

I will try to collect useful stuff about Tegra latest upstream source on this page.

## Nvidia Tegra 2/3 APX/nv3p protocol implementation

- <https://github.com/AndroidRoot/wheelie>

### qemu

[https://github.com/digetx/tegra2\\_qemu](https://github.com/digetx/tegra2_qemu)

### i2cdetect

```
root@ac100:~# i2cdetect -l
i2c-1  i2c          7000c400.i2c          I2C adapter
i2c-2  i2c          7000d000.i2c          I2C adapter
i2c-0  i2c          7000c000.i2c          I2C adapter
root@ac100:~# i2cdetect -y 0
Error: Can't use SMBus Quick Write command on this bus
root@ac100:~# i2cdetect -F 0
Functionalities implemented by /dev/i2c-0:
I2C                                yes
SMBus Quick Command                no
SMBus Send Byte                    yes
SMBus Receive Byte                 yes
SMBus Write Byte                   yes
SMBus Read Byte                    yes
SMBus Write Word                   yes
SMBus Read Word                    yes
SMBus Process Call                 yes
SMBus Block Write                  yes
SMBus Block Read                   no
SMBus Block Process Call           no
SMBus PEC                          yes
I2C Block Write                    yes
I2C Block Read                     yes
root@ac100:~# i2cdetect -y -r 0
   0  1  2  3  4  5  6  7  8  9  a  b  c  d  e  f
00:  -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
10:  -- -- -- -- -- -- -- -- -- -- -- -- -- UU --
20:  -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
30:  -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
40:  -- -- -- -- -- -- -- -- -- -- -- -- -- -- 4f
50: 50 51 52 53 54 55 56 57 -- -- -- -- -- -- --
60:  -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
70:  -- -- -- -- -- -- -- -- --
```

