machine, you also need to add yourself to the vbox usergroup for USB access to work.

```
sudo usermod -a -G vbox $USER
```

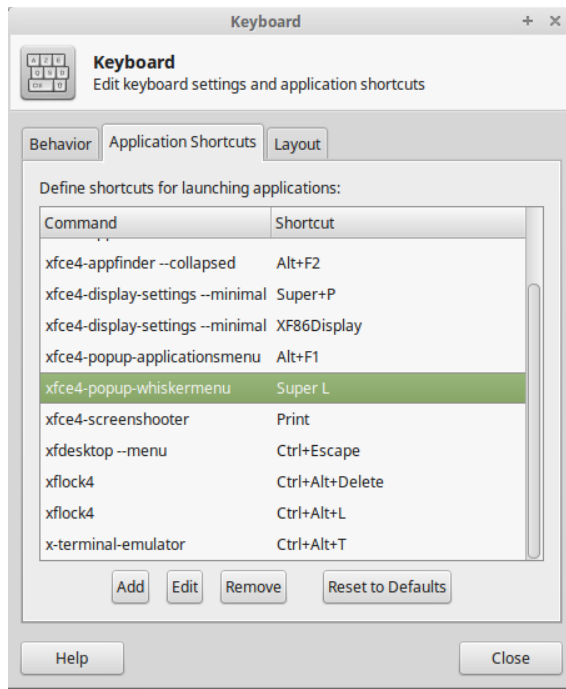
Group changes don't go into effect until after you logout or reboot.

Lock Screen Keyboard Shortcut

On Windows 7 & 10, WindowKey-L locks the screen. On Linux Mint, this brings up a debugger. This step changes the WindowKey-L to lock the screen. Mint calls this key “Super”.



Go to Menu>Settings>Keyboard> Application Shortcuts. Delete the entry for Super L. Then find ‘xflock4’ in the list and click edit. Click ok to keep the program, then press Super-L to set the new key combination.



Clean up

Clean up the system and reboot

```
sudo apt-get autoclean  
sudo apt-get autoremove  
sudo reboot
```

Your base system is now ready to customize.

4. Customize Mint

This phase will add your personal information to your Mint install. Connect your USB drive with your back ups and copy over your old documents, pictures, music and videos to your new folders.

Thunderbird & Enigmail

Thunderbird is the default email program for Mint, which is nice, since that's the one we want to use. We'll use the command line to install Enigmail and Gnu Privacy Assistant and make sure Thunderbird and Gnu PGP v2 is up to date.

```
sudo apt-get install gnupg2 thunderbird enigmail gpa
```

Gnu Privacy Assistant (GPA) is a key management program you can use to add & manage keys outside of Enigmail.

New Thunderbird User

If you have not used Thunderbird and Enigmail before, configure your email and setup Enigmail using the guide on Security In A Box (skip section 4.1 on installing Enigmail):

<https://securityinabox.org/en/guide/thunderbird/linux>

When you've completed the steps in the Security in a Box guide, skip down to the next section, KeePass.

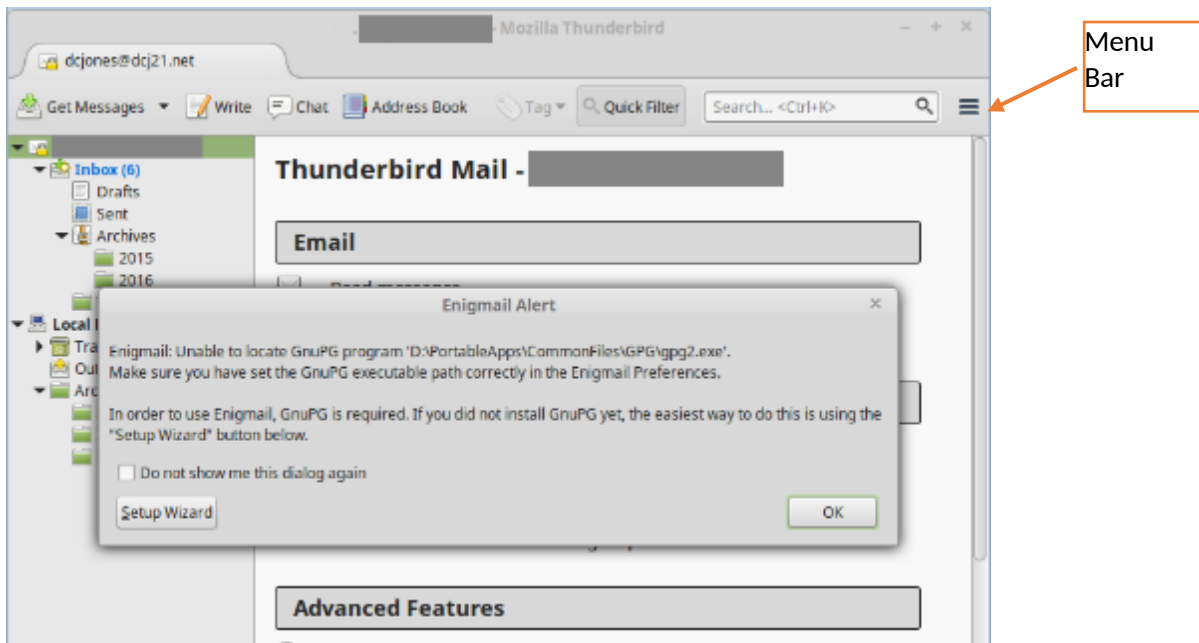
Existing Thunderbird User

If you have a Thunderbird profile to bring over, we will need to copy it to your home folder on your new Linux Mint workstation. Linux typically uses hidden folders for storing application information. Hidden folders start with a '.' (dot). Thunderbird's application information is stored in .thunderbird in your home folder.

Double click on your Home folder icon on the desktop. Press Control-h to view hidden folders. Copy your .thunderbird folder from your backup to the home folder.

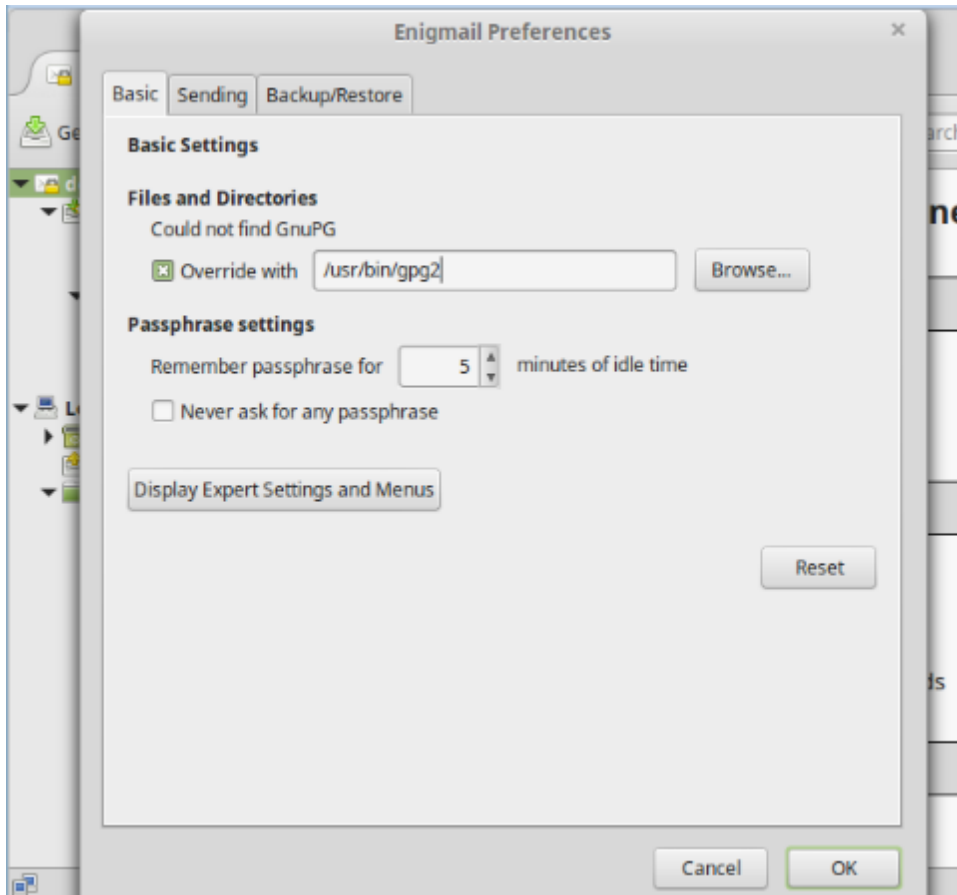


Open Thunderbird again. Enigmail might give you an alert about the location of the PGP program. If you don't get the alert, still do these steps to correct the program location. Your profile had your old Enigmail configuration information and we'll need to correct that.

