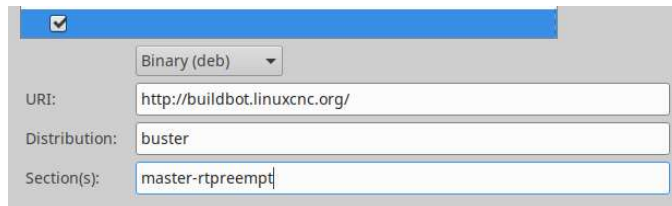


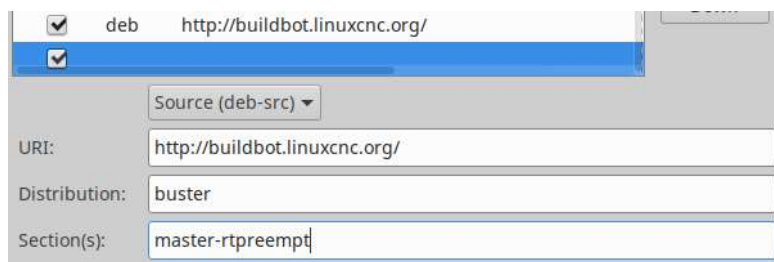
Section 7 - Required - Install LinuxCNC Package Version (cont.)

3. Click the MX Linux icon
4. Click "Settings"
5. Scroll down and click "Synaptic Package Manager"
6. Enter the root password and click "Authenticate"
7. Click "Settings" from the menu then "Repositories"
8. Click "New", leave the dropdown as "Binary (deb)"
9. In "URI:" enter: **http://buildbot.linuxcnc.org/**
10. In "Distribution:" enter: **buster**
11. In "Section(s):" enter: **master-rtpreempt**

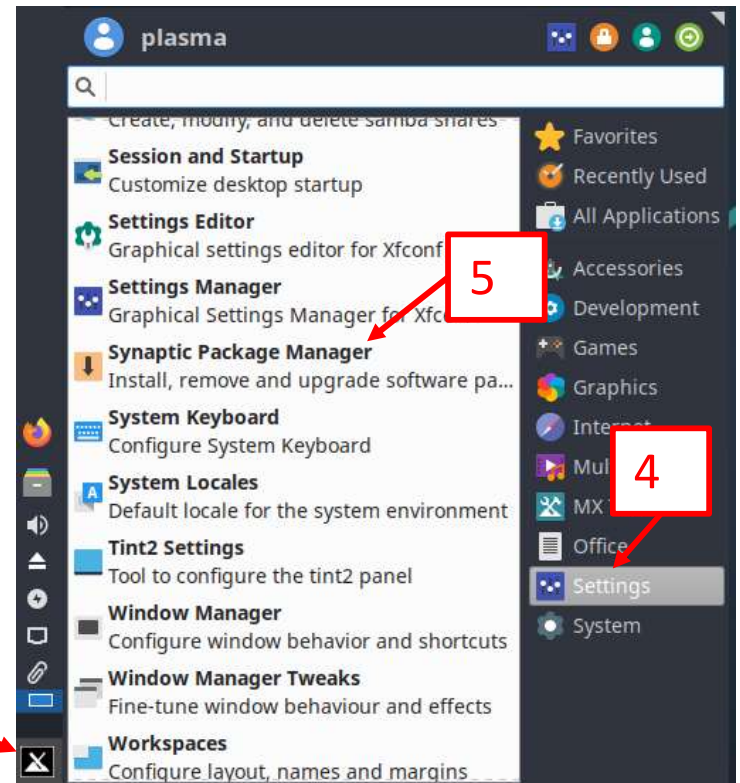


Binary (deb)
URI: http://buildbot.linuxcnc.org/
Distribution: buster
Section(s): master-rtpreempt

12. Click "New"
13. Change the drop down to "Source (deb-src)"
14. In "URI:" enter: **http://buildbot.linuxcnc.org/**
15. In "Distribution:" enter: **buster**
16. In "Section(s):" enter: **master-rtpreempt**



Source (deb-src)
URI: http://buildbot.linuxcnc.org/
Distribution: buster
Section(s): master-rtpreempt



Section 7 - Required - Install LinuxCNC Package Version (cont.)

