



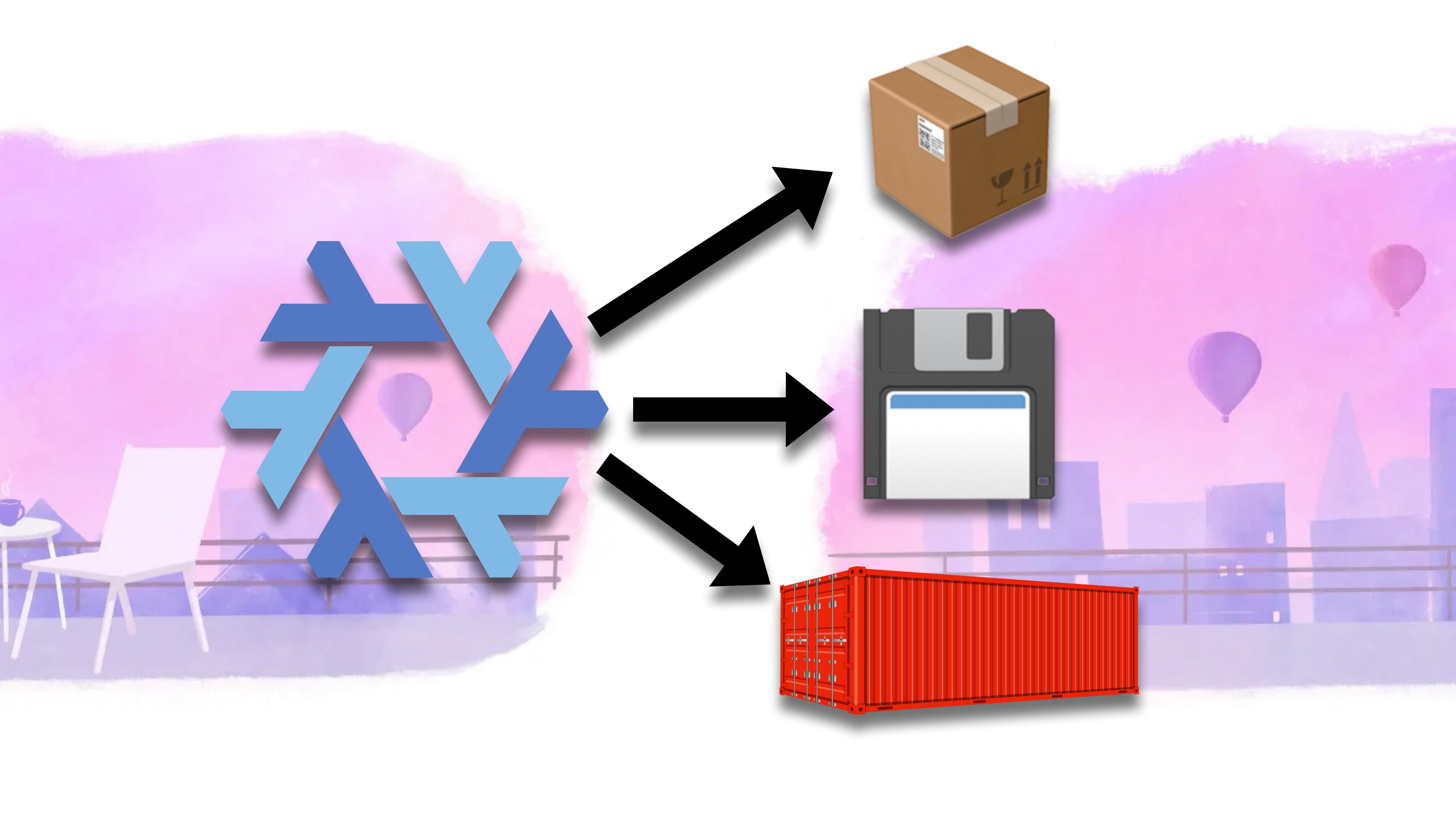
Nix is a better
Docker image
builder than
Docker's image
builder

Xe laso



NixOS

A large, bold, black sans-serif font word "NixOS". The letter "N" is notably taller than the other letters. In the background, there is a window frame showing a landscape with a ship and hot air balloons. In the foreground, there is a pink flower with green leaves.





About the Author

- Xe Iaso (z yah-soh)
- Senior Technophilosopher @ fly.io
 - Developer Relations
- Writes a lot
- Committed Nix/NixOS user
- Ottawan 



Xe Iaso

Senior Technophilosopher - Ottawa, CAN



I'm Xe Iaso, I'm a technical educator, [conference speaker](#), [twitch streamer](#), vtuber, and philosopher that focuses on ways to help make technology easier to understand and do cursed things in the process. I live in Ottawa with my husband and I do developer relations professionally. I am an avid writer for my [blog](#), where I have over 400 articles. I regularly experiment with new technologies and find ways to mash them up with old technologies for my own amusement.