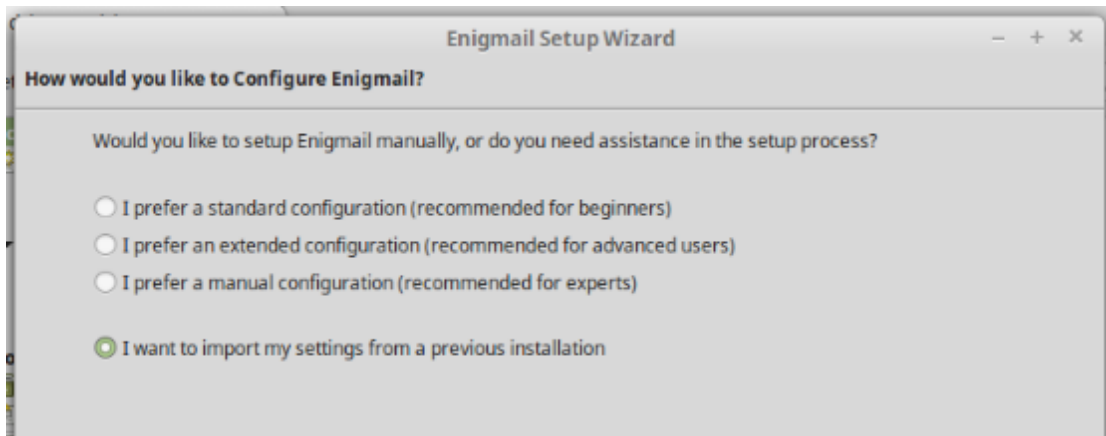


Select Enigmail>Preferences from the menu bar and change the program location to `/usr/bin/gpg2` and click OK. The menu bar is the three lines on the right.

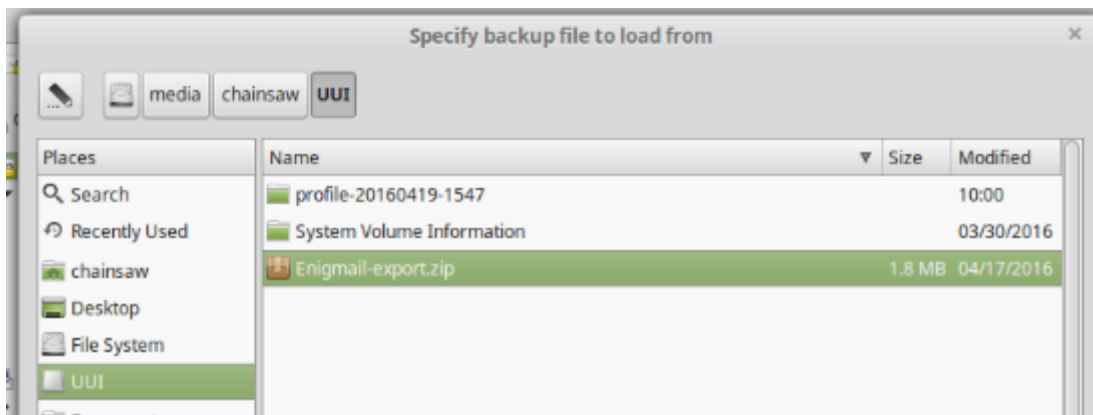
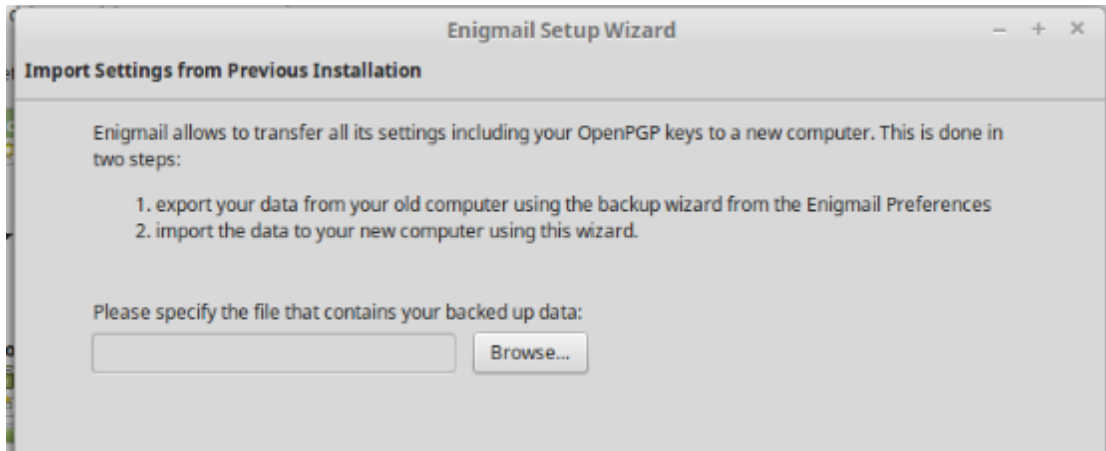
[If you are on another version of Linux, use `whereis gpg2` to find your program.]



Now we can import your Enigmail Keys. Go to Enigmail>Setup Wizard from the menu bar and Choose “I want to import my settings...” and click OK



Click Browse and select your Enigmail backup.



Once the backup is loaded, go to Enigmail> Key Management to see that your keys were loaded. Your private key should be in bold.

Now you can catch up on all the email you've missed over the past few days.

KeePassX

KeePassX is an excellent password manager. It's better suited for Linux than KeePass2 and includes a AutoType feature that can be used to fill out web page log ins. The database is portable with all KeePass version 2 databases and can be used on Windows. Install KeePassX

```
sudo apt-get install keepassx
```

KeePassX is now installed under the Menu>Accessories.

If you used KeePass before, copy your old KeePass database file from your USB to your Documents folder. After it finishes copying, double click the database and enter your password.

New users of KeePassX should open KeePassX and create a new database. The default options are fine.

Close KeePassX.

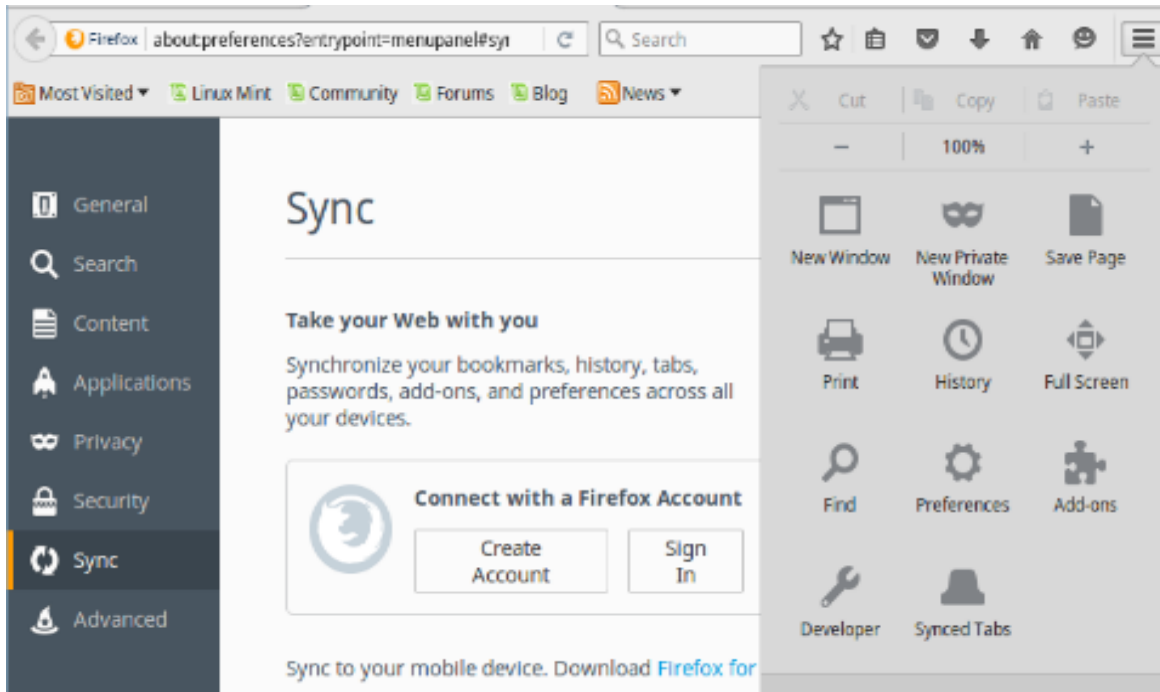
To read more about KeePassX , visit their website: <https://www.keepassx.org/>

