Discover
<ldm integration>

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Introduction

Generally Linux provides driver support for many different devices out of the box, but there are many other devices which are not there. One of the reason could be, linux is used at variety of places and it may happen that some devices may not be used in 95% of the devices. In that case, it is generally assumed that the user will install driver for that device on their own, but it may happen the user is not well acquainted about it. Thus we required a system which can suggest packages for their these devices, based on appstream cache, depending upon their distribution.

The system should be able to provide following things:

1. Automatic Detection of different types of devices connected via different interfaces like
    a. HID
    b. USB
    c. PCI
    d. Bluetooth
    e. DMI

2. Extracting suitable package name from the detection results and suggest suitable packages.
3. Notifying the user about these packages/driver and asking for installation.

Hopefully, Solus-Project Devs have already made a distro-agnostic library “Linux-Driver-Management (L.D.M)” which is able to do point 1 and 2. It uses modaliases file for extracting information. LDM 1.0 was recently released which provides following features:

- Distro Agnostic
- GObject-style
- Works with GIR enabled language (example C,python,Go,Vala)

LDM provides the following capabilities :

- Device enumeration
- Hotplug support
- Device Abstraction
- Matching of driver/packages

Other then these LDM also provides Auto GLX configuration but it has many constraints which are listed below:

- Distribution should support modern libgl management
- End User can have only **one** variant of proprietary driver

Also the support for GLX management is in a very early days which is why I would be excluding it from this document.

Project Goals

- Dynamic driver installation for devices
- Abilities to search on distributions appstream
- Easy GUI & Pop up Notification for driver installation

Implementation

Case - 1

Currently ldm provides library functions to listen for drivers and hotplugs, but there is no daemon specifically made for it. We can create a custom daemon, specifically for driver management.This may look like this.

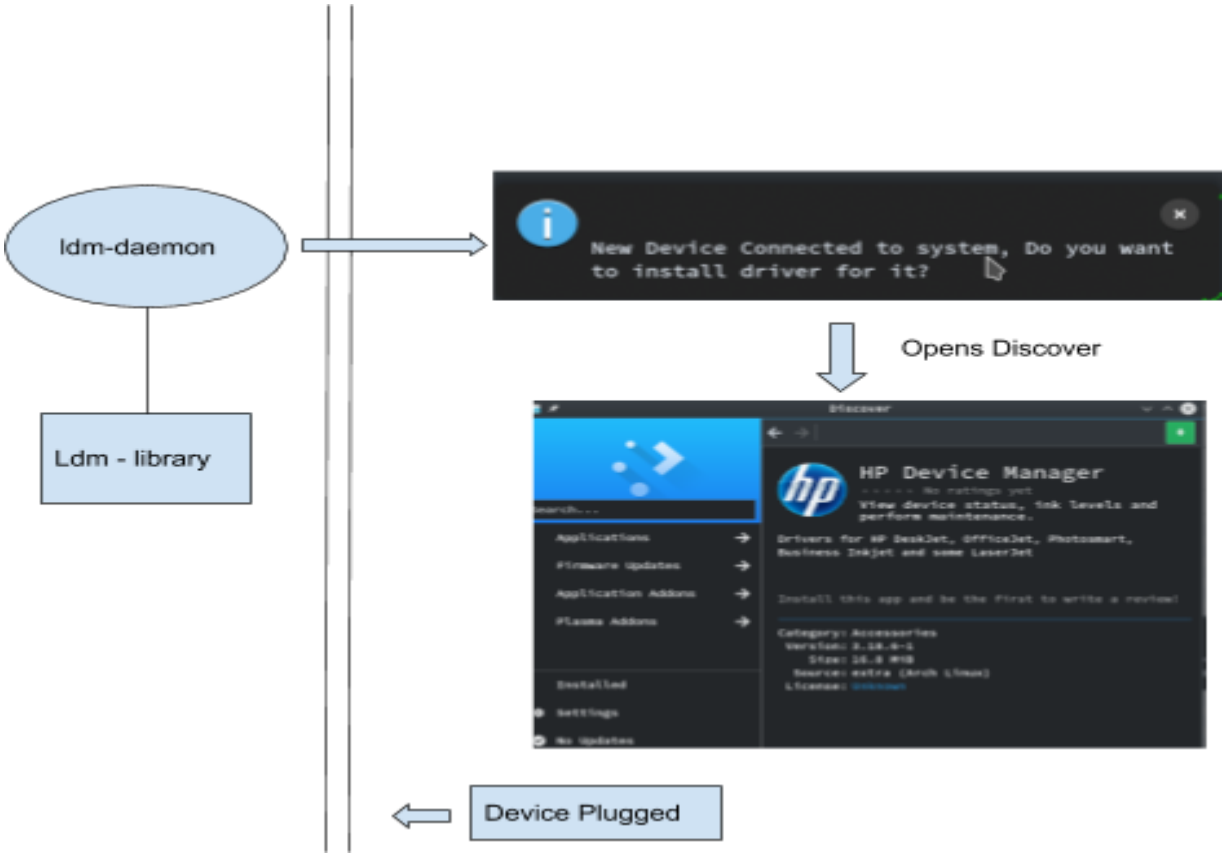
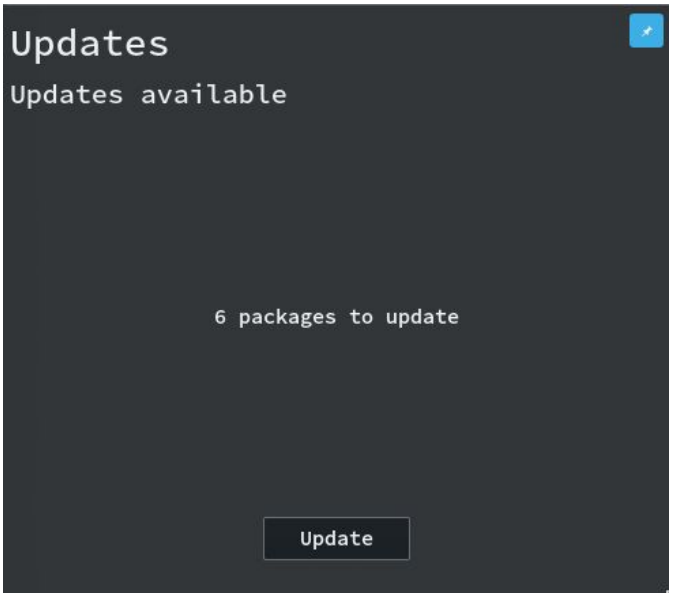


