Linux Distribution's State of Gaming

A Case Study of Fedora Workstation

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About the speaker

Works as

Objective Representative for the Fedora Websites and Apps, Fedora Council

Software Engineer, Red Hat Community Platform Engineering Team

Presented and written

Talks/workshops around videogaming on GNU/Linux distributions in various conferences

Numerous articles around testing videogame performance on GNU/Linux distributions

Source:
https://fedoramagazine.org/fedora-workstations-state-of-gaming/
https://fedoramagazine.org/fedora-workstation-state-of-gaming-far-cry-5/
https://youtu.be/to-hXY9S9Pw
https://youtu.be/u9aLwjhYSR0

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To get started with the presentation
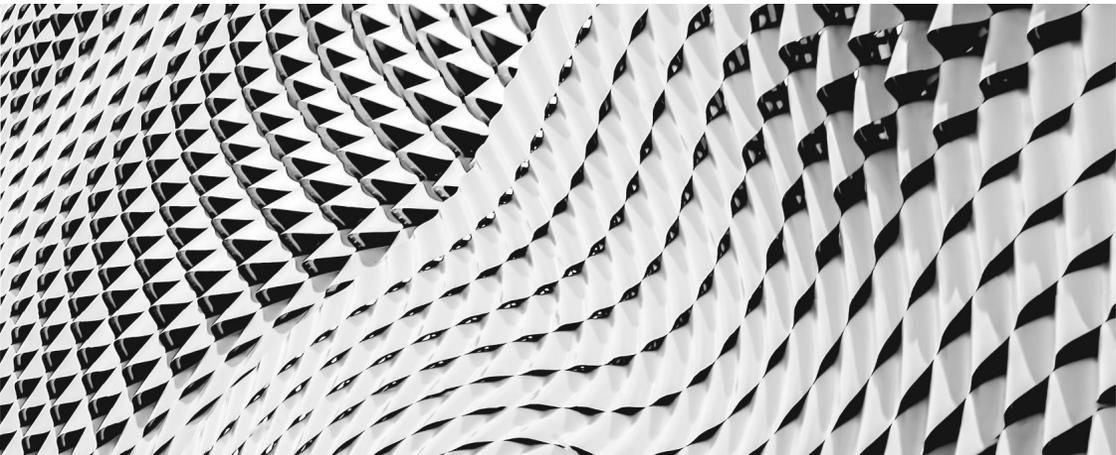
Lettuce ask ourselves these three questions

Videogaming on Linux Distributions
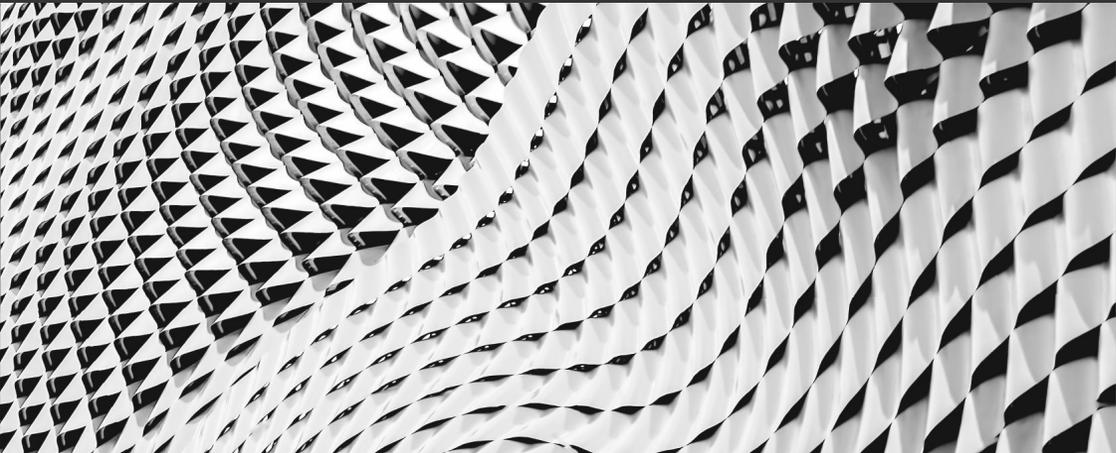
Which three questions you say?

- Is it
  popular?

- Is it
  convenient?