Firefox

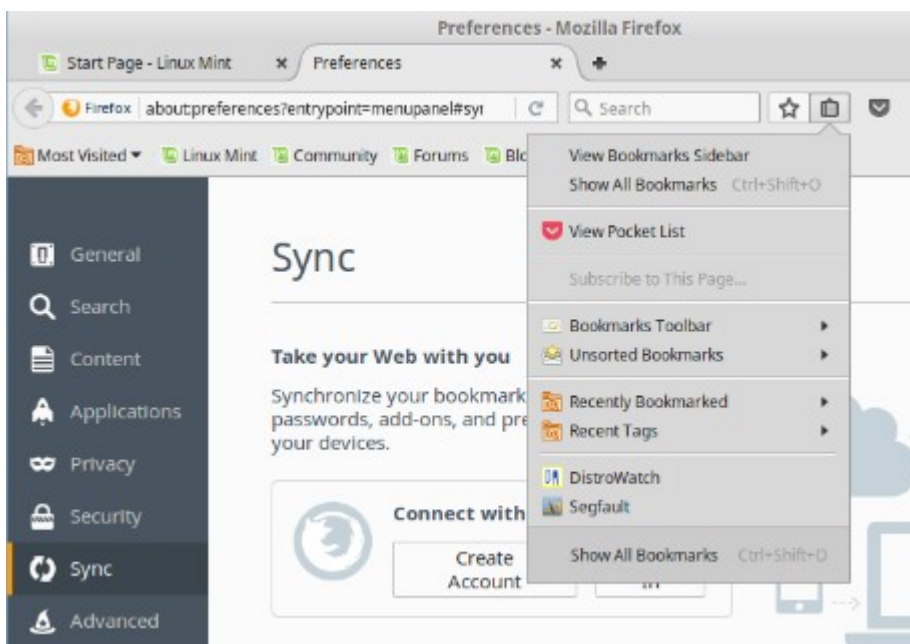
Firefox is the default web browser in Linux Mint.

Bookmarks

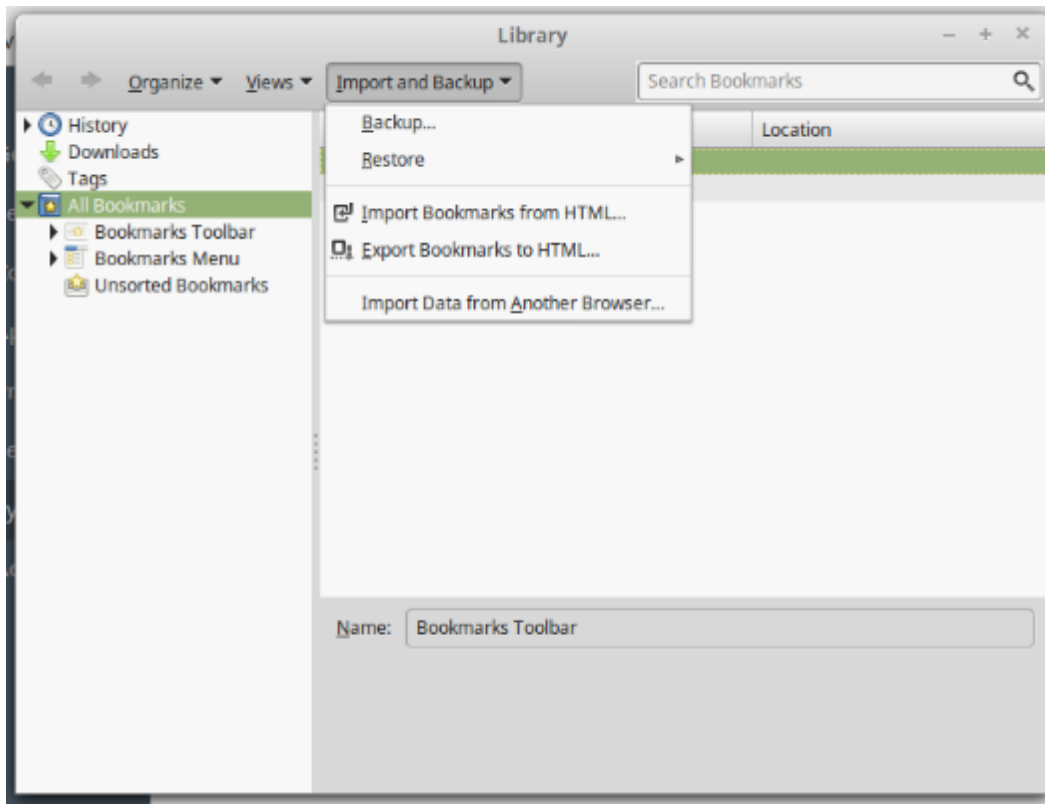
If you used Firefox's Sync before. Go to Menu>Sign in to Sync and sign in. After a few minutes your bookmarks and installed Add-ons will be re-installed.



If you exported your bookmarks on your old computer, click on the Bookmark button and Show All Bookmarks.

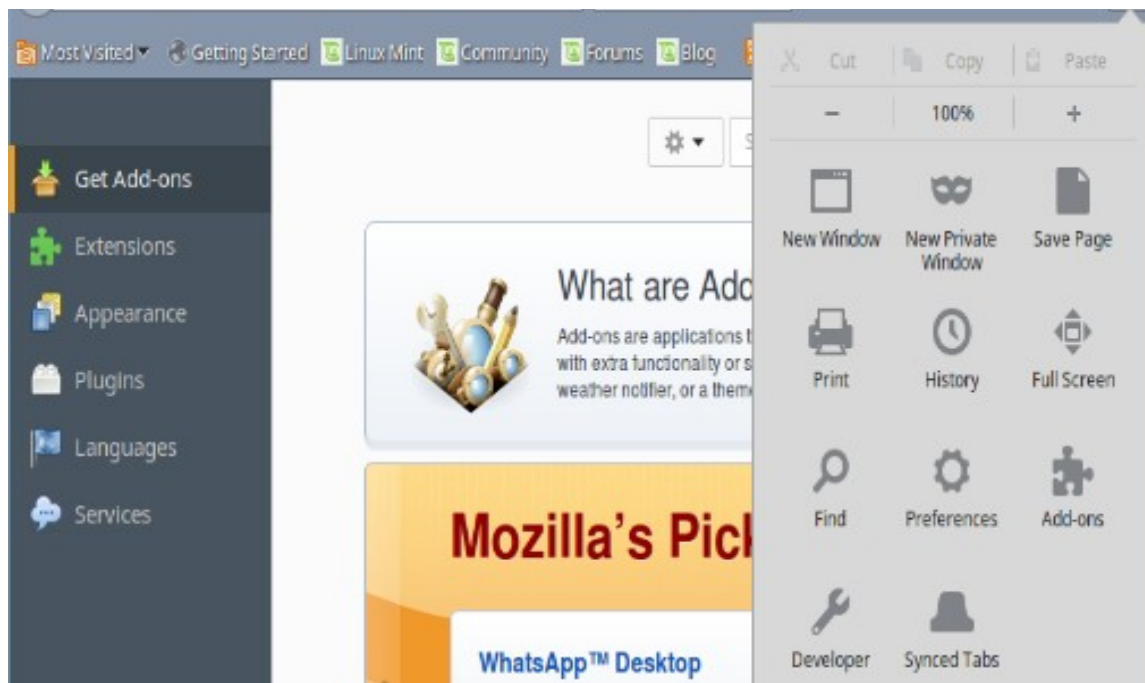


Then click on the Import and Backup button. Choose restore if you used Firefox backup to back up your bookmarks and Import Bookmarks from HTML if you did an export on your old computer.