17. Click “OK”
18. When prompted with “Repositories changed”, click “Reload”
19. Click “Search” in the top right of the window
20. In the “Find” window, enter: **linuxcnc**
21. Click “Search”
22. Click on “linuxcnc-ospace”
23. Right click on “linuxcnc-ospace” and select “Mark for Installation”
24. When prompted to “Mark additional required changes?”, click “Mark”
25. Click on “linuxcnc-ospace-dev”
26. Right click on “linuxcnc-ospace-dev” and select “Mark for Installation”
27. When prompted to “Mark additional required changes?”, click “Mark”
28. If the user wishes to have any local docs, follow the same process to mark them for installation

At minimum, the screen should look like this:

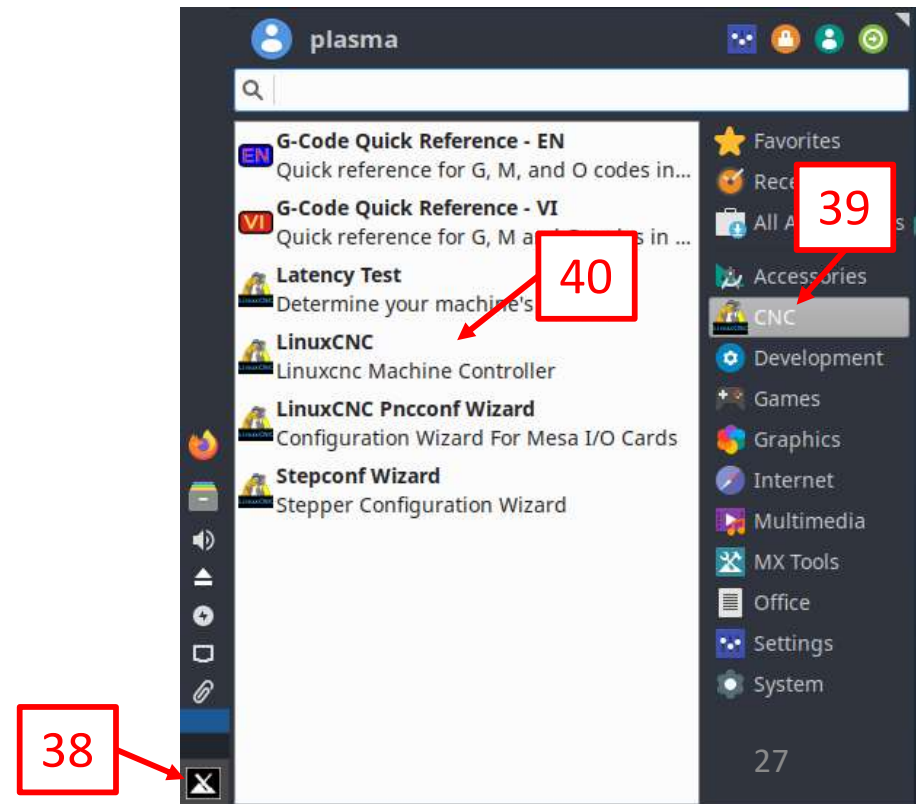
S	Package	Installed Version	Latest Version	Size	Description
★	linuxcnc-doc-cn		1:2.9.0~pre0.4388.		motion controller for CNC machines and robots (Chinese)
★	linuxcnc-doc-en		1:2.9.0~pre0.4388.		motion controller for CNC machines and robots (English documentation)
★	linuxcnc-doc-es		1:2.9.0~pre0.4388.		controlador de movimiento para máquinas CNC y robots (Español).
★	linuxcnc-doc-fr		1:2.9.0~pre0.4388.		motion controller for CNC machines and robots (French documentation)
✓	linuxcnc-ospace		1:2.9.0~pre0.4388.		motion controller for CNC machines and robots
★	linuxcnc-ospace-dbgsym		1:2.9.0~pre0.4388.		debug symbols for linuxcnc-ospace
✓	linuxcnc-ospace-dev		1:2.9.0~pre0.4388.		PC based motion controller for real-time Linux

Section 7 - Required - Install LinuxCNC Package Version (cont.)

29. Click “Apply” in the upper Menu list
30. Ensure “Download Packages Only” is NOT checked
31. Click “Apply” in the popup window
32. Click “Close” in the “Changes applied” window
33. Close the Synaptic Package Manager window
34. Open a terminal window
35. Enter the following command:
`/usr/lib/python3/dist-packages/qtvcv/designer/install_script`
36. When prompted, enter 1 (unless the user intends to do design work in QtVCP)
37. That should be it! To test, do the following:
38. Click the MX Linux icon
39. Click CNC
40. Click LinuxCNC

Note: For a package installation, another method of starting LinuxCNC is to open a Terminal window and type “linuxcnc”.