- Is it
  performant?

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Yes, it certainly is POPULAR*

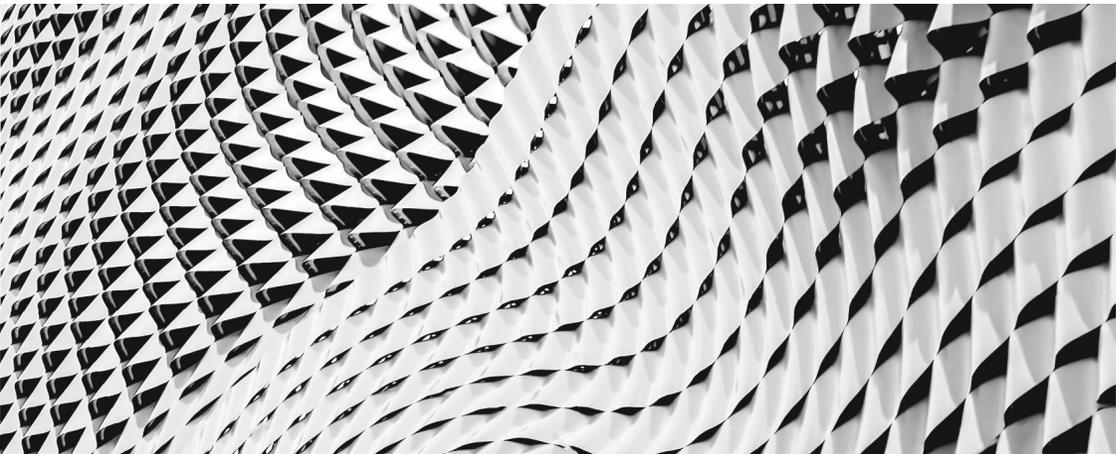**Emulation**

- **PPSSPP**
- **RetroArch**
- **Nestopia**

Operating systems

- **Batocera Linux**
- **Lakka**
- **Retropie**

Consoles

- **NES Classic Edition**
- **Android Phones**
- **Steam Deck**

*Conditions apply LOL

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Yes, it certainly is CONVENIENT*

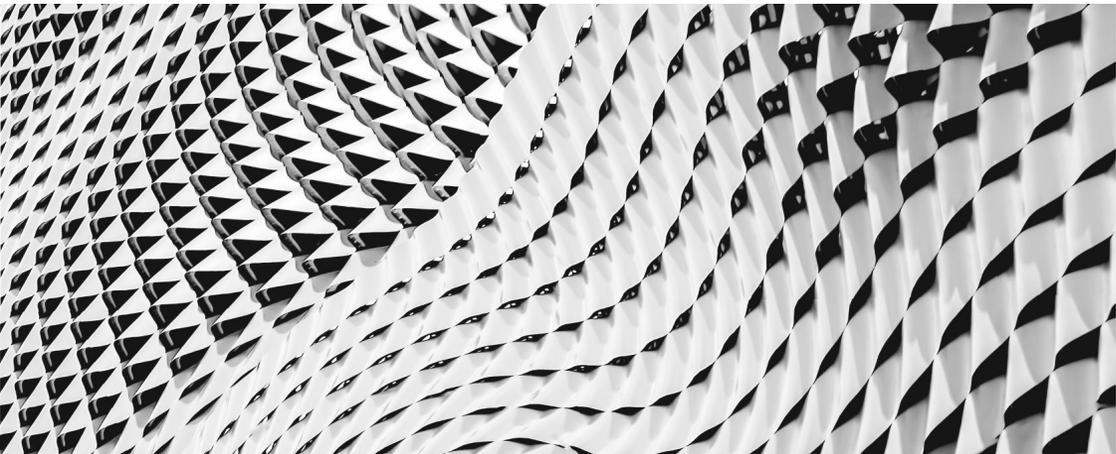More config based installs

- **Barebones WINE**
- **RetroArch**

Little config based installs

- **Lutris**
- **Bottles**

Least config based installs

- **Android Phones**
- **Steam Deck**

6

*Conditions apply LOL

Yes, it certainly is PERFORMANT*

Supported videogames perform in an average at least **15-30% better*** than other operating systems

Near native speeds are achieved with the use of **virtualization** of a hardware

Source:
https://fedoramagazine.org/fedora-workstations-state-of-gaming/
https://fedoramagazine.org/fedora-workstation-state-of-gaming-far-cry-5/

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But wait a minute, if it is popular, convenient and performant

Why do you have those asterisks there?

