

Project Proposal: Mutter Wayland without X11

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Introduction

My name is Armin Krezović (IRC: Black_Prince, mail: krezovic.armin@gmail.com), and I am final year engineering student at Faculty of Electrical Engineering, University of Tuzla, Bosnia and Herzegovina, currently living in town of Lukavac, Bosnia and Herzegovina.

Project Scope

I am interested in making Mutter Wayland compositor work without XWayland, with main goal being “Start Mutter without ever spawning XWayland”. This work should bring Mutter and GNOME closer to being a pure Wayland desktop environment.

To accomplish this, at least the following tasks need to be done:

- Stop spawning XWayland at startup
- Figure out which parts of the code need to run under X11
- Prevent X11-only code from running when XWayland is not available

If the main goal is reached while there's still GSoC time left, it can be extended to the following tasks

- Start XWayland less mutter and support Wayland clients
- Survive XWayland crashing and restarting
- Start Mutter and spawn XWayland on-demand, when an external X11 client starts
- All (some) of the above tasks, repeated for GNOME Shell.

Carlos Garnacho and Jonas Ådahl have agreed to be my mentors for this task and helped to set the goals above.

Below is an approximate timeline of how the project would be approached, in two week increments

- May 30th - June 11th: Analyze the code and discuss implementation details with project mentors
- June 12th - June 25th: Start implementing the code in way it was discussed, preparing for first midterms
- June 26th - July 9th: Continue working on the code, with goal to make the compositor not crash before second midterms
- July 10th - July 23rd: Fix any regressions introduced in porting process, try to get a demo up and running before second midterms
- July 24th - August 6th: If the goal of getting the demo up and running wasn't reached before midterm deadline, continue working on it until it's ready. Make compositor not crash when an app get started
- August 7th - August 20th: Continue on fixing the compositor to not crash when an app gets started, if not completed. Fix any other bugs introduced in the process. Start working on other goals in the proposal
- August 21st - August 29th: Prepare for final terms, clean up the code, finish working on other goals if any were started

After accomplishing the main task, the mutter compositor example will be able to start without XWayland running and not crash, and do so in an always reproducible manner.

Why am I the right person for this task?

Main reason behind all this is that I want to give something back after being GNOME user for number of years. Another reason is self-improvement - I want to learn GObject/GTK+ programming, which I never did before. I was distribution maintainer for a long time (maintaining GNOME build instructions for Linux From Scratch project), so building full GNOME desktop isn't a problem for me. I know how most of GNOME components are tied together, so it won't be hard to know where to look for something that needs fixing. I have also worked on Weston, as part of last year's Google Summer of Code, where I was responsible for making Weston work without any outputs connected and exposing output configuration to user. The work that was done was covered on my personal blog, which can be found at <https://armin-gsoc.blogspot.com>. Merged contributions can be found in weston git repository, which can be browsed at:

<https://cgit.freedesktop.org/wayland/weston/log?qt=author&q=krezovic.armin>

I have done the necessary work which required me to make a small contribution to the project I am going to work on. It has already landed, which can be seen at:

<https://git.gnome.org/browse/mutter/log/?qt=author&q=krezovic.armin>

Dedication

Since I'm still attending classes and I need to study to pass them, I won't be able to dedicate a lot of time to the project during semester (which ends mid June). I will dedicate at most 20 hours a week during that period, where most of that time will be on weekends. I'll still be available on working days to send patches, respond to feedback, communicate with people who are only available during their work hours, etc. After the classes and terms are done, I will dedicate more time (up to 40 hours a week, more if needed), which should be enough to compensate for all the time I may lose during the semester and accomplish all the tasks listed above.

Communication

I have worked on a project where developers were from different time zones and countries and I had no difficulties with that. Although I speak Bosnian language, I am confident that my English is good enough that I can use it to communicate with people related to the project. I also have no problem in communicating via email, IRC or any kind of reviewboard or bugzilla. I'm familiar enough with git, so I can easily set up a fork for the project where the progress can be tracked by mentor and other interested parties.

Per GNOME project requirements, I have created a blog which I will use to report on my progress, which can be found at <https://armin-gnome.blogspot.com>. The progress will be reported on a weekly basis, at the end of the week.