Recent Articles

- 03/06/2024 - ["No way to prevent this" say users of only language where this regularly happens](#)
- 03/03/2024 - [How to unbreak Dolphin on SteamOS after the QT6 update](#)
- 03/01/2024 - [XeDN on Tigris](#)
- 02/19/2024 - [Behind the scenes of "The Layoff"](#)
- 02/17/2024 - [The Layoff](#)

Notable Publications

- [How to Make a Progressive Web App From Your Existing Website](#)

An article summarizing how easy it is to make a webpage into an installable Progressive Web App using APIs available in the most commonly used browsers.

- [Palisade: Version Bumping at Scale in CI](#)

The release post for Palisade, a tool to automate version bumping, release tagging and more.

- [An epic treatise on DNS, magical and otherwise](#)

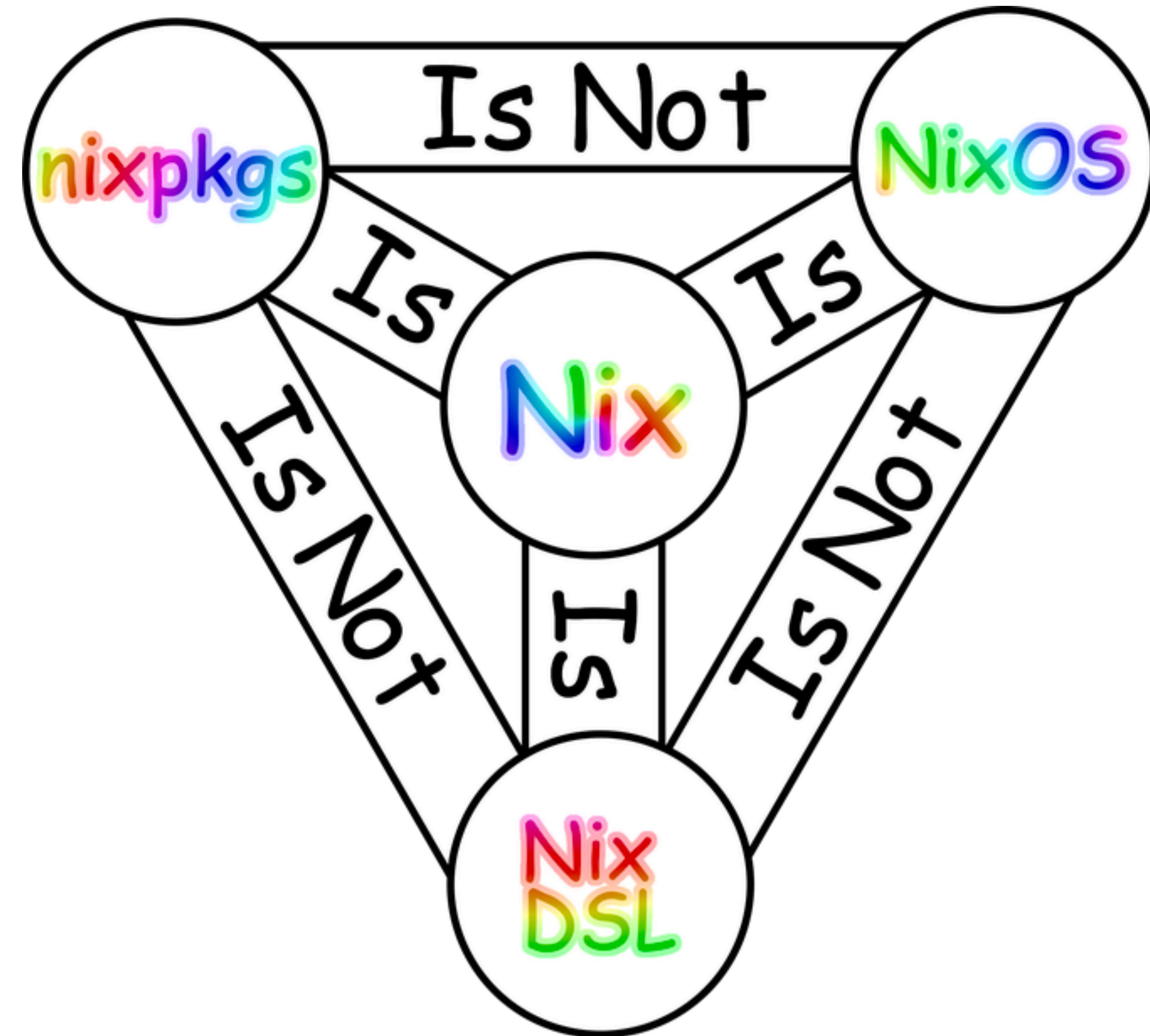
A deep dive into all of the problems that DNS has at scale and how Tailscale makes most of those problems go away, with the rest of them being easier in comparison.

- [Weaponizing hyperfocus: Becoming the first DevRel at Tailscale](#)

A brief history of the developer relations team at Tailscale and how I found myself creating it. I cover one of my largest internal demons and how I managed to wield it as a force of empowerment rather than a limiting force of pain.