Popular but
with a tiny market share
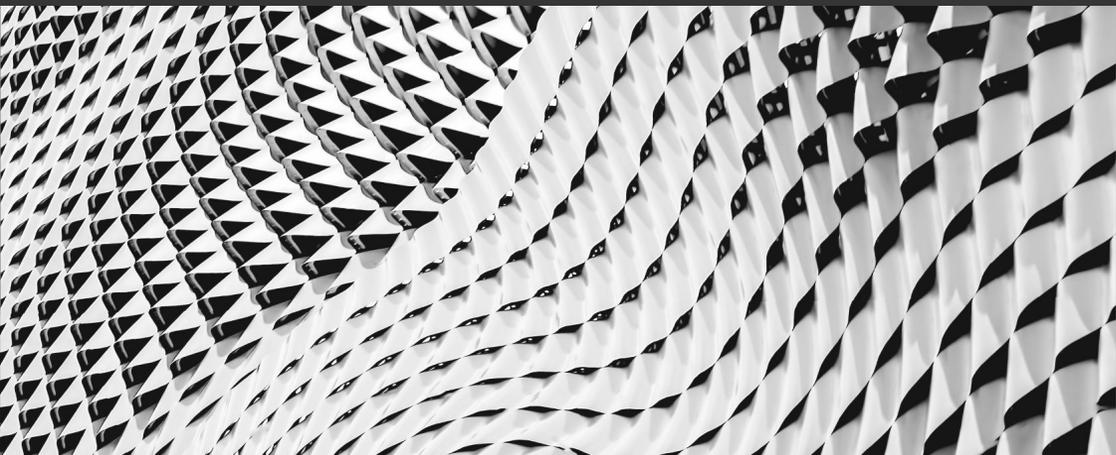
- Market share of
  around 1.38%*
  in recorded gaming usage

- Other uses go
  unaccounted for
  in no telemetry

- Third-party devs with
  tiny native builds
  for Linux distributions

9

Source:
https://www.gamingonlinux.com/steam-tracker/

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Hesitant with the popularity

for a valid reason

"Umm... Linux Gaming is nice and all but all my friends actually play their videogames on Windows so I can't quite... Sorry!!!!"

—

Person Unknown
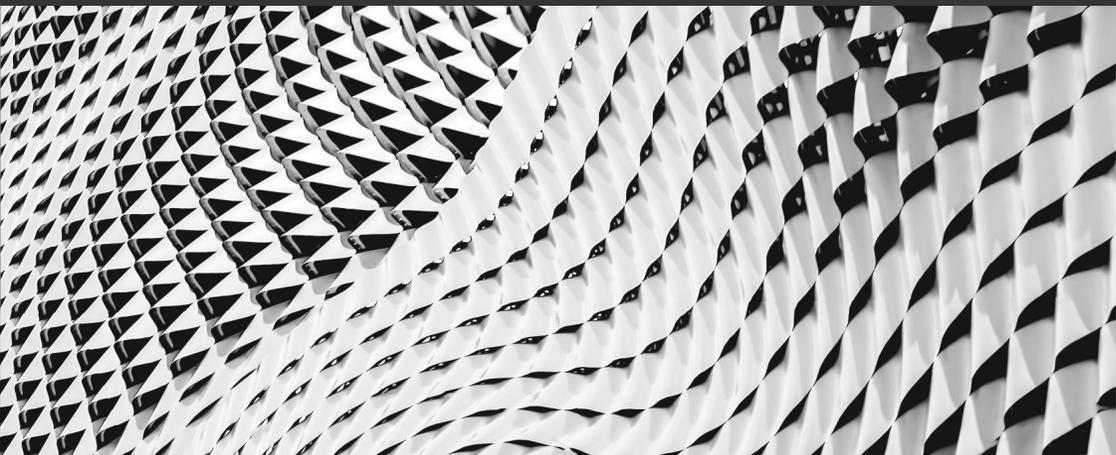Some Battle Royale fan

"Noo... I tried to install the videogame, tried to run it right after and bam... the stupid anti-cheat does not let me through!!!!"