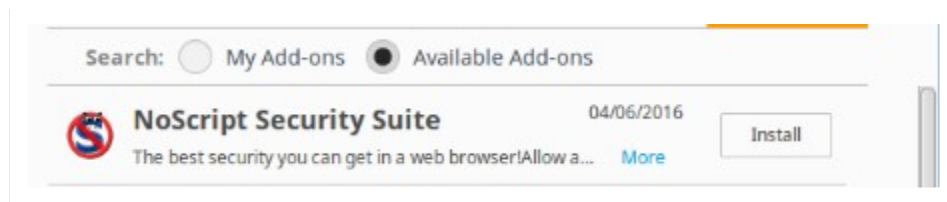


Once your bookmarks are restored, the next step is to add a few Add-ons that improve security and privacy - NoScript and Ad Blocker Plus. If you used the Sync feature, you may have NoScript and AdBlocker Plus already. You can skip installing them again.

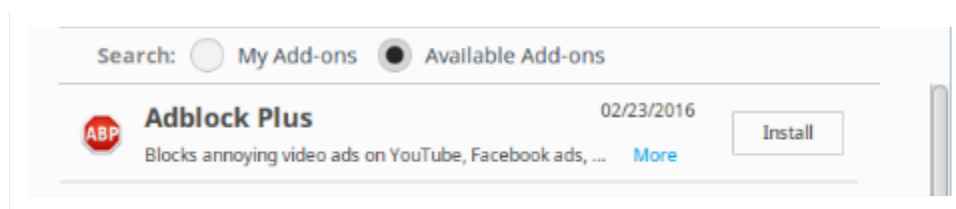
Go to Menu>Add-ons. Then click Extensions.



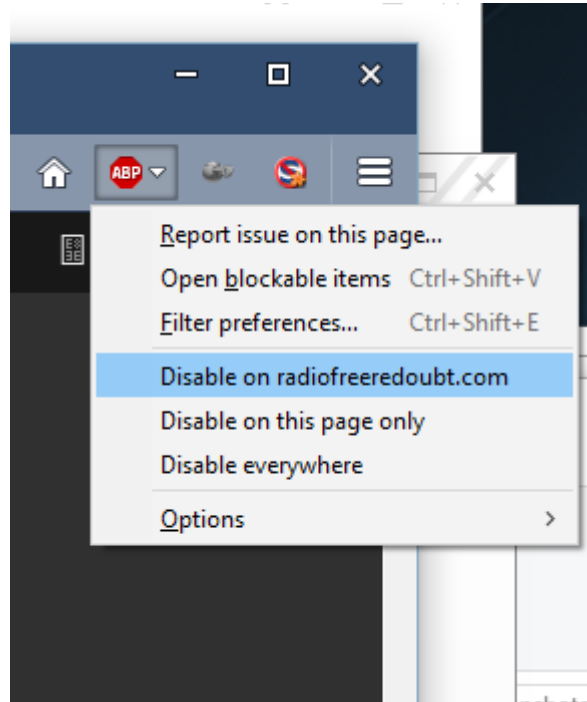
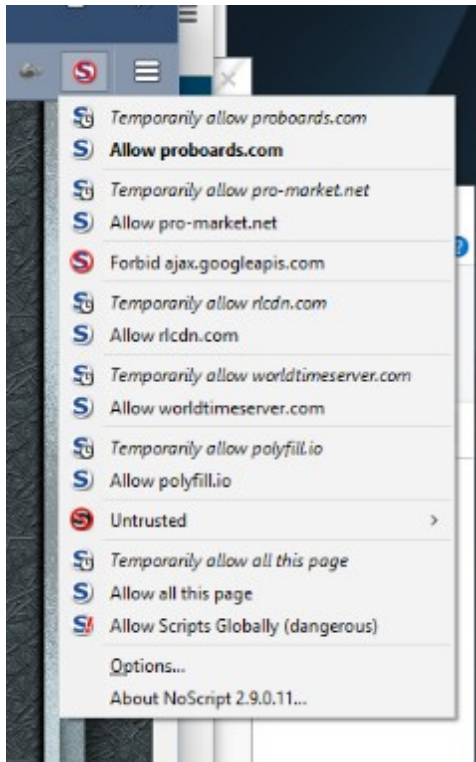
Search for NoScript and click install



Search for Adblock Plus and click install.



Note: NoScript will stop scripts from running and will break some sites. If you trust a site, you can “allow it” permanently or just temporarily. Adblock can also sometimes cause page loading issues. You can disable ABP on sites to see if it fixes any issues.

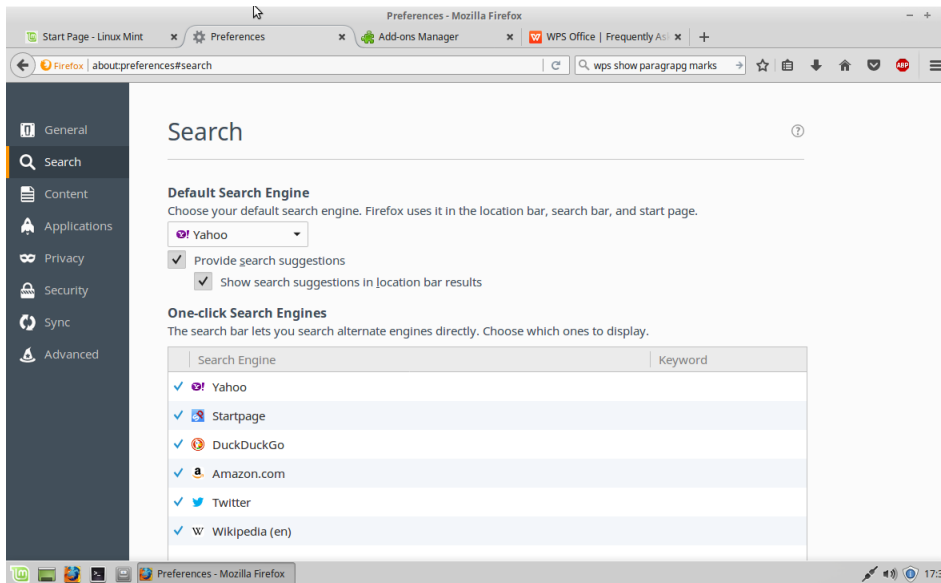


[Note: With KeePassX's AutoType feature, we don't need to have a Firefox add-on for password management]

Change the Search settings

The default search in Firefox is set to Yahoo, which shows lots of spam ads. Let's change it to DuckDuckGo

Go to Menu>Preferences and then click on Search.



Change the Default Search Engine by clicking on Yahoo near the top and selecting DuckDuckGo or StartPage. Both are good privacy conscious search engines.

Then in the One-Click section select Yahoo and click on Remove at the bottom of the screen (may need to scroll down).

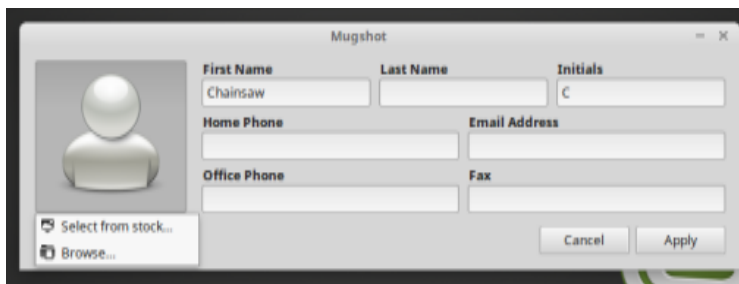
Your Firefox is configured.

User Personalization

To add a picture as your avatar when logging in, Go to Menu then click at the top on your username.



Then click on the default head picture. Select your new picture from Stock or browse for your favorite.



VPN

The next step is to setup your VPN service. Most Linux VPN services are going to use the OpenVPN client, which is already installed. Your VPN service will provide instruction on setup in Linux Mint. If they don't show Mint, choose Ubuntu. Worse case, look for OpenVPN instructions.

Conky

Conky is a tool for Linux that displays information on the desktop of our workstation. Conky is very customizable and we will use it to display our world clock, AmCON Status and some system stats. To learn more about conky, visit the links below.

<https://help.ubuntu.com/community/SettingUpConky>

<https://www.linux.com/news/experts-guide-configuring-conky>

Install conky and download my custom conky file which has been converted to the new LUA format.

```
sudo apt-get install conky-all lm-sensors
```

To download my conkyrc file, visit my new website for the location and download command.

<https://chainsawprivacy.wordpress.com/myfiles/>

Edit the time zone info and network interfaces and add more lines if you wish. The conkyrc file shows stats on the default Ethernet port (eth0) and Wifi (wlan0). You may need to edit these lines if you have additional interfaces or different numbers. Run “ip link show” in a terminal to see your interface names.