Fig.1 Active Hotplug Detection

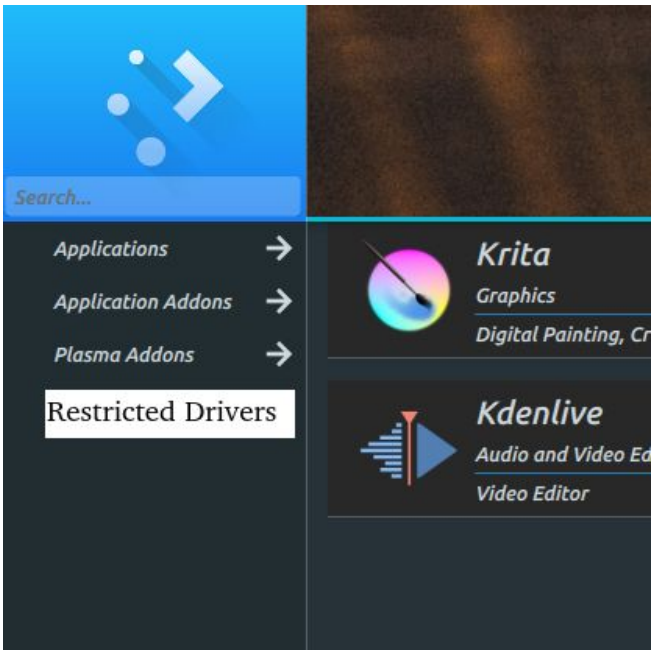
Case - 2

We Could use the pk-update-notifier as our detection agent, We need to modify this plasmoid , which can act as async listener for new devices and search for suitable packages in packagekit cache.



Case - 3

We Could add a new “Device driver” in the discover and display devices whose driver can be found with ldm backend and package kit.



Timeline

Phase 1 July 12-July 20	June 12-June 15	Cmake Integration of libs
	June 16-July 20	Device enumeration
Phase 2 July 14-Aug 14	July 20-July 26	Implementing Notification
	July 27-Aug 3	Searching for Suitable Driver
	Aug 5 - Aug 10	Improving User Documentation
After Aug 14	Buffer Time	Buffer Time

About Me

Personal Information

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Important Links

Github	https://github.com/abhijeet2096
Launchpad	https://launchpad.net/~abhijeet2096
Askubuntu	https://askubuntu.com/users/587611/abhijeet-sharma
Phabricator	https://phabricator.kde.org/p/abhijeet2096/
Kde Identity	https://identity.kde.org/index.php?r=people/view&uid=abhijeetsharma
LinkedIn	https://www.linkedin.com/in/abhijeet2096/
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