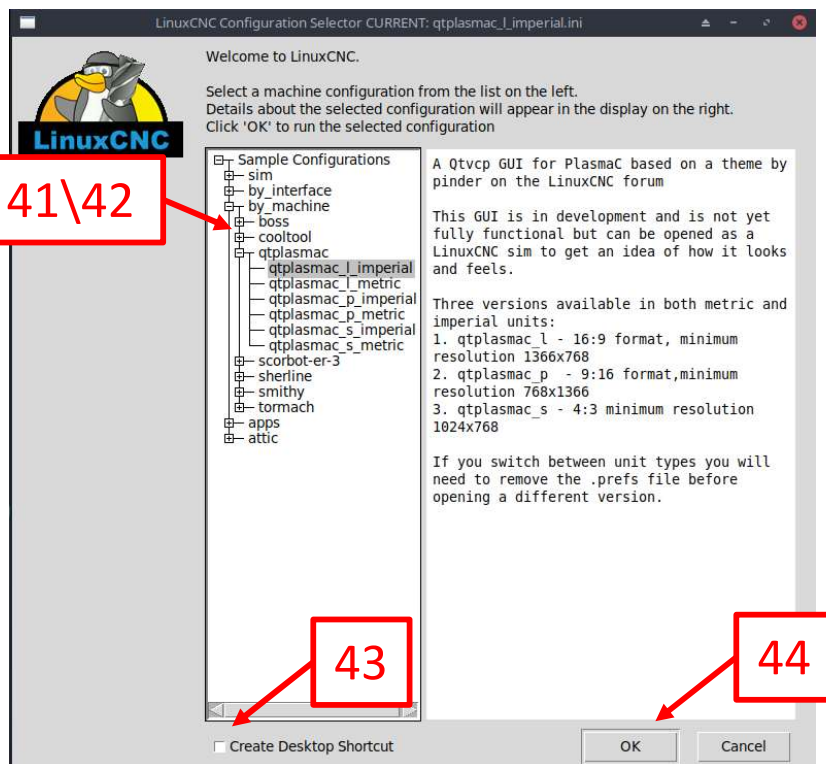
While this method leaves a terminal window open in the background, it can be advantageous as it will show any error messages present in the event that LinuxCNC closes unexpectedly.



Section 7 - Required - Install LinuxCNC Package Version (cont.)

41. Navigate the tree to: Sample Configurations -> by_machine -> qtplasmac
42. Choose a qtplasmac version that suits your units preference and screen size. This example shows “qtplasmac_l_imperial”
43. If the user intends to restore a previously working config (instructions in Section 9) then they should click “Create Desktop Shortcut” as it will make creating the icon easier
44. Click “OK”
45. Click “Yes” when asked to “Copy Configuration?”
46. Click “OK” to acknowledge that the config was copied
47. Close LinuxCNC when done

If the user is not doing a RIP installation, the process is now complete! ENJOY!



Section 7 - Required - Install LinuxCNC Package Version (cont.)

48. If the user has a backup of a previously working configuration, an example of restoring a QtPlasmaC configuration is shown in Section 9.
49. Otherwise, the user will now need to create a new configuration with PnCconf or StepConf

Section 8 - Optional - Install LinuxCNC RIP Version



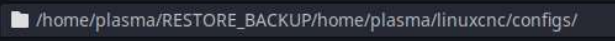

1. Open a terminal window
2. Enter the following command to install the build dependencies:
sudo apt install -y debhelper tcl8.6-dev tk8.6-dev libreadline-gplv2-dev asciidoc dblatex docbook-xsl dvipng graphviz groff inkscape source-highlight w3c-linkchecker xsltproc texlive-extra-utils texlive-font-utils texlive-fonts-recommended texlive-lang-cyrillic texlive-lang-french texlive-lang-german texlive-lang-polish texlive-lang-spanish texlive-latex-recommended asciidoc-dblatex python3-dev libxmu-dev libglu1-mesa-dev libgtk2.0-dev gettext intltool autoconf libboost-python-dev libmodbus-dev libusb-1.0-0-dev yapps2 libtirpc-dev
3. Enter the following command to clone the LinuxCNC Repo:
git clone https://github.com/linuxcnc/linuxcnc.git linuxcnc-dev
4. Enter the following commands one at a time to build Linux CNC:
cd linuxcnc-dev/src
./autogen.sh
./configure
make
sudo make setuid