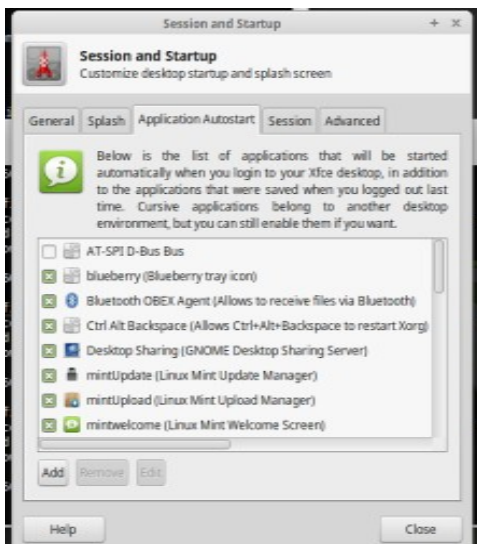
```
xed ~/.conkyrc
```

Save the file and close xed. To run conky and test your conkyrc file:

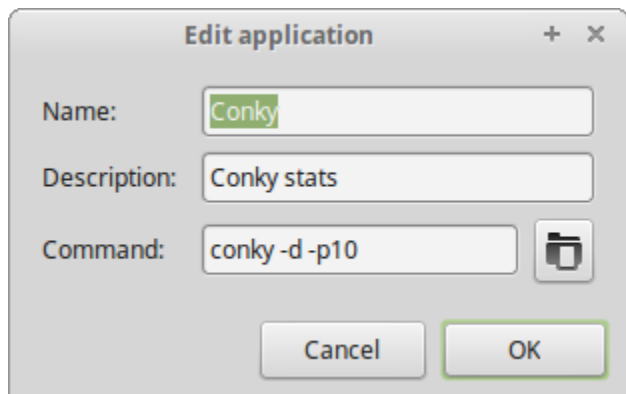
```
conky
```

You can open and edit the .conkyrc file and each time you save it, the program will update with the new version automatically.

Now, make Conky load on startup. Go to Menu > Settings > Session and Startup. Click Application Autostart then Add.



In the dialog box give the name as "Conky" and the command as `conky -d -p10` . This makes conky pause 10 seconds before starting in daemon mode (background), which allows the desktop to fully come up.



Click Ok, then close the Session and Startup screen.

Your Linux Mint Workstation is now personalized.

5. Add Radio Tools

Install fldigi

Fldigi is a digital communication tool for our radios. <http://www.w1hkj.com/>

Make sure you added your username to the groups dialout, tty, and audio as directed at the end of Section 3. You should see dialout, tty, and audio listed in the output of this command:

```
groups
```

Fldigi is easy to install on Linux Mint. Kamal Mostafa maintains an up to date repository.

```
sudo add-apt-repository ppa:kamalmostafa/fldigi  
sudo apt-get update  
sudo apt-get install fldigi flmsg
```

Fldigi will be under the “Internet” application menu.

Load Fldigi and configure your rig. Make sure your rig is up before loading Fldigi so the interfaces will show in Fldigi . Once you are done, close Fldigi . If you are not sure on what device is your sound card, run aplay to see your audio devices:

```
aplay -l
```

For my ICOM 7200, The Port audio was the only USB Audio CODEC and the Control was Hamlib with the device set to - /dev/ttyUSB0

Install the AmRRON forms in to the custom forms folder: (The wget is all one line)

```
cd ~/Downloads/  
wget https://amrron.com/wp-content/uploads/2014/11/AmRRON-Custom-Forms-V3.zip  
unzip AmRRON-Custom-Forms-V3.zip  
mkdir -p ~/.nbems/CUSTOM  
mv AMRRON* ~/.nbems/CUSTOM
```

Read more on the AmRRON Forms page. <https://amrron.com/amrron-forms/>

CHIRP

CHIRP is used to program radios.

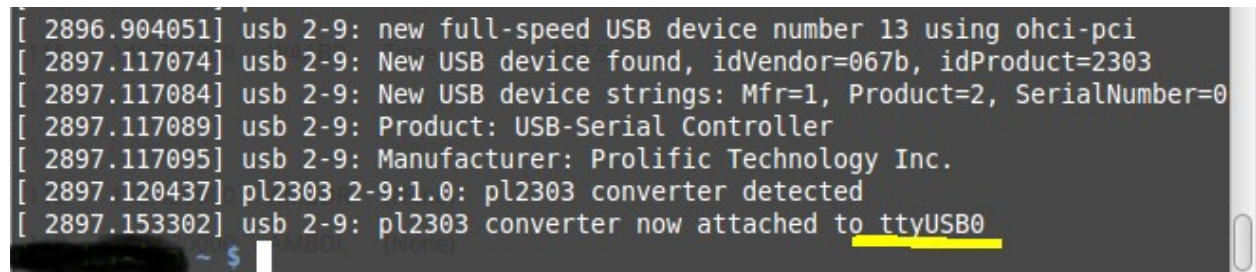
<http://chirp.danplanet.com/projects/chirp/wiki/Home>

```
sudo apt-add-repository ppa:dansmith/chirp-snapshots
sudo apt-get update
sudo apt-get install chirp-daily
```

Chirp will be under the “Other” application menu.

Connect your radio with USB and then run dmesg to see what device connection it used. It will be the last item.

dmesg

A terminal window showing the output of the dmesg command. The output lists several log messages from the kernel. The last message, '[2897.153302] usb 2-9: pl2303 converter now attached to ttyUSB0', has 'ttyUSB0' highlighted in yellow. The prompt '~ \$' is visible at the bottom left of the terminal window.

```
[ 2896.904051] usb 2-9: new full-speed USB device number 13 using ohci-pci
[ 2897.117074] usb 2-9: New USB device found, idVendor=067b, idProduct=2303
[ 2897.117084] usb 2-9: New USB device strings: Mfr=1, Product=2, SerialNumber=0
[ 2897.117089] usb 2-9: Product: USB-Serial Controller
[ 2897.117095] usb 2-9: Manufacturer: Prolific Technology Inc.
[ 2897.120437] pl2303 2-9:1.0: pl2303 converter detected
[ 2897.153302] usb 2-9: pl2303 converter now attached to ttyUSB0
~ $
```

The run Chirp and set your Radio port to what you saw on dmesg. You may need to add a “/dev/” in front of it. This was my BaoFeng cable. Drivers install automatically.

Install ARDOP

Thanks to Foxtrot Kilo 01 for providing these ARDOP instructions!

Check the AmRRON Boards for updates.



Introduction and housekeeping

Note that the below instructions and guide borrows very heavily from Delta-10's posting on AmRRON Forum under the HF Digital ARIM/ARDOP posting <http://amrron.proboards.com/thread/1387/ardop-arim> (page 6, 7 Jul 2017 at 23:46),

Pre-Installation work and assumptions!

Verify the current version of ARIM and update the version number used below. Open the following page:

www.whitemesa.net/arim/arim.html#inst

You can also check the AmRRON Forum in the HF Digital page ARDOP/ARIM for the latest posting by Delta-10 for the current version.

ARIM Installation

Download the required libraries to compile ARIM:

```
sudo apt-get install build-essential
sudo apt-get install ncurses-dev zlib1g-dev
```

Download ARIM (make sure it's the current version):

```
cd ~/Downloads
wget http://www.whitemesa.net/arim/src/arim-0.34.tar.gz
tar xvf arim-0.34.tar.gz
mv arim-0.34 ~/
```

Make the program:

```
cd ~/arim-0.34
sudo ./configure
sudo make
sudo make install
```

Run ARIM for the first time:

```
arim
```

This will create a new directory under your home drive called arim.

ARDOP Install and Configure

```
cd ~/Downloads
wget http://www.cantab.net/users/john.wiseman/Downloads/Beta/ardopc_64
sudo chmod +x ./ardopc_64
mv ./ardopc_64 ~/arim-0.34/
```

Now we need to create a new file for ARDOP/ARIM functionality. Make sure your Signalink modem, USB Radio Connection, or equivalent is plugged in and running, then:

```
cd ~/arim-0.34
./ardopc_64
```

Press ctr-c to stop ARDOPC. Look in the text for the area that says card ?,ID 'CODEC'USB Audio CODEC. A couple of lines down will be a line that starts with "hw:x,y USB Audio" note the values given. Open the xed text editor with a file name of .asoundrc.

```
cd ~
xed .asoundrc
```

In this document type the lines below:

```
Pcm.ARDOP {
    Type rate
    slave {
        pcm "hw:1,0"
        rate 48000
    }
}
```

You will need to replace the pcm "hw:1,0" with the values you located above.

