

Replicant - Issue #2120

Research FLAG_HARDWARE_ACCELERATED in frameworks/base/core/java/android/content/pm/ApplicationInfo.java

09/01/2020 03:25 PM - Denis 'GNUtoo' Carikli

Status:	New	Start date:	09/01/2020
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:	Graphics	Estimated time:	0.00 hour
Target version:	Any version	Spent time:	0.00 hour
Resolution:		Grant:	
Device:	Unknown	Type of work:	Any programming languages (scripts, C, etc), Unknown
Description			

History

#1 - 09/01/2020 03:32 PM - Denis 'GNUtoo' Carikli

The frameworks/base/core/java/android/content/pm/ApplicationInfo.java code can be used to understand the /data/system/packages.xml file format.

Inside that file there is the following:

```
/**
 * Value for {@link #flags}: {@code true} when the application's rendering
 * should be hardware accelerated.
 */
public static final int FLAG_HARDWARE_ACCELERATED = 1<<29;
```

Since:

- Several SOC that can run free software bootloaders have a powerVR GPU
- The PowerVR GPU have no free driver (the kenrel part is just a shim and not a proper driver)
- The hardware is extremely complex to reverse engineer and the nonfree driver also requires a nonfree firmware
- There is leaked source code available furthurer complicates the matter as it would require to get lawyers advice before starting to even make a plan on how to approach the reverse engineering. We might also want/need clean room reverse engineering here.
- Some smartphones and tablets that already have a free bootloader have a PowerVR GPU.

It could be interesting to make some applications faster when lacking 3D acceleration.

If clearing this flag brings speedups or other advantages we could simply ignore it or patch packages.xml at the first boot.

#2 - 03/26/2021 07:22 PM - _I3^ RELATIVISM

- Type of work Any programming languages (scripts, C, etc), Unknown added