To run the RIP installation, enter a terminal window and enter:

```
~/linuxcnc-dev/scripts/linuxcnc
```


Section 9 - Optional - Restore Previously Working Configuration

(This example uses a QtPlasmaC backup)

1. Open a File Manager Window: 
2. Navigate to the location of the backup config, and extract it by right clicking and clicking “extract to”
3. Click the New Folder icon in the top right of the window: 
4. Enter a suitable folder name
5. Click “Create”
6. Click “Extract” in the bottom right of the window
7. Navigate to the newly created folder
8. Continue clicking folders until the last opened folder is “configs”. The address should look similar to this (it’s most important that it ends in /configs/): 
9. RIGHT click on the remaining folder and choose “Cut”
10. Navigate to the home folder by clicking the house icon under “Places”: 
11. Open the “linuxcnc” folder (it should exist if steps 38-46 in Section 7 were successful)
12. Open the “configs” folder
13. RIGHT click on the File Manager background and choose “Paste”
14. Open the newly pasted folder
15. Right click on “qtplasmac” and click “Delete”
16. Confirm by clicking “Delete”

Section 9 - Optional - Restore Previously Working Configuration (cont.)

(This example uses a QtPlasmaC backup)

17. Highlight the entire address in the File Manager window. Example:



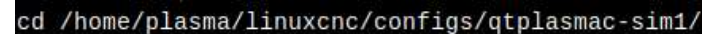
18. RIGHT click and choose “Copy”

19. Open a terminal window

20. Enter: **cd**

21. Press Space bar

22. Press ctrl + shift + V to paste the folder address



23. Press enter

CHOOSE ONLY ONE OF 24A. OR 24B (if the user has both versions, then choosing the option that the user intends to use more/update more would be the preferred choice).

After entering the command, there will be no acknowledgement in the terminal unless it fails.

FOR A PACKAGE INSTALLATION:

24a. Enter the following command:

```
In -s /usr/share/doc/linuxcnc/examples/sample-configs/by_machine/qtplasmac/qtplasmac
```

FOR A RIP INSTALLATION:

24b. Enter the following command:

```
In -s ~/linuxcnc-dev/configs/by_machine/qtplasmac/qtplasmac/
```


Section 9 - Optional - Restore Previously Working Configuration (cont.)

25. RIGHT click on the icon created in step 43 of Section 7
26. Click “Edit Launcher”
27. Edit the “Name:” field as required
28. Edit the “Command:” field to reflect the installation type (Package or RIP) and the location of the configuration’s .ini file. (EXAMPLE OF EACH ON SUBSEQUENT PAGES) Type this path manually as copy/paste can cause character issues here.

Package Install: **sh -c “/usr/bin/linuxcnc <path_to_ini_file>”**

RIP Install: **sh -c “~/linuxcnc-dev/scripts/linuxcnc <path_to_ini_file>”**

Where <path_to_ini_file> is the path to the .ini file in the user’s config folder

29. It is recommended to check “Run in terminal” as this can let the user see error messages while LinuxCNC is running. Note: the terminal window will close if LinuxCNC crashes.
30. Click “Save”
31. Double click the icon
32. Click “Mark Executable”

Steps 25-32 can be omitted if the user intends to manually start LinuxCNC in a terminal window. When launched this way, the terminal window will not close if LinuxCNC crashes.

