

# Table of Contents

<b>Linux Scripts</b> .....	2
<b>Misc commands</b> .....	4
<i>Tearfree mode</i> .....	4
<i>Run all executable in a folder</i> .....	4
<i>Boot Linux to serial port</i> .....	4
<i>Mount Seagate external drive without UAS</i> .....	5
<i>Map Wacom tablet to one display</i> .....	5
<b>Why?</b> .....	6
<i>Play music from motherboard speaker</i> .....	6

# Linux Scripts

Over the years, I have build up several useful scripts to use on Linux systems. I'll try to document them here!

- [backups](#)
  - [Dump and Backup a MySQL Database over SSH](#)
  - [TAR a system over SSH](#)
- [display](#)
  - [How to Enable Tearfree Mode \(and what is it?\)](#)
- [ffmpeg](#)
  - [Add \(burn in\) countdown timer to video](#)
  - [AV1 encoding with HDR to SDR tonemapping and 5.1 to stereo downmixing](#)
  - [Change Video Gain \(Brightness\)](#)
  - [Convert 60i video to 60p using yadif \(60 interlaced field per second video to 60 progressive frame per second video\)](#)
  - [Convert 60p video to 60i \(60 frame per second progressive video to 60 field per second interlaced\)](#)
  - [Convert still image to a video](#)
  - [Dither Video and Reduce Colors](#)
  - [Volume Adjustment and Dynamic Range Compression using dynaudnorm and compand](#)
  - [Compress all FLAC \(or MP3\) files in subfolders to OPUS](#)
  - [Extract line 21 / EIA 608 closed captions to subtitle files](#)
  - [Fix color space issues when converting from jpeg](#)
  - [Force a fixed frame rate](#)
  - [Fun music visualizer with FFMPEG](#)
  - [Try to make gstreamer x11imagesrc bearable](#)
  - [Interpolate video to higher framerate](#)
  - [Better, faster screen capture with kmsgrab](#)
  - [Merge/concatenate multiple video/audio files into one](#)
  - [Overlay Logo Over Video With Transparency](#)
  - [Rotate a video using only metadata](#)
  - [Scale video using black bars](#)
  - [Overlay videos side by side](#)
  - [Split a video file to multiple parts](#)
  - [Stream desktop over Icecast](#)
  - [Visualize music into notes](#)
- [files](#)
  - [Cannot unmount USB drive](#)
  - [Checksum entire folders](#)
  - [Compress a folder to tar.xz](#)
  - [Convert .bin and .cue files into a .iso](#)
  - [Create multi-session DVD and burn files](#)
  - [Deduplicate Files on BTRFS](#)
  - [Evenly Split Directories Into Chunks](#)

- Grep through PDF files
- Merge multiple PDF's together
- How to mount a .dd file
- Mount SMB and NFS shares for a NAS with the fstab
- OCR a PDF file
- Parity and Par2
- Setting up an encrypted hard drive with LUKS and BTRFS
- i3 config
  - Audio Player Play/Pause/Skip/Back Controls
  - Sharp font for i3bar
  - Blue Light Filter using Redshift
  - End All Use of Program in i3
  - Lock Computer/System
  - Map Wacom (or other) Graphics Tablet to One Display
  - Disable Mouse Acceleration in i3
  - Notifications in i3
  - Volume Control Using i3
- media
  - Add Reverb to an Audio File Using SOX
  - Apply Headphone EQ Directly In Pipewire
  - Batch-convert files to JXL
  - Change Sample Rate of Pipewire
  - GStreamer VA-API with Full Range Color
  - Split output on sound card (PulseAudio)
  - Stream a video or screen to another computer using netcat
  - Live Links
  - Transcribe Multi-lingual Video Into Subtitles With Speaker Color
  - Turn a Song Into an Instrumental
- rsync
  - Copy a File List or Playlist From A Directory
  - Use Rsync to do a full one-way sync
- sway
  - Dim Backlight on a Laptop with Sway after a Timeout
  - How To Enable Freesync and 10 Bit Colour Support
  - How To Map a Wacom To A Single Output Using Sway
- wayland
  - Blue Light Filter on Wayland
  - How To Forward Wayland Applications over SSH
  - Run games in HDR
- Backups and Data
- LaTeX
- Desktop Experience
- Access Serial Loopback through Supermicro IPMI over SSH
- Useful Programs
- Working with Websites

Any other unsorted stuff will be here!