Agenda

- What is Nix?
- Why should I care?
- How to make a Go program
into a Docker image
- The subtle magic
- Conclusion



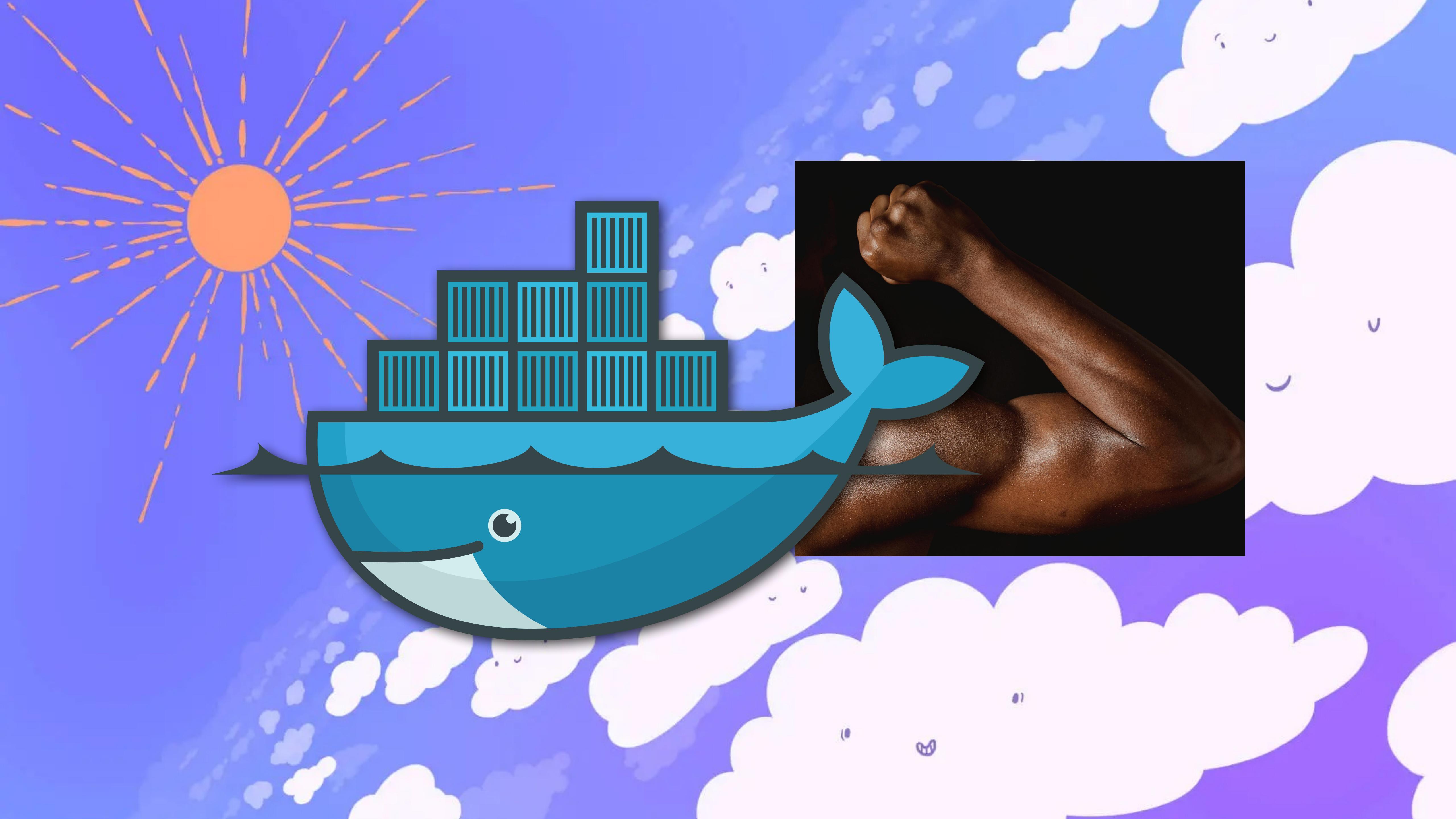




This cannot continue



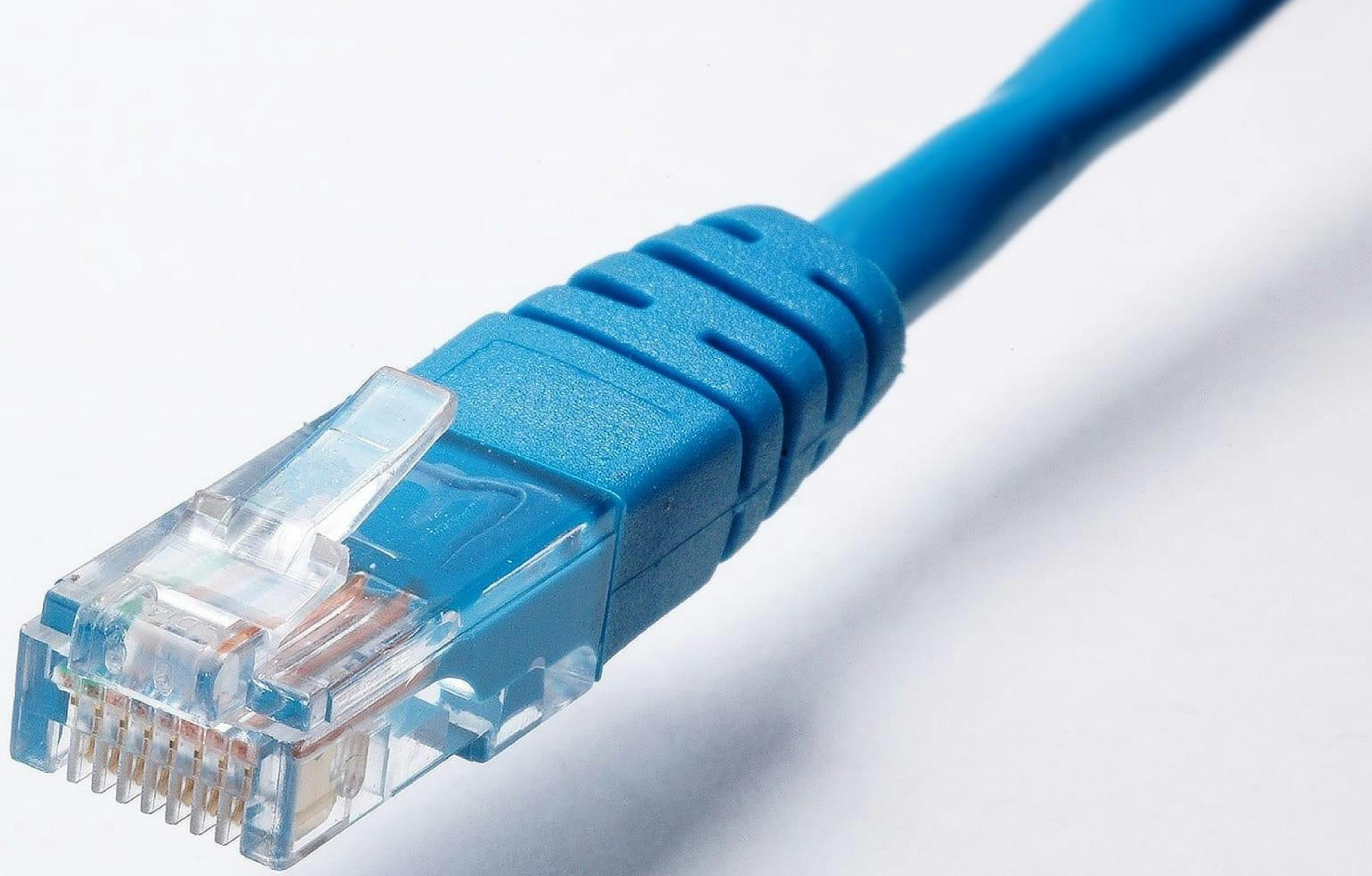




Determinism









vevo











Steps

- Package Go program with Nix
- Transmute into Docker image
- Load into Docker daemon
- Push it to registry
- ???
- Profit!

```
bin = pkgs.buildGoModule {  
    pname = "douglas-adams-quotes";  
    inherit version;  
    src = ./.;  
    vendorHash = null;  
};
```