Save the file and exit.

ARIM Configuration

```
cd ~/arim
xed ./arim.ini
```

Edit the first [tnc] section:

ipaddr = change 'localhost' to 127.0.0.1

port = 8515

mycall = your fcc call sign, note that you may add a 'station' number if you wish.

gridsq = your Maidenhead grid square. Note you can browse to:

http://www.levinecentral.com/ham/grid_square.php to find it. Can be left blank.

name = tnc-1 (if you want to change this, it is the text seen in the beacon)

squelch = set to 3

busydet = set to 3 (these numbers by testing have shown to be more responsive to busy channels and decodes into the noise better)

The second [tnc] section...ignore. Arim allows up to 10 tnc configs for those who have multiple systems.

In the [arim] section:

mycall = your call as above

send-repeats =3 (this is the number of auto retries in fec mode)

pilot-ping = 3

max-file-size = change to 8196 (this is the max avail for now)

Last section [ui]:

last-time-heard = if UTC it will show as such, I like ELAPSED better as it will show how long ago you heard it. your choice

mon-timestamp = TRUE is the default for UTC time on the monitor screen, FALSE value will be your local time.

Save the file and exit.

Create a desktop shortcut to open ARIM

Right-click on your desktop and select Create Launcher.... Since this application runs under a terminal we will need to open the xfce terminal with the program opening within it.

Name: ARIM

Comment: (enter what you will or leave blank).

Command: `xfce4-terminal -e /home/(your username here)/arim-0.34/arim`

Working Directory: `/home/(your username here)/arim`

Icon: (choose one if you like).

Options: select 'Run in terminal'

Click Create to finish. Then Double-click on your desktop icon for ARIM. The first time you will get a prompt asking you to do one of three options:

- Launch Any Way
- Make executable
- Close

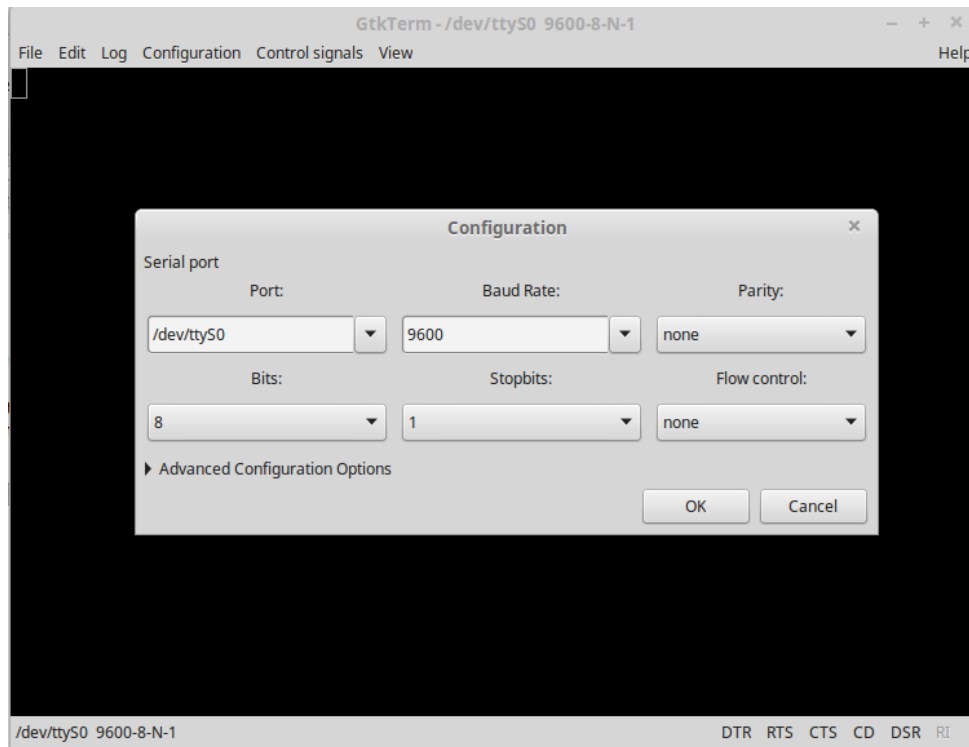
Choose 'Make executable'.

Serial Port – gtkTerm

GtkTerm is a communication program to access the serial port. You would use this to connect to your radios or modems to enter commands or connect to BBSs over phone lines or packet radio.

```
sudo apt-get install gtkterm
```

GtkTerm installs in the menus as “Serial Port Terminal” under Accessories. To set the port for connecting, click on Configuration, then Port. Click on the triangle to chose available ports.



6. Add Security Tools

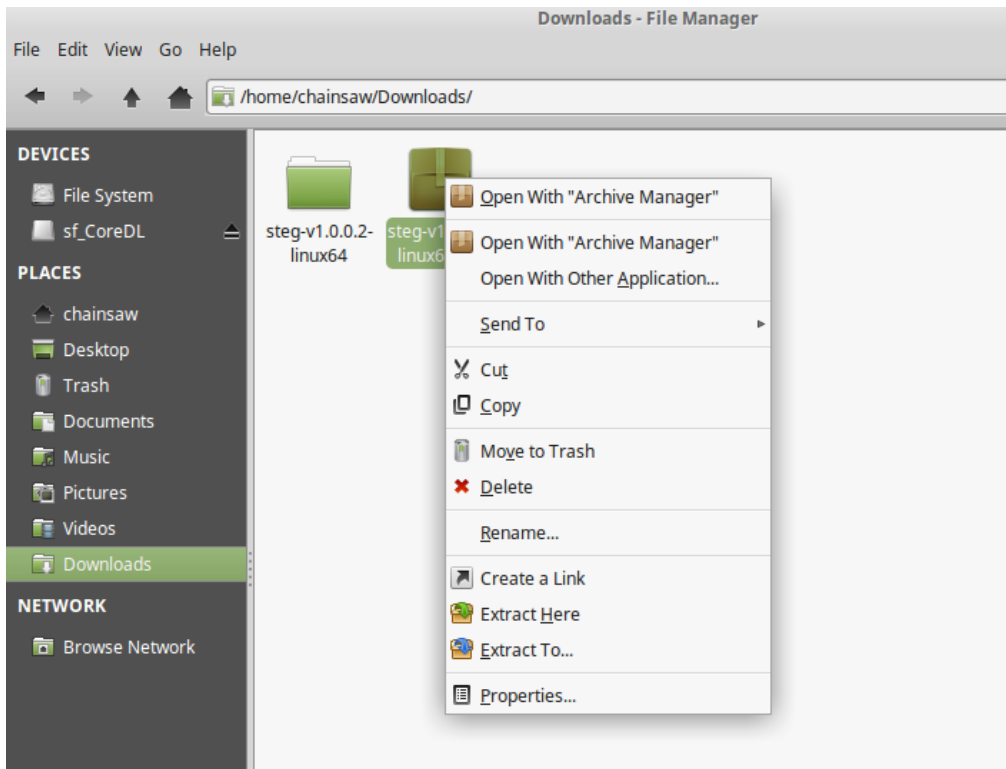
Install Steg

Steg is AmRRON's preferred steganography platform. Steganography is the process of hiding information in other files.

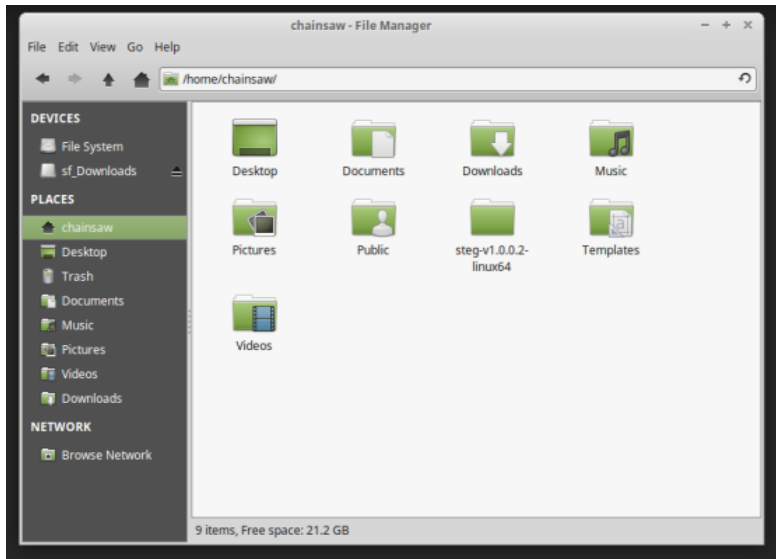
Read more on their main site - <http://www.fabionet.org/>