—

Player Anonymous
Some Racing enjoyer

Source:
I have been an evangelist for videogaming on GNU/Linux distributions and the people that I am quoting here are real people.

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Convenient but
difficult at the same time

extensive config

- Few videogames run **as is** without any major tweaking for running.

- Some videogames need **extensive config** for them to work the way they should.

- Few videogames do **not work** because the devs do not want them to.

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Uncomfortable with the convenience

for a valid reason

"Look, I tried to follow through all the steps that you mentioned – but there is so many of them and I barely get some time to play"
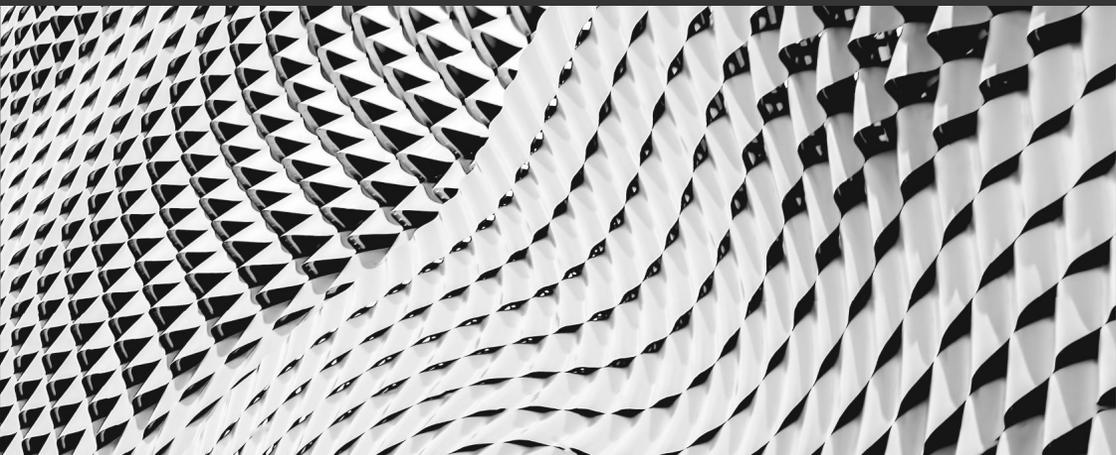
—

Person NoName
Some Adventure fan

"I am gonna settle for the performance because I do not want to keep trying DXVK releases and WINE versions to tailorfit this"

—

Player Redacted
Some Stealth enjoyer

Source:
I have been an evangelist for videogaming on GNU/Linux distributions and the people that I am quoting here are real people.

Performant but
takes time to be one

- One WINE distribution can **run comfortably** some videogames.

- The same WINE dist will **not work at all** for other videogames.

- Some publishers **do not support** execution on modified env.

Unsatisfied with the performance

for a valid reason

"Woah... Look at these framerates! This almost twice as much as I get on other devices but what is with this artifacting?"

—

Person Who
Some Action fan

"You know, there used to be a native version of the videogame created for Linux distributions but they pulled it out!"

—

Player Stranded
Some Strand-type enjoyer

Source:
I have been an evangelist for videogaming on GNU/Linux distributions and the people that I am quoting here are real people.

But hold on a sec! If it is all complains now

Have we not been doing a good work?

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Quite the opposite actually, to be honest

The community has been doing a great job
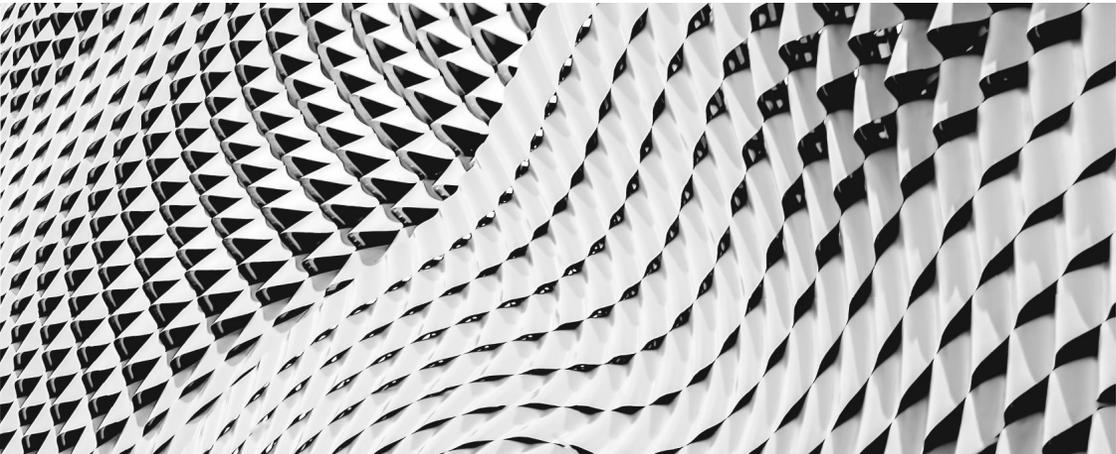
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But with the silver lining and all