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};
```

```
[pneuma] ~/c/X/douglas-adams-quotes
```

```
cadey:users@pneuma ~/c/X/douglas-adams-quotes main ✓ ./rw
$ nix build .#bin
cadey:users@pneuma ~/c/X/douglas-adams-quotes main ✓ ./rw
$ ./result/bin/douglas-adams-quotes --help
Usage of ./result/bin/douglas-adams-quotes:
  -addr string
    listen address (default ":8080")
  -slog-level string
    log level (default "INFO")
cadey:users@pneuma ~/c/X/douglas-adams-quotes main ✓ ./rw
$ file ./result/bin/douglas-adams-quotes
./result/bin/douglas-adams-quotes: ELF 64-bit LSB executable, x86-64, version 1
(SYSV), dynamically linked, interpreter /nix/store/ksk3rnb0ljsx8gngzk19jlmbjyvac4
hw6-glibc-2.38-44/lib/ld-linux-x86-64.so.2, not stripped
cadey:users@pneuma ~/c/X/douglas-adams-quotes main ✓ ./rw
$ █
```

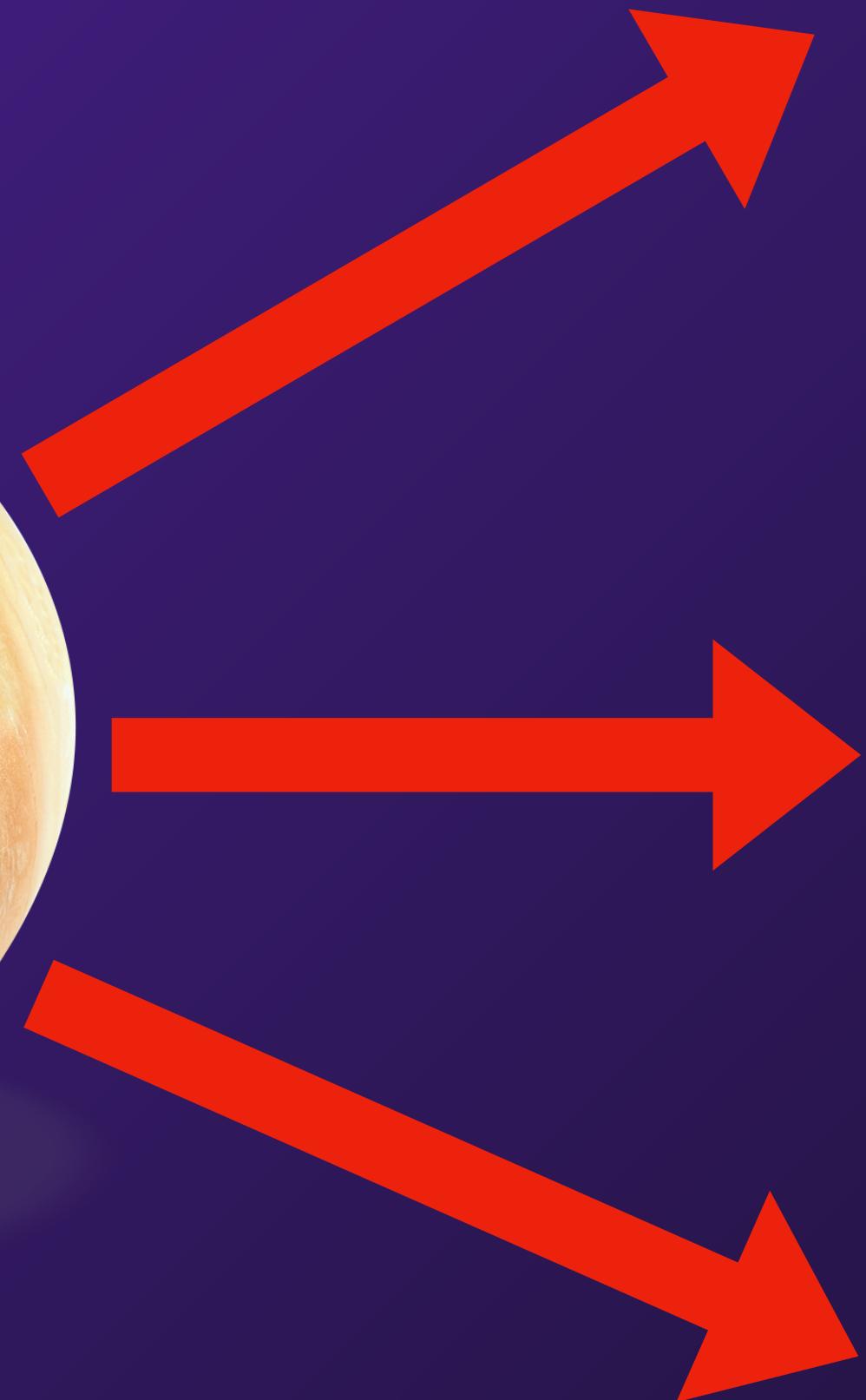
do^{ck}er tools





HAPPY!





Content-aware Storage





```
docker = pkgs.dockerTools.buildLayeredImage {  
    name = "registry.fly.io/douglas-adams-quotes";  
    tag = "latest";  
    config.Cmd = "${bin}/bin/douglas-adams-quotes";  
};
```

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docker = pkgs.dockerTools.buildLayeredImage {  
    name = "registry.fly.io/douglas-adams-quotes";  
    tag = "latest";  
    config.Cmd = "${bin}/bin/douglas-adams-quotes";  
};
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    config.Cmd = "${bin}/bin/douglas-adams-quotes";  
};
```

```
docker = pkgs.dockerTools.buildLayeredImage {  
    name = "registry.fly.io/douglas-adams-quotes";  
    tag = "latest";  
    contents = with pkgs; [ cacert ];  
    config.Cmd = "${bin}/bin/douglas-adams-quotes";  
};
```

```
[pneuma] ~/c/X/douglas-adams-quotes
cadey:users@pneuma ~/c/X/douglas-adams-quotes main ✓ ./rw
$ nix build .#docker
cadey:users@pneuma ~/c/X/douglas-adams-quotes main ✓ ./rw
$ du -hs (readlink ./result) --apparent-size
20M    /nix/store/yy03m64m88pkc0vvpy8hscinhjj0481b-douglas-adams-quotes.tar.gz
cadey:users@pneuma ~/c/X/douglas-adams-quotes main ✓ ./rw
$ █
```

```
[pneuma] ~/c/X/douglas-adams-quotes
```

```
cadey:users@pneuma ~/c/X/douglas-adams-quotes main ✓ ./rw
$ docker load < ./result
Loaded image: registry.fly.io/douglas-adams-quotes:latest
cadey:users@pneuma ~/c/X/douglas-adams-quotes main ✓ ./rw
$ █
```