Download the latest Linux 64 bit version at <http://www.fabionet.org/content/steg-linux-64-bit>

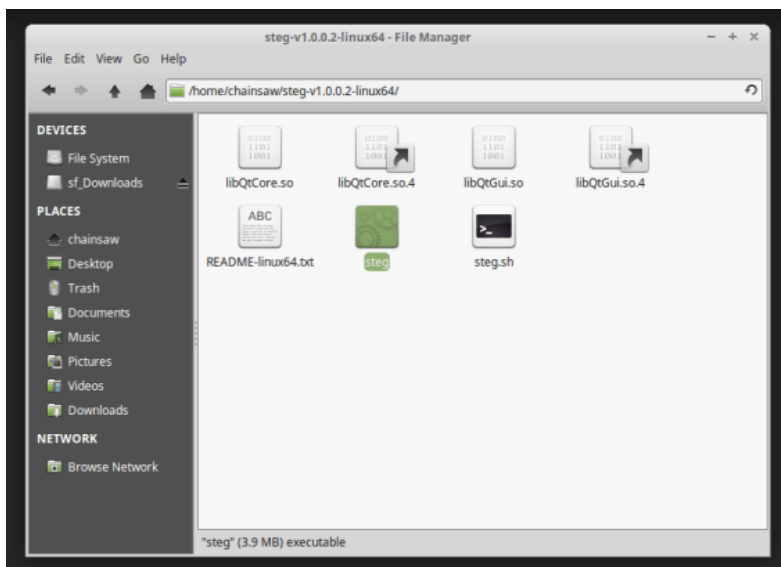
Save the file to your downloads folder. Then in the downloads folder, right click the archive and select "Extract Here".



Steg doesn't have or need an installer, but we should put it in a better location. Click on the Steg folder and drag it over to your home folder. That's the first entry under PLACES with your username next to it (mine is chainsaw). Now, click on your home folder to open it.



Open the Steg folder and double click on the Steg program, not the steg.sh



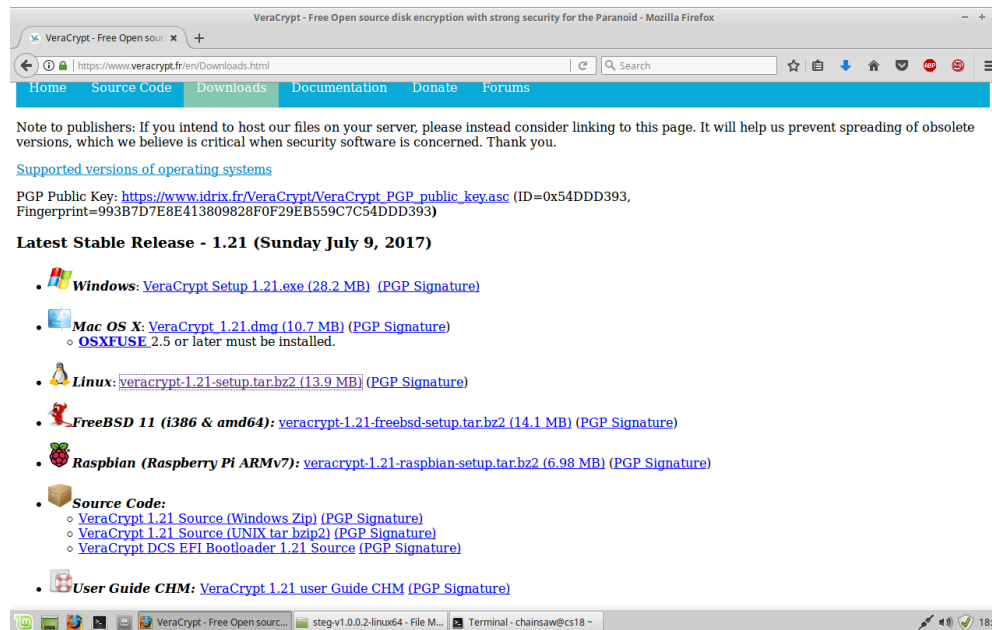
This will launch the Steg program.

Install VeraCrypt

VeraCrypt is a free open source disk encryption software for Windows, Mac OSX and Linux based on TrueCrypt 7.1a. It's the best way to create a encrypted container on a USB that can be opened on Windows.

<https://www.veracrypt.fr/en/Home.html>

Go to the Downloads section and download the Linux version.



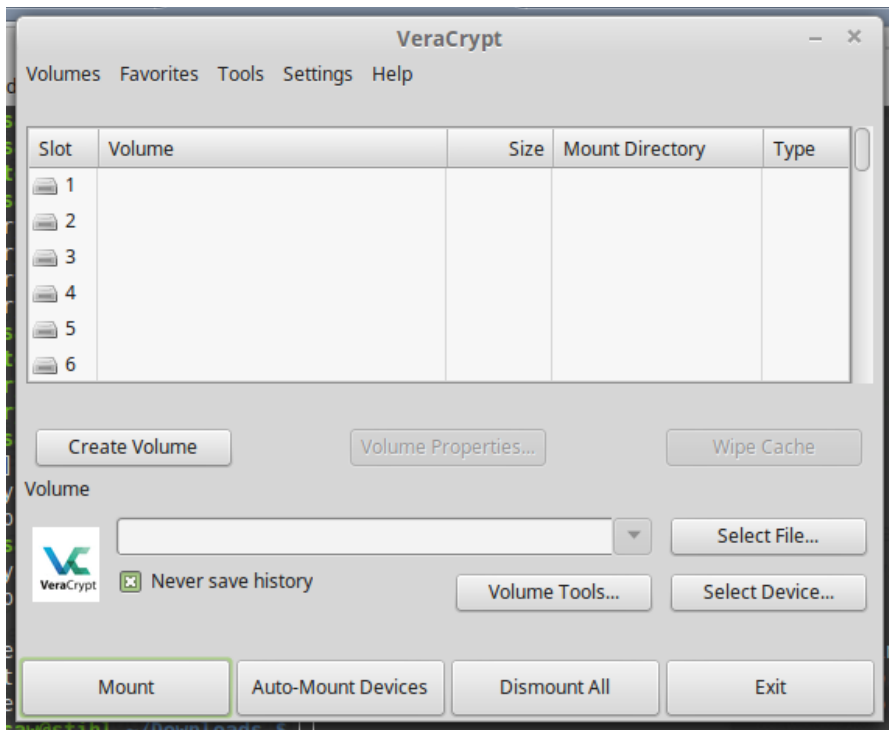
Download the Linux version to your download folder. Untar the archive and run the 64 bit GUI version.

```
cd ~/Downloads/  
tar xjvf veracrypt-1.*-setup.tar.bz2  
sudo ./veracrypt-1.*-setup-gui-x64
```

Follow the installation prompts. Choose 1 to install VeraCrypt. Press enter to see the terms and press spacebar to page through the information. Then type 'yes' to agree.

VeraCrypt will be under your accessories menu.

And runs just like the TrueCrypt or VeraCrypt you are accustomed to.



Install TOR

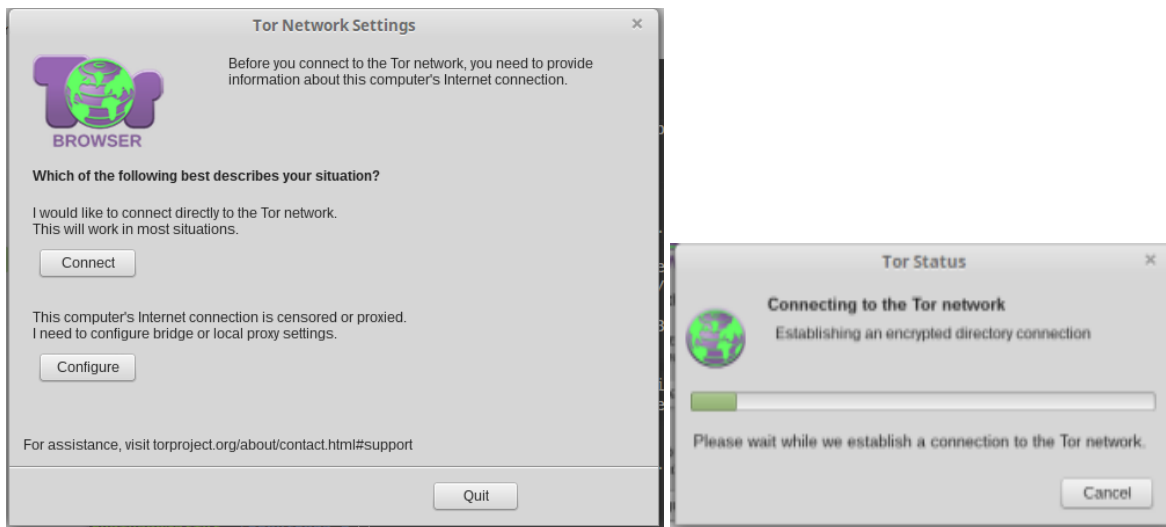
The Onion Router (TOR) is a web browser that obfuscates your access to websites and enables access to the “dark web”. <https://www.torproject.org/>