There are things that we can do better

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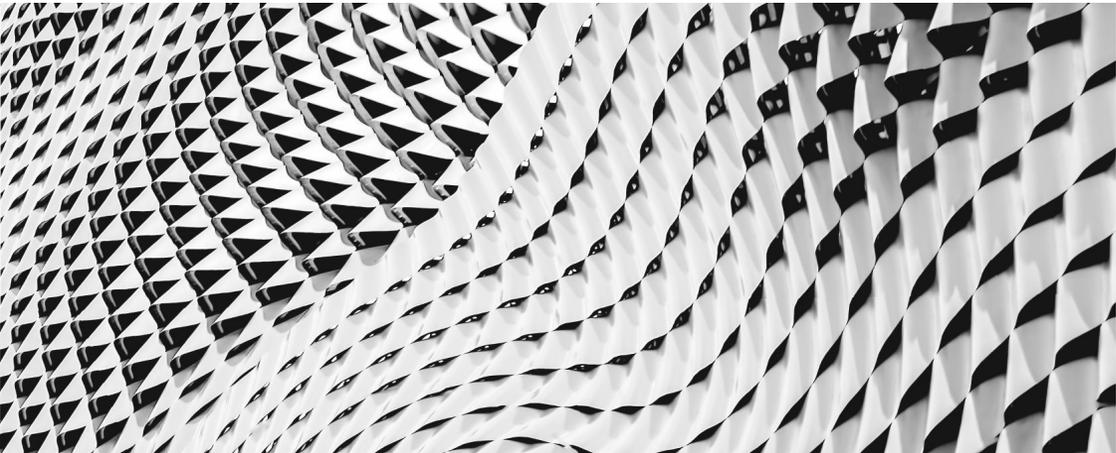
Establish reliable userbase metrics for developers

*[1 of 6] (Helps **popularity**)*

- People know about those who play videogames with Steam PC and Steam Deck.

- Do they know about those who play on Lutris, Bottles or emulators?

- Is telemetry really as bad as we make it sound or can we do something?

# Account for the feedback and promote participation

*[2 of 6] (Helps **popularity**)*

- The users should be able to be decide what advancements a tooling should have.

- An empathetic perspective of the users would help understand the requirements.

- If people are heard and communicated to, they would be more inclined to contribute.

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# **Evaluate** the usability of the tools we have

*[3 of 6] (Helps **convenience**)*
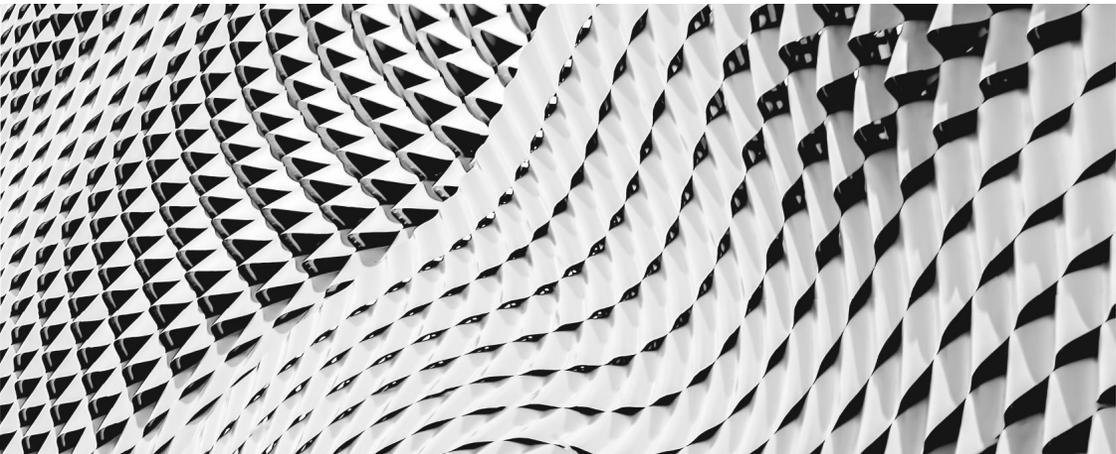
- It does what it is supposed to do – why bring about a change to our tooling?