	• Layers	
Cmp	Size	Command
■	1.8 MB	FROM 998f498080e63da
	346 kB	
	159 kB	
	30 MB	
	569 kB	
	110 kB	
	1.9 MB	
	13 MB	
	737 kB	
	0 B	

Current Layer Contents			
Permission	UID:GID	Size	Filetree
drwxr-xr-x	0:0	1.8 MB	└ nix
drwxr-xr-x	0:0	1.8 MB	└ store
dr-xr-xr-x	0:0	1.8 MB	└ vqvbn2z8wyrjwvayjb2vy5krhh1kis9b-libunistring-1.1

Layer Details

Tags: (unavailable)
Id: 998f498080e63dac970e3554a7e6f4612b181b5e12ef607f40f875b74083b1a9
Digest: sha256:ca609210bd54764cdbddfc8ae260ec7412ccb324ec7ed43f918439b7322b2d12
Command:

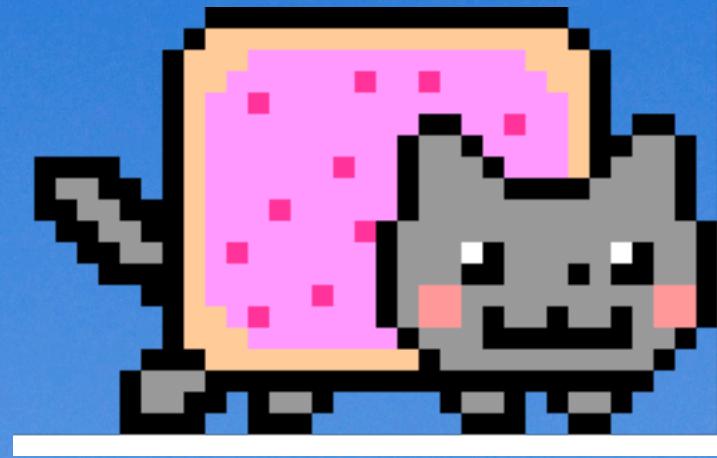
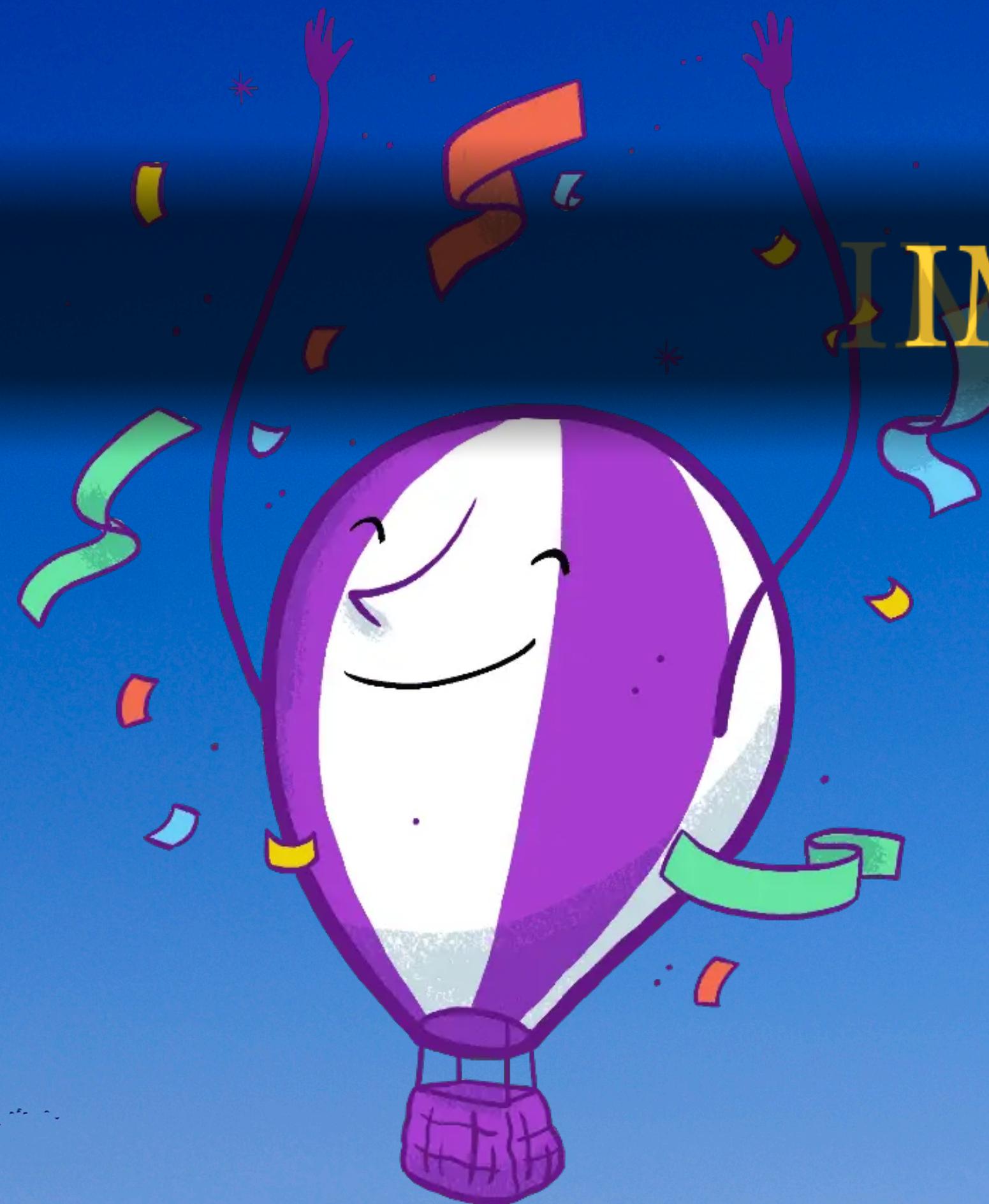
Image Details