This selection installs the TOR Browser Bundle.

```
sudo add-apt-repository ppa:webupd8team/tor-browser
sudo apt-get update
sudo apt-get install tor-browser
```

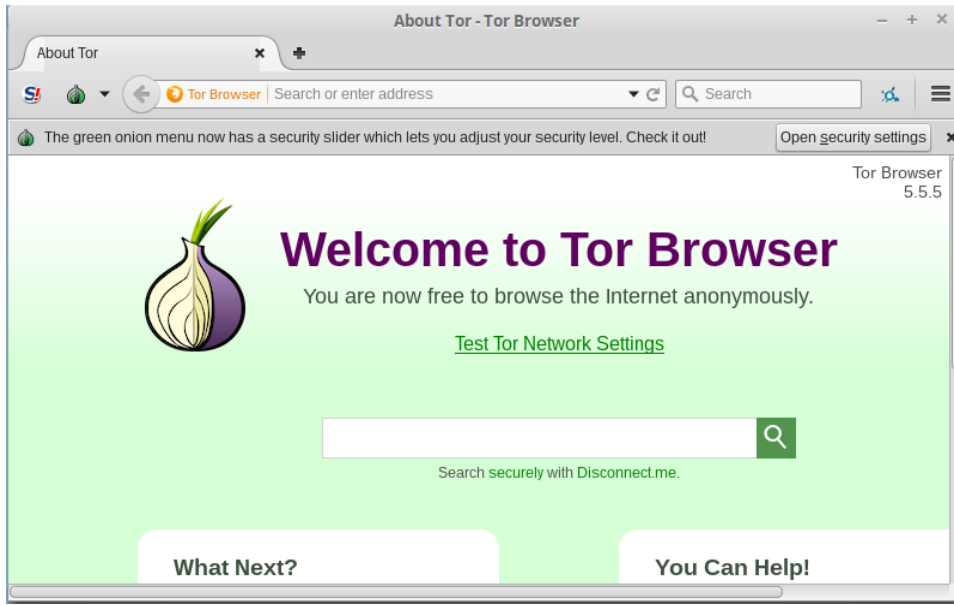
The TOR Browser is now installed under Internet in the Menu.

Press Connect and wait for the connection to be established.

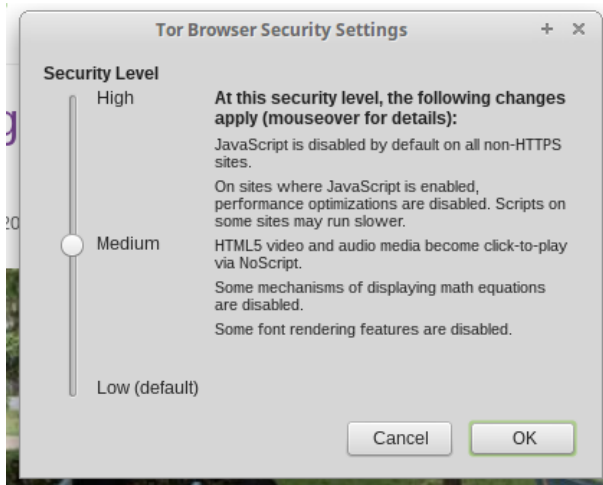


Then the browser will open.

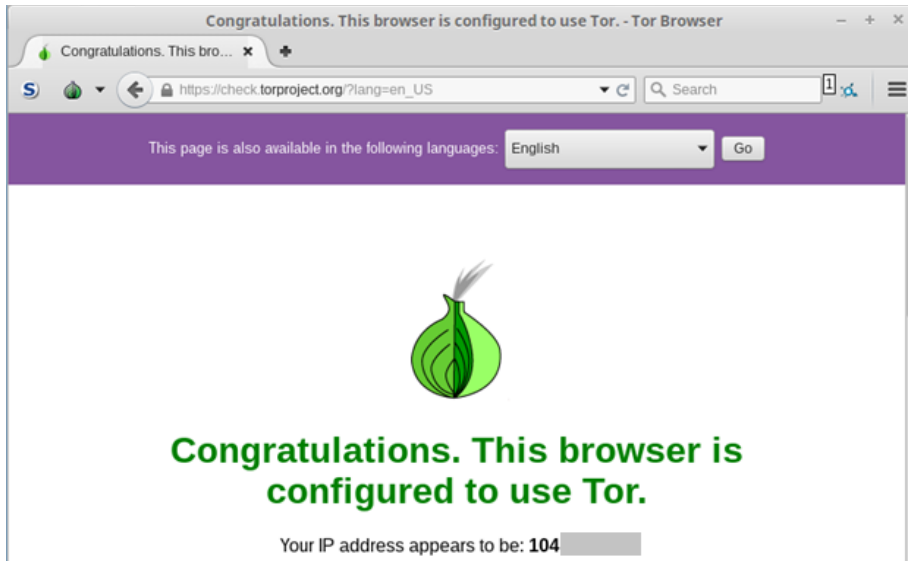
If the browser notifies you it is out of date, open the Green Onion and select “Check for Tor Browser Update...”. Allow the browser to update and restart the browser.



Click the Green Onion, then “Security settings” and adjust your security settings to Medium High, and click Ok.



Now click Test TOR Network Settings in the center of the web page. You should see the congratulations page.



Now you can browse the web

If you want to explore the “dark web” use the Hidden Wiki as your starting place. Web addresses on the dark web end in .onion. Take care in exploring, just as you would walking around in the bad part of town.

<http://zqktlwi4fecvo6ri.onion/>

RetroShare

Retroshare is a encrypted communications tool available on Windows, Macs and Linux.

<http://retroshare.net/index.html>

```
sudo add-apt-repository ppa:retroshare/stable
sudo apt-get update
sudo apt-get install retroshare
```

Create a new profile or import your old profile. The advanced option allow you to create a 4096 bit key (recommended by K) For more information, follow the AmRRON guide



FINISHED

Your Linux Mint workstation is complete. Watch the forums for updates and let me know any corrections or additions.

<https://chainsawprivacy.wordpress.com>

Appendix A - Upgrade from Mint 17.3

To upgrade from Mint 17.3, we are going to backup our files then reformat the drive. Mint does have a upgrade feature, but it's better to do a clean install.

Copy the contents of your home folder to a USB drive. Export your Enigmail configuration. Then copy things back to the new system overwriting existing files. Use Control-H to show hidden files.

Don't restore the entire tar file if you use the command in Appendix B. Some of the hidden folders from Mint 17 might not be compatible with Mint 18.

Folders to restore:

- Desktop
- Documents
- Music
- Pictures
- Videos
- Any other folders or files in your home folder that you put there.

Appendix B - Backups

It's fairly easy to rebuild our system and re-install programs, but our documents and pictures need to be backed up. All of our created data ends up in our home folder. Mint 18 has a graphical back up tool under Menu > System > Backup Tool. It is awful and doesn't back up properly. When it comes out, Mint 18.3 might have a better one.

Fortunately, we have good old Tape Archiver - tar. Even though backup tapes are a thing of the past, tar still works great. This command backups our home folder (except Downloads) to a tar file with the date as part of the name.

```
tar -cvpzf ~/Downloads/backup-$(date +%Y-%m-%d).tar.gz --exclude='Downloads' ~/
```

Note: Remove the v to not show the files being backed up.

This creates a backup file on your home folder in your Downloads folder. It excludes the Downloads folder to avoid backing up the backup file and your Downloads folder is temporary anyway. Copy the file to a USB drive for storage.

If you want to backup the entire disk, look into using CloneZilla, a disc 'cloning' tool that copies the entire disk. You create a Live CD or USB to boot off and then copy the disk to a USB drive or network share.

<http://clonezilla.org/> However, I've not been sucessful with encrypted disks