- If it is not easy to find or easy to make, we cannot expect people to work on it for videogames.

- Can we make it convenient so that people can focus only on their videogames?

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# Abstract the complex but open for the curious

*[4 of 6] (Helps **convenience**)*
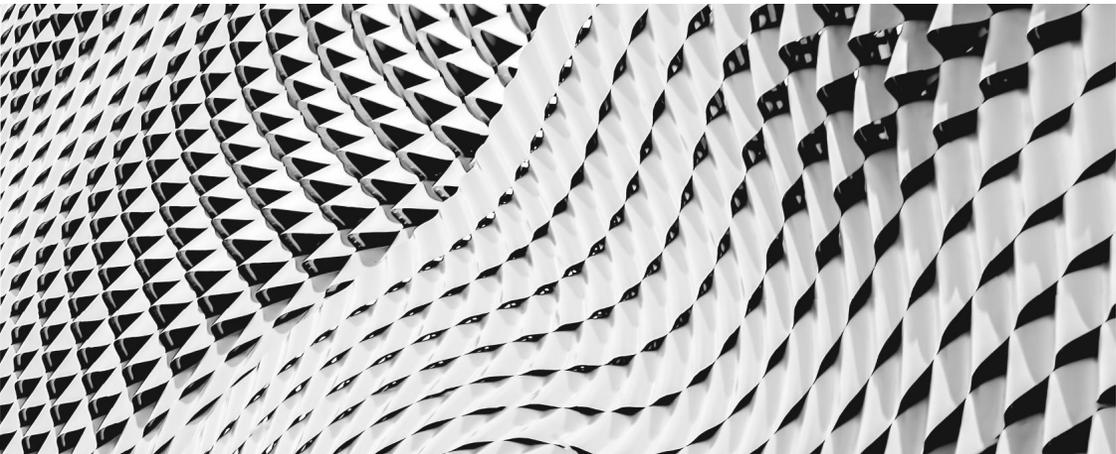
- Having the ability to customize from the get-go is cool for those who need it.

- But show those dials to folks who want things easy and you might scare them away.

- It is important to strike the balance between what is simple and what is complicated.

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Package as much tools and services needed

*[5 of 6] (Helps **performance**)*
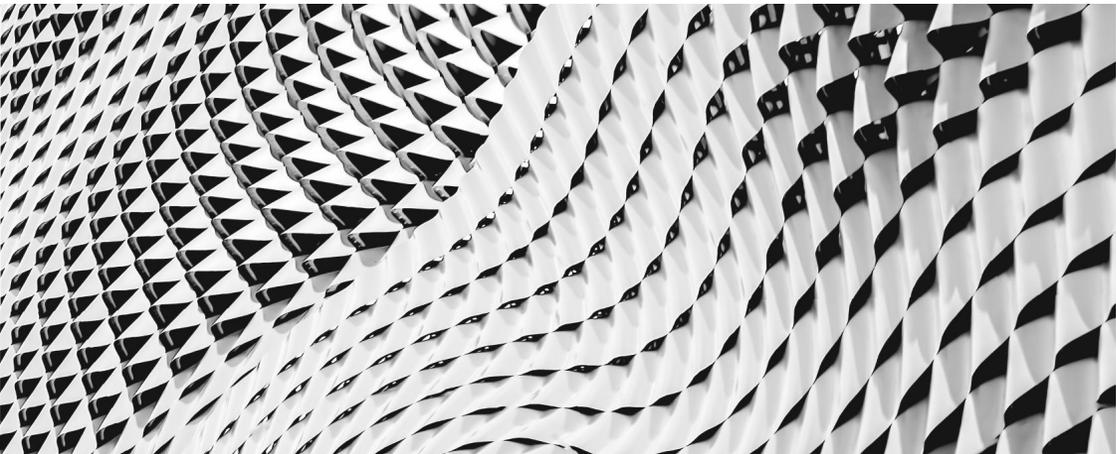
- Drivers, Codecs, Kernel Modules, Services, Shaders and everything else in between!