Image name: registry.fly.io/douglas-adams-quotes:latest
Total Image size: 49 MB
Potential wasted space: 0 B
Image efficiency score: 100 %

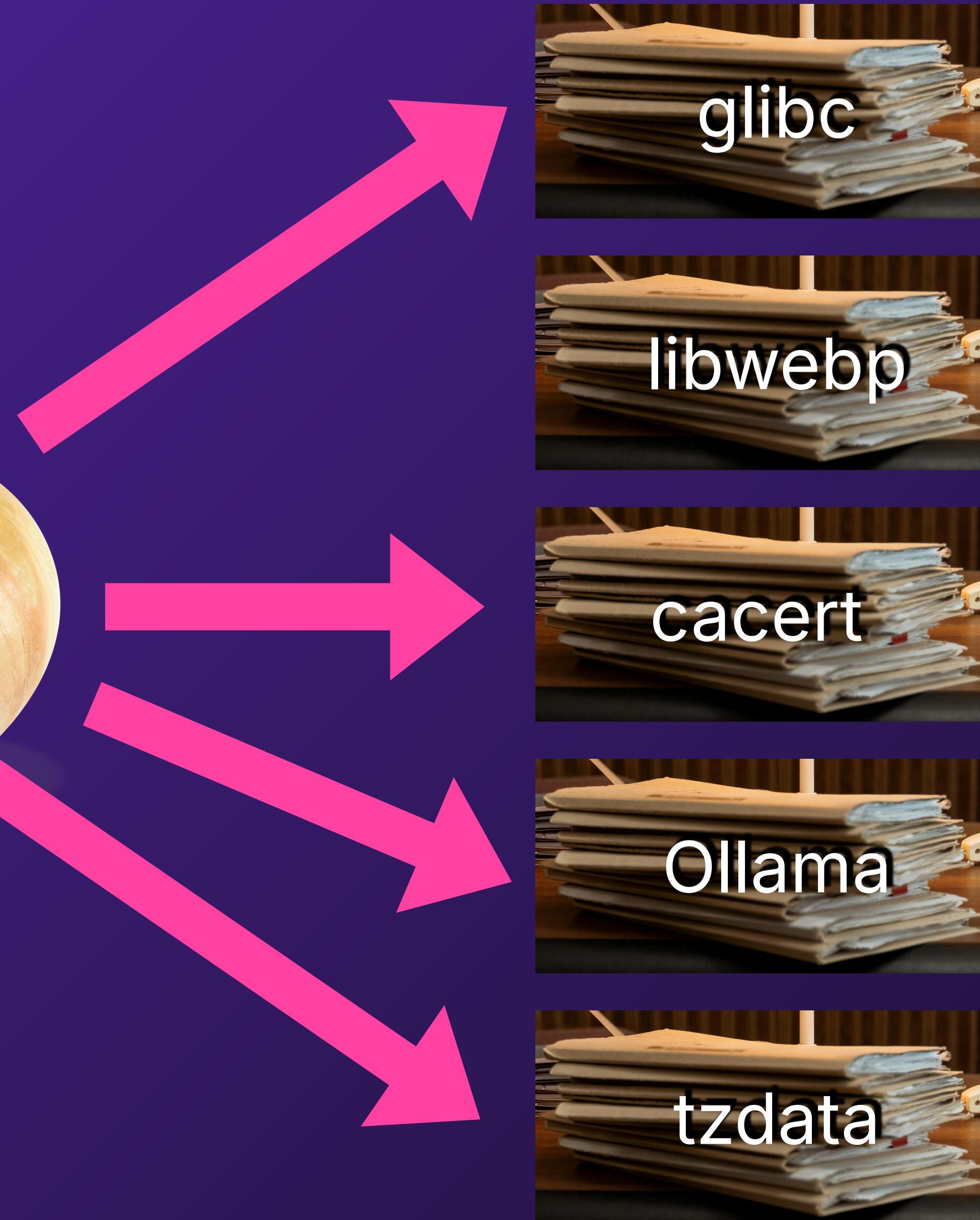
Count	Total Space	Path
-------	-------------	------

PARTY!