For Package install enter: **linuxcnc <path_to_ini_file>**

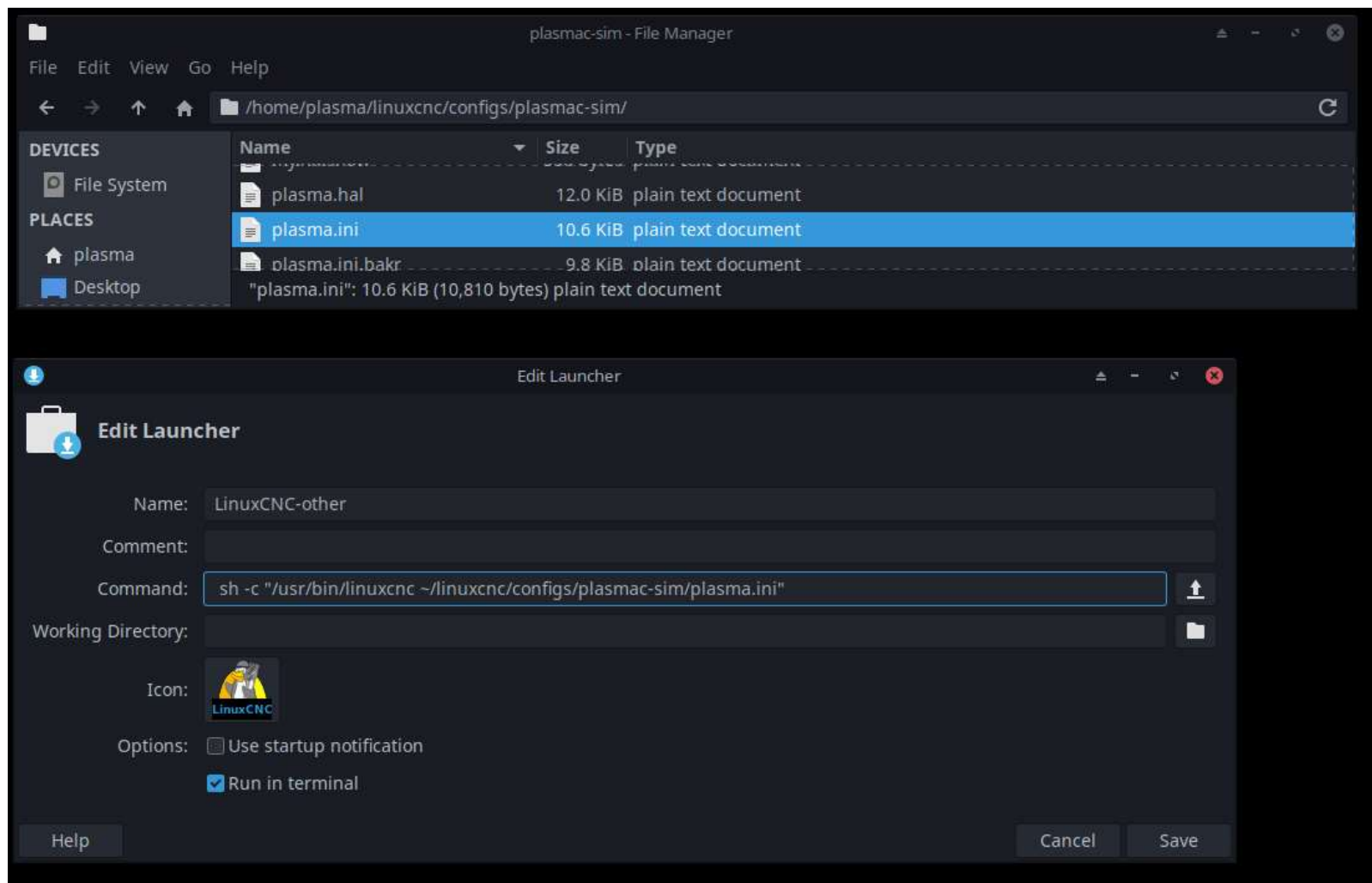
For a RIP install enter: **~/linuxcnc-dev/scripts/linuxcnc <full_path_to_ini_file>**

Note: After a successful launch in a terminal window, the user can re-launch the same command by simply pressing the up arrow on the keyboard. Terminal (usually) remembers all executed commands so there is no need to re-enter the full stanza each time.

Section 9 - Optional - Restore Previously Working Configuration (cont.)

(This example uses a QtPlasmaC backup)

Example Launcher settings for a Package install:



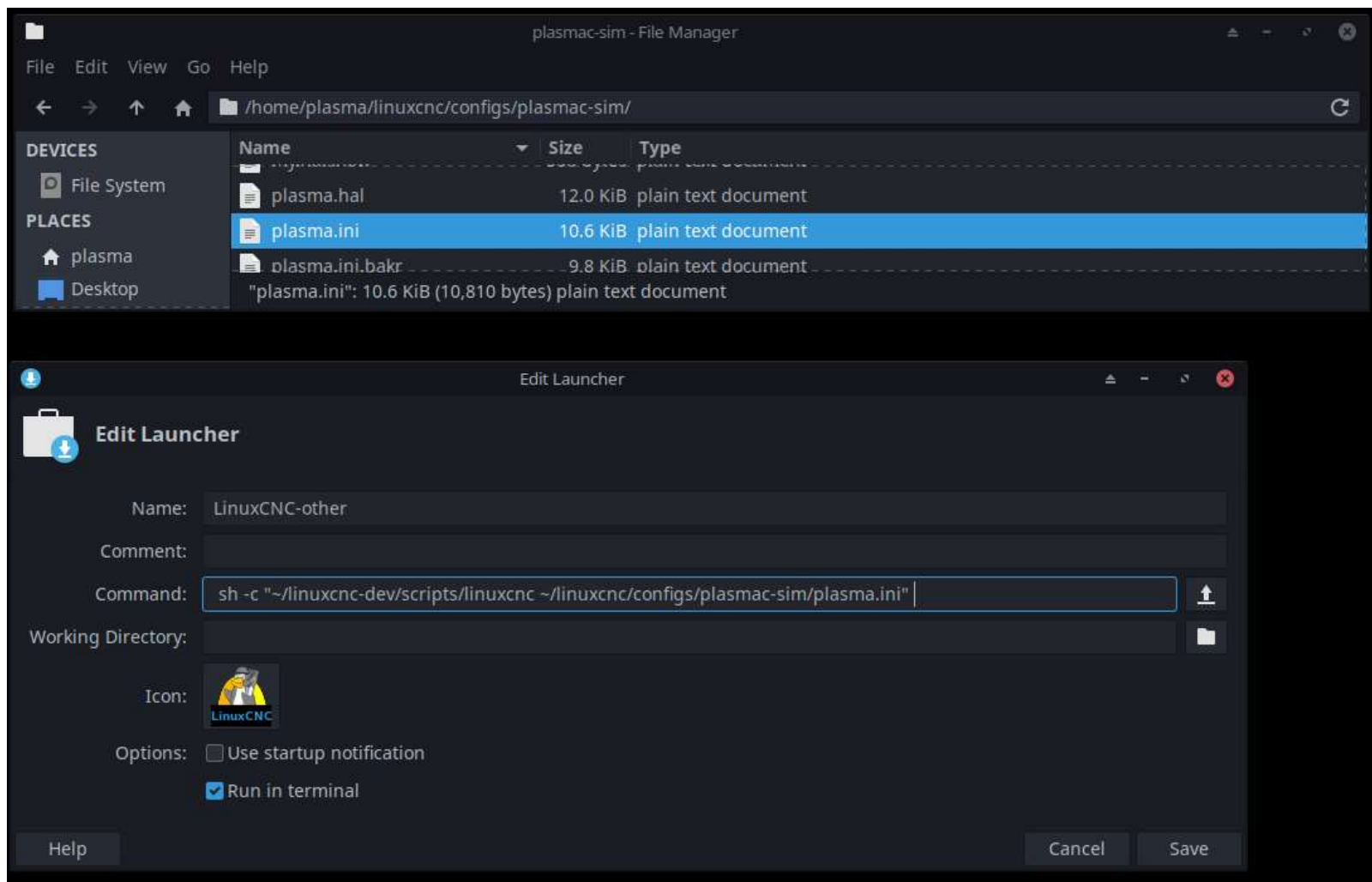
To launch the same example via a terminal window:

`/usr/bin/linuxcnc ~/linuxcnc/configs/qtplasmac-sim/plasma.ini`

Section 9 - Optional - Restore Previously Working Configuration (cont.)

(This example uses a QtPlasmaC backup)

Example Launcher Settings for a RIP install:



To launch the same example via a terminal window:

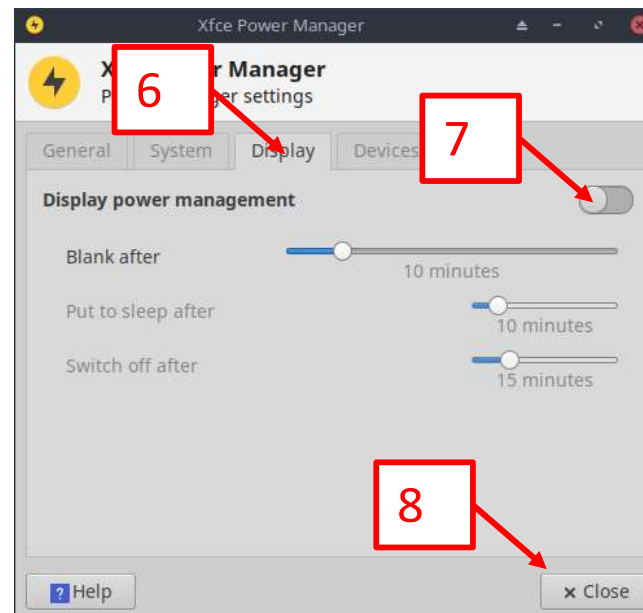
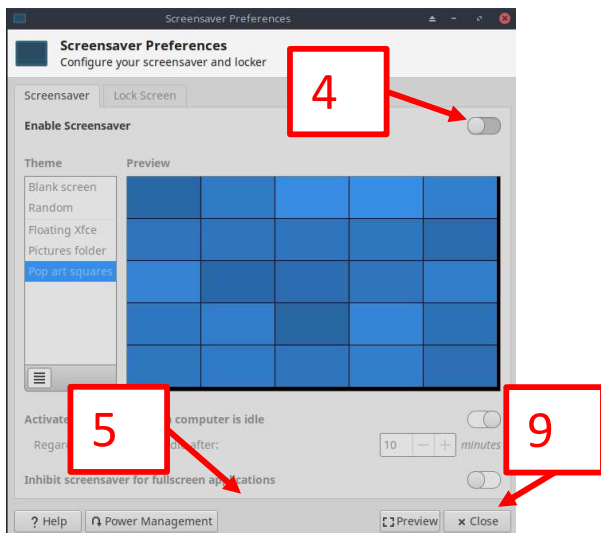
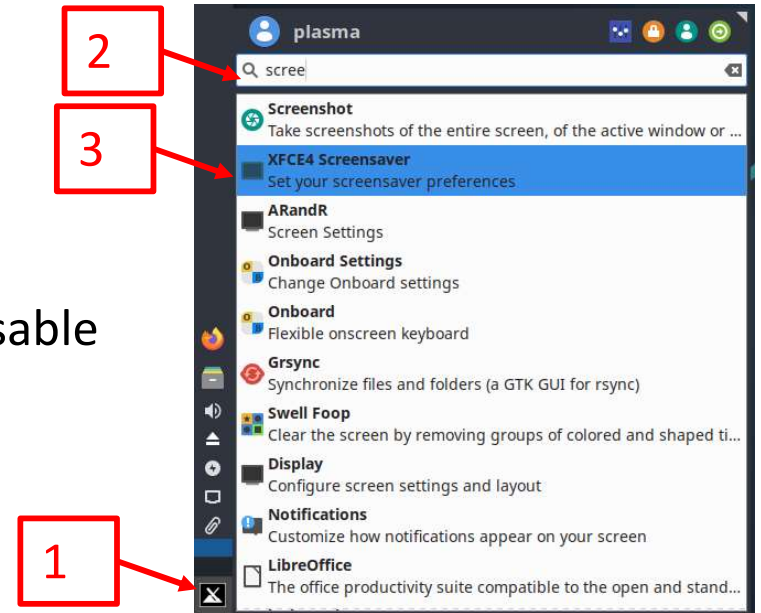
```
~/linuxcnc-dev/scripts/linuxcnc ~/linuxcnc/configs/qtplasmac-sim/plasma.ini
```

Section 10 - Optional But Recommended - Setting Changes - Screensaver

It is a good idea to turn off the screen saver, as well as any blank screens caused by power management.

To do so:

1. Click the MX Linux Icon
2. Start typing "screen"
3. Click on XFCE4 Screensaver
4. Click the check box next to "Enable Screensaver" to disable
5. Click "Power Management"
6. Click the "Display" tab
7. Click the check box next to "Display power management" to disable
8. Click "Close"
9. Click "Close"