- People are here to play videogames and not build software from source.

- Availability of support natively paves way for user retention in a GNU/Linux distro.

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Build standard workflows to test and quantify conduct

*[6 of 6] (Helps **performance**)*
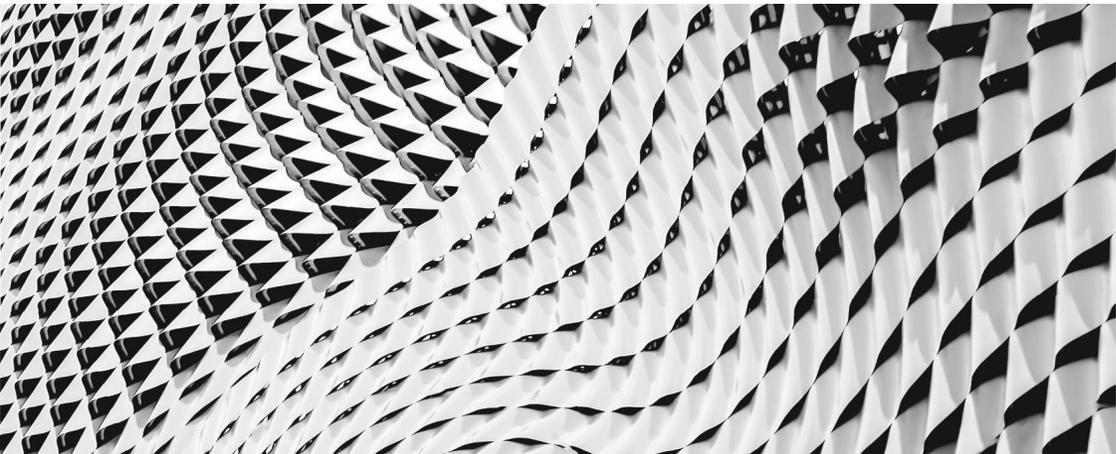
- A standard benchmarking workflow would be able to reliably test videogames.

- Helps detecting frame rate inconsistencies and visual artifacting even in apparent goodness.

- If people know that distributions provide for a better experience, they would use it.
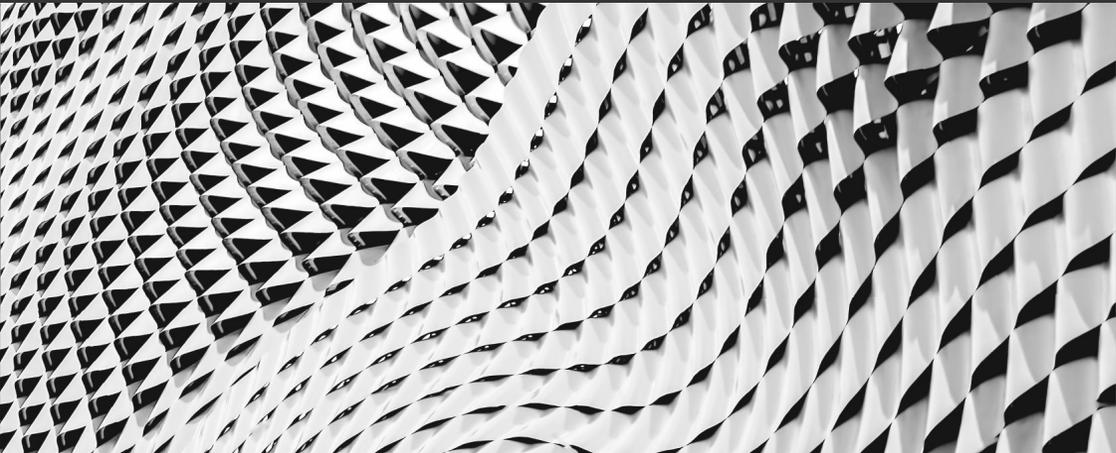
Now let us look into how things are

In our case study of Fedora Workstation

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Platform of choice to extend your own

- Projects like Nobara Workstation have extended the base Fedora Linux provides.