# Misc commands

## Tearfree mode

[Tearfree Mode](#)

## Run all executable in a folder

Sometimes it is useful to run all executables in a folder. Rather than looping, if you have `debianutils` or `busybox`, you can use the dedicated `run-parts` command.

Note the slightly different syntax between the `debian` and `busybox` ones. `busybox` can't do `-report` or `-v` to print the name of all files as they are run.

```
run-parts .
```

Where the `.` is the folder to run executables from.

Make sure you test what will be run as follows

```
run-parts --test
```

IIRC, you can also pass parameters to the files being run. This may be useful for running test executables.

## Boot Linux to serial port

For many people, this would fall within the *Why?* section. For the 1 homelab sysadmin reading it, this may be useful.

Essentially, Linux by default boots to `/dev/tty0`, which is generally the main monitor and console. However, you can have it print all the `systemd` messages elsewhere, such as a serial port. This is useful if you have a motherboard with IPMI that supports serial port redirection but has broken KVM (\*cough\* supermicro x9 boards needing some java version for kvm \*cough\*).

This can be better than running `sshd` or `x2go` on startup, because if you have a special boot process (such as full disk encryption), then you need to boot to be able to start those services.

To do this, just add the console to the kernel boot parameters:

```
console=ttyS1,9600
```

The first parameter is the console name. Serial ports start with `/dev/ttyS0`, then `S1`, so on. Like COM ports on Windows. The 2nd parameter is the baud rate, ie: speed. 9600 is quite slow, and any lower would take too long to boot, however this is a common speed that's almost guaranteed to be supported.

If you don't know where to add this, see you GRUB or REFIND or config of your bootloader. It's the line that includes

```
initrd=/initramfs-linux-zen.img
```

## Mount Seagate external drive without UAS

Normally, you can't run `smartctl` on a Seagate external drive since they use UAS (USB attached SCSI), which might make it a bit faster for planar drives, but `smartctl` doesn't support reading SMART data over UAS.

First, unmount and unplug the drive if it is in use

Then, remove the `usb-storage` and `uas` modules

```
sudo modprobe -r usb-storage
sudo modprobe -r uas
```

(or alternatively, use `rmmod`)

```
sudo rmmod usb-storage
sudo rmmod uas
```

Next, before you plug the drive in (which will auto-load `uas`), you need to load the `usb-storage` module with the quirk to disable `uas` for your Seagate drive.

To do this, get the vendor and product id by doing `lsusb` (the `xxxx:yyyy` stuff)

Finally, reload the module with the quirk as follows

```
sudo modprobe usb-storage quirks=0bc2:331a:u
```

Where the `xxxx:yyyy` is the vendor and product id for your drive, and the `:u` tells it to not use `uas`.

## Map Wacom tablet to one display

Moved to [Map Wacom \(or other\) Graphics Tablet to One Display](#)

# Why?

Things that make you question why this was implemented.

## Play music from motherboard speaker

Have you wanted to relive the experience of listening to music through a tin can or the audiophile grade (lol) 70v ceiling speakers installed at your old school? Well, the kernel has got the solution for you!

Some custom computers and most prebuilt computers have a small onboard speaker or buzzer on the motherboard. This is usually very handy for debugging as it can produce a range of tones to help troubleshoot problems. On Linux, the bell input and some escape characters normally trigger the buzzer. I also use the beep command to signal notifications with a range of tones. It's like the old RGB indicator on phones, where you can tell what program just fired a notification from the sound (like you could based on the colour of the LED).

```
beep
```

Of course, people have already compiled a range of melodies for this, and you can find it here <https://github.com/ShaneMcC/beeps>

But, what if that's not enough, and you want to use the buzzer as a speaker? By default the kernel loads the pcspkr module for using the speaker/buzzer. There is however another module snd-pcsp that can mount the speaker as an ALSA output, allowing PulseAudio to use it as a sound output.

```
sudo rmod pcspkr  
sudo modprobe snd-pcsp
```

Finally, bring up pavucontrol and enable the mono output. You may need to unmute it first from alsamixer as well. Then, you can simply set a program like MPD to use it as an output and enjoy your music in what may be usable quality if your MB has a speaker, and horrifying quality that sounds like a dying fire alarm if your MB has a buzzer. (tip: change the base frequency to be above the range where you can hear it).

todo: attach a recording of the sound quality

Have fun!

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