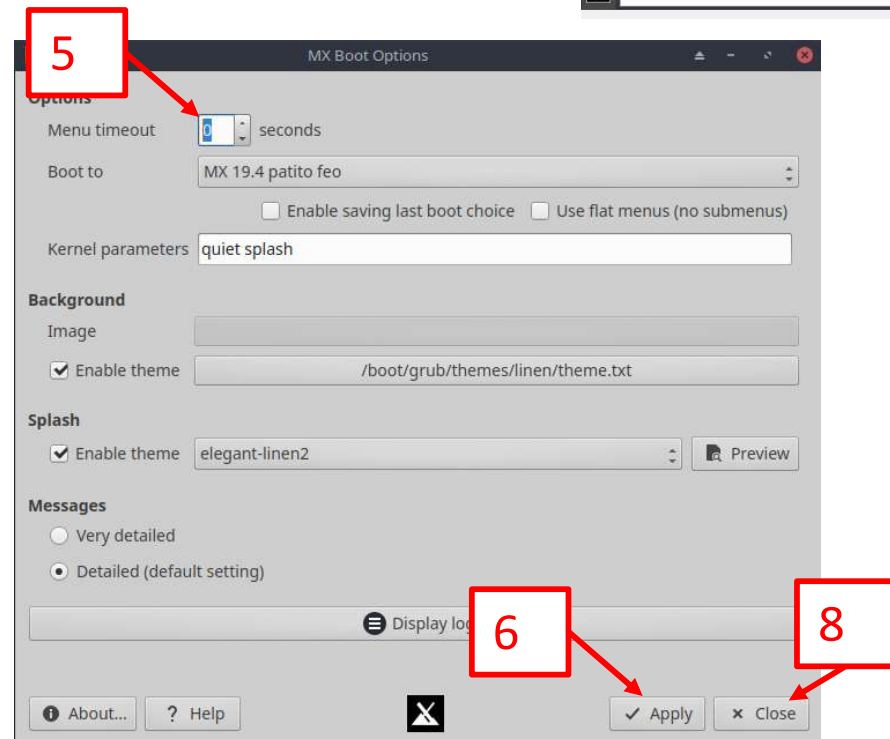
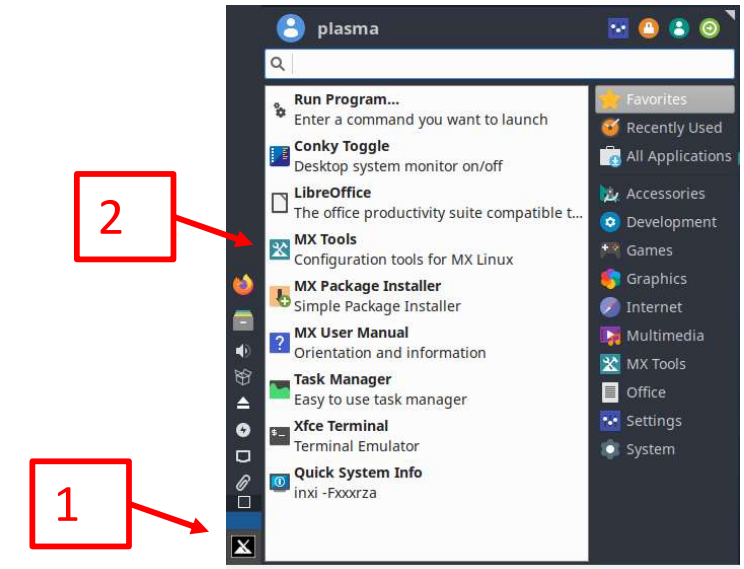
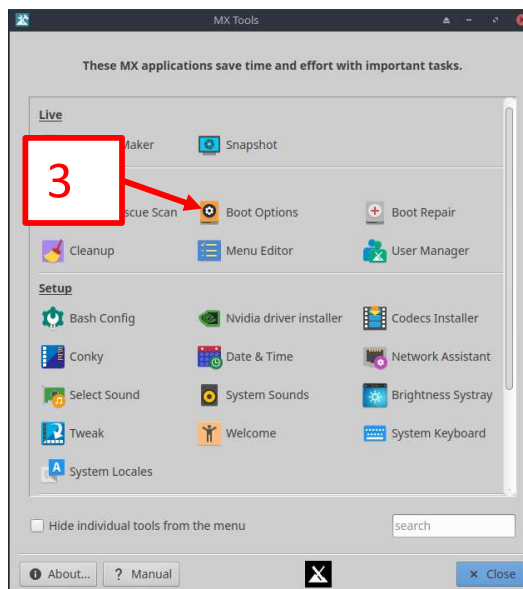


Section 11 - Optional But Recommended - Setting Changes - GRUB

If the user is not dual booting Operating Systems, it is not necessary to show the GRUB chooser on startup, it can be disabled to save boot time.

To do so:

1. Click the MX Linux Icon
2. Click “MX Tools”
3. Click “Boot Options”
4. Type in the root password and click “Authenticate”
5. Change the “Menu timeout” to 0 seconds
6. Click “Apply”
7. Click “OK”
8. Click “Close”



Recommended Setting Changes

The following steps are optional, however they are recommended for anyone coming from Windows, or even Mint as it will help to provide a more “Windows like” (or “Mint like”) user experience. These changes, while small, can go a long way to preventing some of the frustrations associated with a new Operating System.

Section 12 - Recommended Setting Changes - Double Click

The default in MX Linux is to single click icons on the desktop to launch them. The user can change this to double click similar to Windows if they wish.

To do so:

1. (assumes MX tools is still open from GRUB change)
2. Click “Tweak”
3. Click “OK” to the “Panel settings” popup
4. Click the “Config Options” tab
5. Uncheck the two options show
6. Click “Apply”

