
Function

Enhances the performance and power management on NVIDIA Optimus Laptops, by properly selecting when to use each GPU.

The NVIDIA GPU runs the whole desktop, while the Intel/AMD GPU acts as relay between the NVIDIA GPU and the screen.

More info at the wiki.

Contributing

1. Thoroughly test code
2. Open a pull request
3. Mention the user: @es20490446e
4. Accepted in two days

Supported platforms

- Graphic server: only Xorg, no Wayland
- Display managers : SDDM, LightDM, GDM, custom, none

Installation

Remove similar tools: * **Custom Xorg config** : optimus-manager works by auto-generating a Xorg configuration file and putting it into `/etc/X11/xorg.conf.d/`. If you already have custom Xorg configuration files at that location or at `/etc/X11/xorg.conf`, it is strongly advised that you remove anything GPU-related from them to make sure that they do not interfere with the GPU switching process.

- **Nvidia-generated Xorg config** : Similarly, if you have ever used the `nvidia-xconfig` utility or the `Save to X Configuration File` button in the Nvidia control panel, a Xorg config file may have been generated at `/etc/X11/xorg.conf`. It is highly recommended to delete it before trying to switch GPUs.
- **Bumblebee** : optimus-manager is incompatible with Bumblebee since both tools would be trying to control GPU power switching at the same time. If Bumblebee is installed, you must disable its daemon (`sudo systemctl disable bumblebeed.service`, then reboot). This is particularly important for Manjaro users since Bumblebee is installed by default.

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- **nvidia-xrun** : if you have previously installed nvidia-xrun by following instructions on the Arch Wiki, make sure all its configuration files are removed. See issue (<https://github.com/Askannz/optimus-manager/issues/135>).
 - **GPU monitoring apps** : if you have an application (or tray widget) that automatically monitors the Nvidia GPU for things like load, temperature, VRAM usage, etc, make sure it is not running before switching to integrated mode. Those applications work by constantly polling the nvidia driver, which may prevent it from being unloaded by optimus-manager.

If using gdm: - install gdm-prime - At `/etc/gdm/custom.conf`, remove the `#` before `WaylandEnable=false`

In any case: - Install the NVIDIA drivers - Install the optimus-manager package. In the AUR: `optimus-manager-git` - Check daemon status with: `systemctl status optimus-manager`

Usage

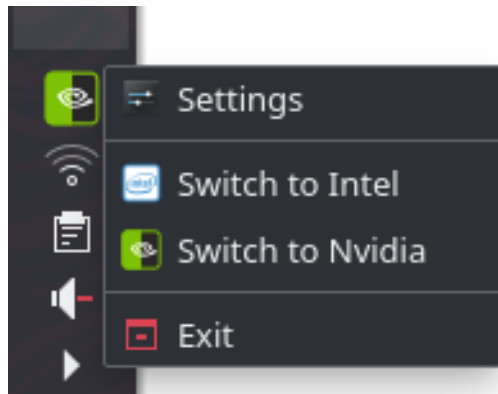
Run `* optimus-manager --switch nvidia` to switch to the Nvidia GPU `* optimus-manager --switch integrated` to switch to the integrated GPU and power the Nvidia GPU off `* optimus-manager --switch hybrid` to switch to the iGPU but leave the Nvidia GPU available for on-demand offloading, similar to how Optimus works on Windows. See the Wiki for more details.

WARNING : Switching mode automatically logs you out, so make sure you save your work and close all your applications before doing so.

Auto-logout is supported for the following desktop environments/window managers: KDE Plasma, Gnome, XFCE, Deepin, i3, Openbox, AwesomeWM, bspwm, dwm, LXDE, QTile, Xmonad, herbstluftwm. You can disable this feature in the configuration file. In that case, the GPU switch will not be effective until the next login.

You can also specify which GPU you want to be used by default when the system boots, by setting `startup_mode` in the configuration file at `/etc/optimus-manager/optimus-manager.conf`.

Note that switching to and from “integrated” mode can be a little unstable, due to having to load/unload the nvidia kernel modules and change the power state of the card. If you’re experiencing stability issues, the safest way to use this mode is to boot straight into it using the `startup_mode` config options or the kernel parameter (see below).



System Tray App

The program `optimus-manager-qt` provides a system tray icon for easy switching. It also includes a GUI for setting options without editing the configuration file manually.

AUR package : `optimus-manager-qt`

Unofficial Gnome Shell extensions are also available :

- `optimus-manager-argos` (unmaintained).
- `optimus-manager-indicator`

Kernel parameter As an alternative to `startup_mode`, `optimus-manager` also allows you to set the startup GPU mode using a kernel parameter. This is useful if you want to create multiple entries in your bootloader with different GPU startup modes (for instance a “battery-saving” mode that starts with the integrated GPU, and a “gaming” mode that starts with Nvidia).

Simply add `optimus-manager.startup=MODE` to your kernel parameters list, where `MODE` can be any startup mode. Note that this parameter overrides whatever startup mode was set in the config file.

Also note that this parameter only affects which GPU your desktop session starts with ; it has absolutely no effect on the boot process before that, because `optimus-manager` has no control over it.

See this project to automatically create corresponding boot entries in GRUB: <https://github.com/hakasapl/optimus-manager-grub>

Power management

Since version v1.2, power management is disabled by default, so the Nvidia GPU will stay powered on (consuming energy) until manual configuration is done. This choice was made because there is no catch-all configuration that works for all laptop models, and incorrect configurations often break the boot process.

Please refer to the guide on power management in the Wiki.

Configuration

Main configuration file The default configuration file can be found at `/usr/share/optimus-manager.conf`. Please do not edit this file ; instead, edit the config file at `/etc/optimus-manager/optimus-manager.conf` (or create it if it does not exist).

Any parameter not specified in your config file will take value from the default file. Remember to include the section headers of the options you override.

Please refer to the comments in the default config file for descriptions of the available parameters. In particular, it is possible to set common Xorg options like DRI version or triple buffering, as well as some kernel module loading options.

No config changes will be effective until you computer is rebooted or the `optimus-manager` service is restarted.

Extra Xorg configuration You can also add your own options to the auto-generated Xorg config by editing the files at `/etc/optimus-manager/xorg/`. Anything you write in those files will be copied to one of the “Device” sections of the auto-generated Xorg configuration at `/etc/X11/xorg.conf.d/10-optimus-manager.conf`. There are specific files for specific modes and GPUs; for instance, `/etc/optimus-manager/xorg/hybrid-mode/integrated-gpu.conf` only applies to the Xorg config of the integrated GPU in “hybrid” mode.

Display setup scripts If you need the display manager to run some specific commands to set up the display (to force a particular resolution, for instance), you can write them to `/etc/optimus-manager/xsetup-integrated.sh`, `/etc/optimus-manager/xsetup-nvidia.sh` and `/etc/optimus-manager/xsetup-hybrid.sh`.

Custom enable/disable scripts for Nvidia Finally, if you need to run some specific commands prior to enabling or after disabling the nvidia graphics card (for example, to manually enable the card if the available power management methods are not supported), you can write them to `/etc/optimus-manager/nvidia-enable.sh` and `/etc/optimus-manager/nvidia-disable.sh`.

FAQ / Troubleshooting

- FAQ section