- Meaningful additions ensure that it becomes accessible for folks to play their videogames.

- Heavily popular among developers working on the Bottles and Lutris for the leading-edge nature.

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Required tooling are readily available
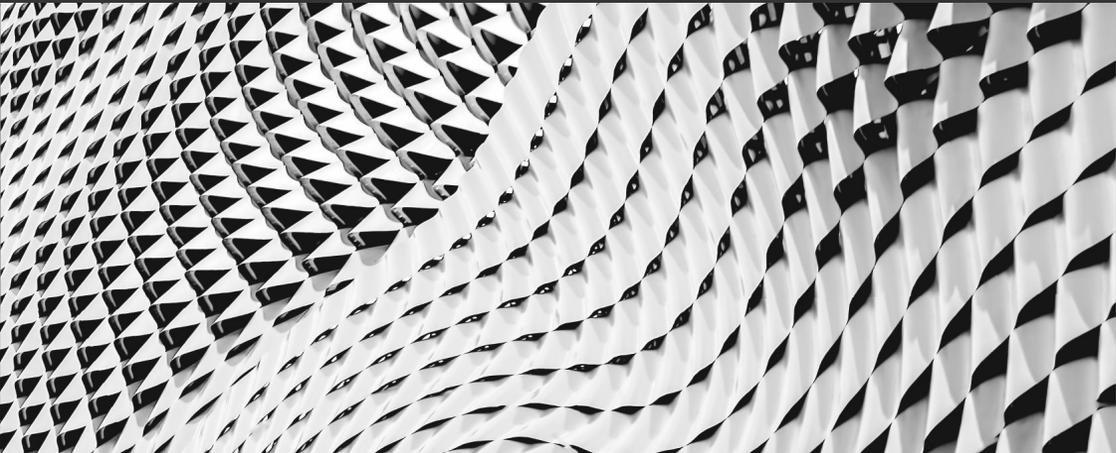
- The open-source AMD drivers work out of the box and RPM Fusion repos provide for NVIDIA drivers.

- Bottles is available as a Flatpak and Lutris is available as an RPM package in official repos.

- The default GNOME desktop keeps the workflow smooth and unintrusive.

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Consistently performant across the board
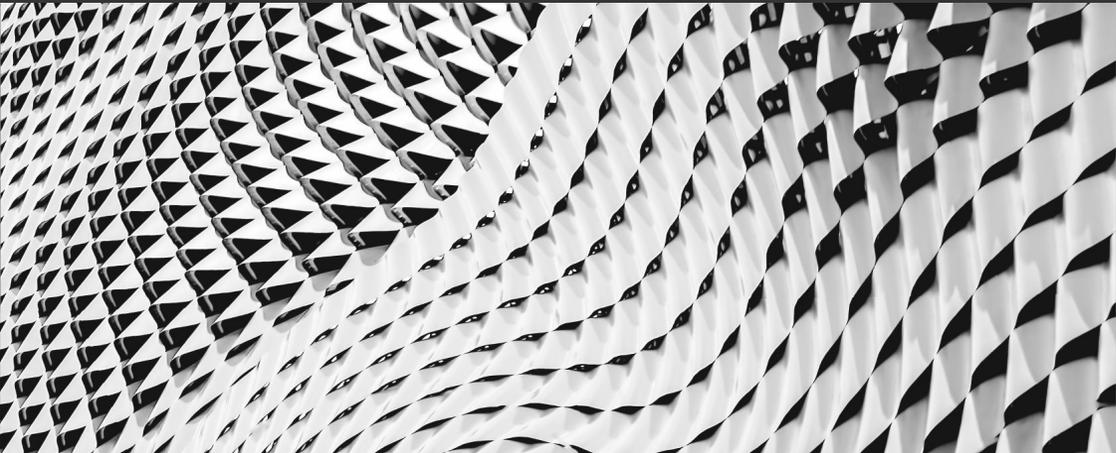
- Supported videogames work extremely well with configurations done right and in a modular manner.

- The latest and greatest versions of kernel and the software are made available for trying out.

- Customizable enough to further minimize the footprint to dedicate resources to videogames.

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Thank you!

We would love to answer your questions.

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