* **Bios Update**

Flash latest bios

Make sure Recover AC is set to power on. (battery backup power supply needs this)

Disable Intel Management Engine(ME) (latency improvement)

Disable AMT (latency improvement)

* **Update to LinuxCNC**

Install from a LinuxCNC 2.9.2 iso, follow prompts.

sudo apt update

sudo apt dist-upgrade

If this fails with a initramfs message about running out of space, delete old versions in the /boot subdirectory.

sudo rm /boot/\*-4.19.0-9\*

sudo rm /boot/\*-4.19.0-11\*

sudo apt dist-upgrade

* **Latency improvements**

sudo nano /etc/default/grub

Change line to:

GRUB\_CMDLINE\_LINUX\_DEFAUT = “quiet splash isolcpus=0,1,2”

sudo update-grub

* **Touch Screen Setup**

sudo apt install xserver-xorg-input-evdev

sudo apt remove –auto-remove xserver-xorg-input-libinput

sudo apt install xinput-calibrator

Copy 45-evdev.conf and 99-calibration.conf to /usr/share/X11/xorg.conf.d

You can use the file manager to copy the two files to the desktop, then:

sudo cp Desktop/\*.conf /usr/share/X11/xorg.conf.d

The following optional settings/install may improve LinuxCNC for general purpose use.

* **Enable autologin on xfce**

<https://forums.debian.net/viewtopic.php?t=146587#3>

Open and edit /etc/lightdm/lightdm.conf with root rights.

[Seat:\*]

#autologin-user=

and make it like this:

[Seat:\*]

autologin-user=cncbox

* **Enable autostartup of linuxcnc (run linuxcnc prior to this to setup user config directories)**

Open desktop Applications/Settings/Sessions and Startup/Application AutoStat to add ...

* **SSH**

see <https://phoenixnap.com/kb/how-to-enable-ssh-on-debian>

If you enable SSH on your linux computer, you use putty on your Windows computer to directly login to your linux computer.

sudo apt install openssh-server

cncbox@cncRouter:~/linuxcnc$ ip a

1: lo: <LOOPBACK,UP,LOWER\_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000

link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00

inet 127.0.0.1/8 scope host lo

valid\_lft forever preferred\_lft forever

inet6 ::1/128 scope host

valid\_lft forever preferred\_lft forever

2: enp0s25: <BROADCAST,MULTICAST,UP,LOWER\_UP> mtu 1500 qdisc pfifo\_fast state UP group default qlen 1000

link/ether 00:25:90:e1:43:ca brd ff:ff:ff:ff:ff:ff

inet 192.168.86.24/24 brd 192.168.86.255 scope global dynamic enp0s25

valid\_lft 85922sec preferred\_lft 85922sec

inet6 fe80::225:90ff:fee1:43ca/64 scope link

valid\_lft forever preferred\_lft forever

3: enp2s0: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000

link/ether 00:25:90:e1:43:cb brd ff:ff:ff:ff:ff:ff

Use the returned ip address (192.168.86.24 in this example) when you want to connect using putty on your windows machine.

To turn off SSH indefinitely, enter:

sudo systemctl disable ssh

* **SAMBA file sharing**

Samba file sharing lets you map folders on your linux computer over the network to windows drive. You can use this to output Fusion360 files directly to the Linux computer from your Windows computer.

sudo apt update

sudo apt install samba

Modify the following lines and paste at end of /etc/samba/smb.conf

sudo nano /etc/samba/smb.conf

[CNChome]

comment = cncbox home on LinuxCNC box.

path = /home/cncbox

browseable = yes

read only = no

guest ok = yes

available = yes

public = yes

writeable = yes

valid users = cncbox

sudo systemctl restart smbd

sudo smbpasswd -a cncbox

ip a

Use the ip address to map a drive on your Windows machine.

From the Window File Explorer, select this pc, then map network drive. Use your ip address and the windows drive letter doesn’t matter.





* **GIT versioning**

see <https://www.digitalocean.com/community/tutorials/how-to-install-git-on-debian-10>

GIT allows you to backup your configurations to Github and see the differences if you change your config files. This can save your ass when you make a change and can’t get back to a working state.

sudo apt update

sudo apt install git

git config --global user.name "Sammy"

git config --global user.email [sammy@domain.com](mailto:sammy@domain.com)

When you have git installed, you can get a clone of all my configurations using:

git clone <https://github.com/JTrantow/configs.git>

* **Using second Network card (for mesa)**