## grate-driver tegra2 support for mainline

<https://github.com/grate-driver>

<https://github.com/grate-driver/grate/wiki/Grate-driver>

```
https://wiki.debian.org/CreatePackageFromPPA
```

```
https://code.launchpad.net/~grate-driver/+archive/ubuntu/ppa
```

```
sudo apt install devscripts build-essential software-properties-common
```

```
sudo add-apt-repository ppa:grate-driver/ppa
```

```
# enable only deb-src (suggested beaver doesn't work for me)
```

```
root@tegra20:/home/dpavlin# cat /etc/apt/sources.list.d/grate-driver-ubuntu-ppa-disco.list
#deb http://ppa.launchpad.net/grate-driver/ppa/ubuntu beaver main
deb-src http://ppa.launchpad.net/grate-driver/ppa/ubuntu disco main
```

```
apt update # make sure that is pass, use apt-key adv --recv-key if needed
```

```
# build order is important
```

```
apt-get build-dep libdrm
apt source --build libdrm
dpkg -i libdrm*.deb
```

```
apt-get build-dep xserver-xorg-video-opentegra
```

```
apt source --build xserver-xorg-video-opentegra
```

```
# this will fail to instal because of libturbojpeg dependency
```

```
root@x200:/home/dpavlin/grade-build/xserver-xorg-video-opentegra-201901152016~grate~feac058~ubunt
```

```
Package: xserver-xorg-video-opentegra
Architecture: armhf
Depends: ${shlibs:Depends}, ${misc:Depends}, ${xviddriver:Depends},
 libdrm-tegra0, liblz4-1, libturbojpeg0 (>= 1.5.0), libpng16-16,
 Provides: ${xviddriver:Provides}
Description: X.Org X server -- Opensource driver for NVIDIA Tegra.
 This package provides HW-accelerated opensource driver for NVIDIA
 Tegra20+ SoC's from the GRATE project <URL:https://github.com/grate-driver>.
```

```
root@x200:/home/dpavlin/grade-build/xserver-xorg-video-opentegra-201901152016~grate~feac058~ubunt
```

```
root@tegra20:/home/dpavlin# apt-get install x11-xserver-utils
```

```
root@tegra20:/etc# git diff
diff --git a/X11/xinit/xserverrc b/X11/xinit/xserverrc
index 94494ec..e6c4aa4 100755
--- a/X11/xinit/xserverrc
+++ b/X11/xinit/xserverrc
@@ -1,3 +1,3 @@
#!/bin/sh
```

```
-exec /usr/bin/X -nolisten tcp "$@"
+exec /usr/bin/X -listen tcp "$@"
```

```
# let's try it
```

```
startx
```

```
root@tegra20:/home/dpavlin# export DISPLAY=:0
root@tegra20:/home/dpavlin# xhost +
access control disabled, clients can connect from any host
```

```
# on another computer
```

```
dpavlin@x200:~$ x2x -to tegra20:0 -south
```

```
# and one flip of display later, I have working X11 with remote mouse and keyboard
```

```
root@tegra20:/home/dpavlin# xrandr --output LVDS-0 --rotation inverted
```

```
# to get mesa to compile because of dependencies, I needed to update to buster
```

```
root@tegra20:/home/dpavlin# apt-get build-dep mesa
```

```
Reading package lists... Done
```

```
Reading package lists... Done
```

```
Building dependency tree
```

```
Reading state information... Done
```

```
Some packages could not be installed. This may mean that you have
requested an impossible situation or if you are using the unstable
distribution that some required packages have not yet been created
or been moved out of Incoming.
```

```
The following information may help to resolve the situation:
```

```
The following packages have unmet dependencies:
```

```
builddeps:mesa : Depends: debhelper (>= 11) but 10.2.5 is to be installed
                  Depends: quilt (>= 0.63-8.2~) but it is not going to be installed
                  Depends: x11proto-dev but it is not installable
                  Depends: libxcb-dri3-dev (>= 1.13) but it is not going to be installed
                  Depends: libxcb-present-dev (>= 1.13) but it is not going to be installed
                  Depends: llvm-7-dev (>= 1:7~) but it is not installable
                  Depends: libwayland-dev (>= 1.15.0) but 1.12.0-1 is to be installed
                  Depends: libwayland-egl-backend-dev (>= 1.15.0) but it is not installable
                  Depends: libclang-7-dev (>= 1:7~) but it is not installable
                  Depends: libclc-dev (>= 0.2.0+git20180917-1~) but it is not going to be install
                  Depends: wayland-protocols (>= 1.9) but it is not going to be installed
                  Depends: libglvnd-core-dev but it is not installable
```

```
E: Unable to correct problems, you have held broken packages.
```

```
# after buster upgrade and rebuild of everything
```

```
(with dpkg-buildpackage)
```

```
root@tegra20:/home/dpavlin/grade-build# apt source --build mesa
```

```
dpkg -i *.deb
```

```
~50 fps with 25% cpu usage in glxgears
```

```
root@tegra20:/home/dpavlin/grade-build# apt-get build-dep libvdpau-tegra
```

```
Reading package lists... Done
```

```
Reading package lists... Done
```

```
Building dependency tree
```

```
Reading state information... Done
```

```
Some packages could not be installed. This may mean that you have
requested an impossible situation or if you are using the unstable
distribution that some required packages have not yet been created
or been moved out of Incoming.
```

```
The following information may help to resolve the situation:
```

```
The following packages have unmet dependencies:
```

```
builddeps:libvdpau-tegra : Depends: libdri2-dev but it is not installable
E: Unable to correct problems, you have held broken packages.
```

```
# sigh
```

```
root@tegra20:/home/dpavlin/grade-build# apt source --build libvdpau-tegra
...
dpkg-checkbuilddeps: error: Unmet build dependencies: libxv-dev libdri2-dev
```

```
root@tegra20:/home/dpavlin/grade-build# apt --fix-broken install
root@tegra20:/home/dpavlin/grade-build# apt-get install libxv-dev
```

```
root@tegra20:/home/dpavlin/grade-build/libvdpau-tegra-201901220047~grate~8efb41c~ubuntu18.10.1# v
```

```
remove libdri2-dev and libdri2
```

```
root@tegra20:/home/dpavlin/grade-build/libvdpau-tegra-201901220047~grate~8efb41c~ubuntu18.10.1# d
```

```
dpkg -i ../libvdpau-tegra*.deb
```

## partition table support

<https://lkml.org/lkml/2020/2/24/1358>