IMAGE CREATED



The really
cool part



within

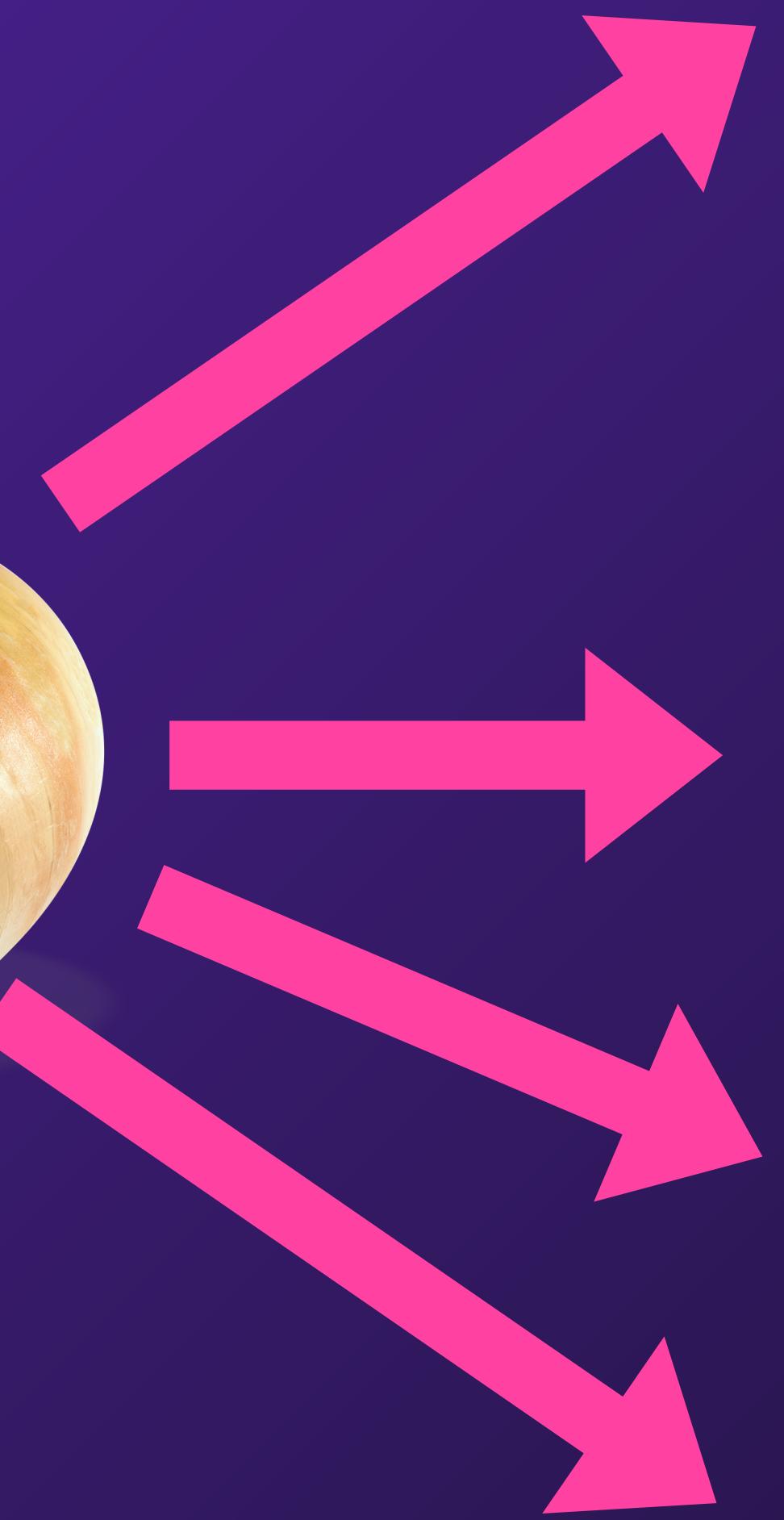
XXX

/x/ programs

- aegis: Unix socket => prometheus handler
- Alvis: automated sysadmin with ChatGPT
- Apeirophobia: Infinite wikidiving with large langle mangles
- eq: jq but with expr
- la-baujmi: A compiler from lojban to Prolog
- hlang: art?
- mimi: sassy AI chatbot/catgirl, glue code for various internal APIs
- nosleep: a Go linter that forbids time.Sleep in test code
- sanguisuga: translate it from Lojban
- sapientwindex: Reddit bot to monitor a subreddit
- todayinmarch2020: A reminder of how many days it's been
- vest-pit-near: continuous functional testing of a VPN container
- XeDN: my CDN
- Yeet: build automation tool with JS



Mimi



XeDN







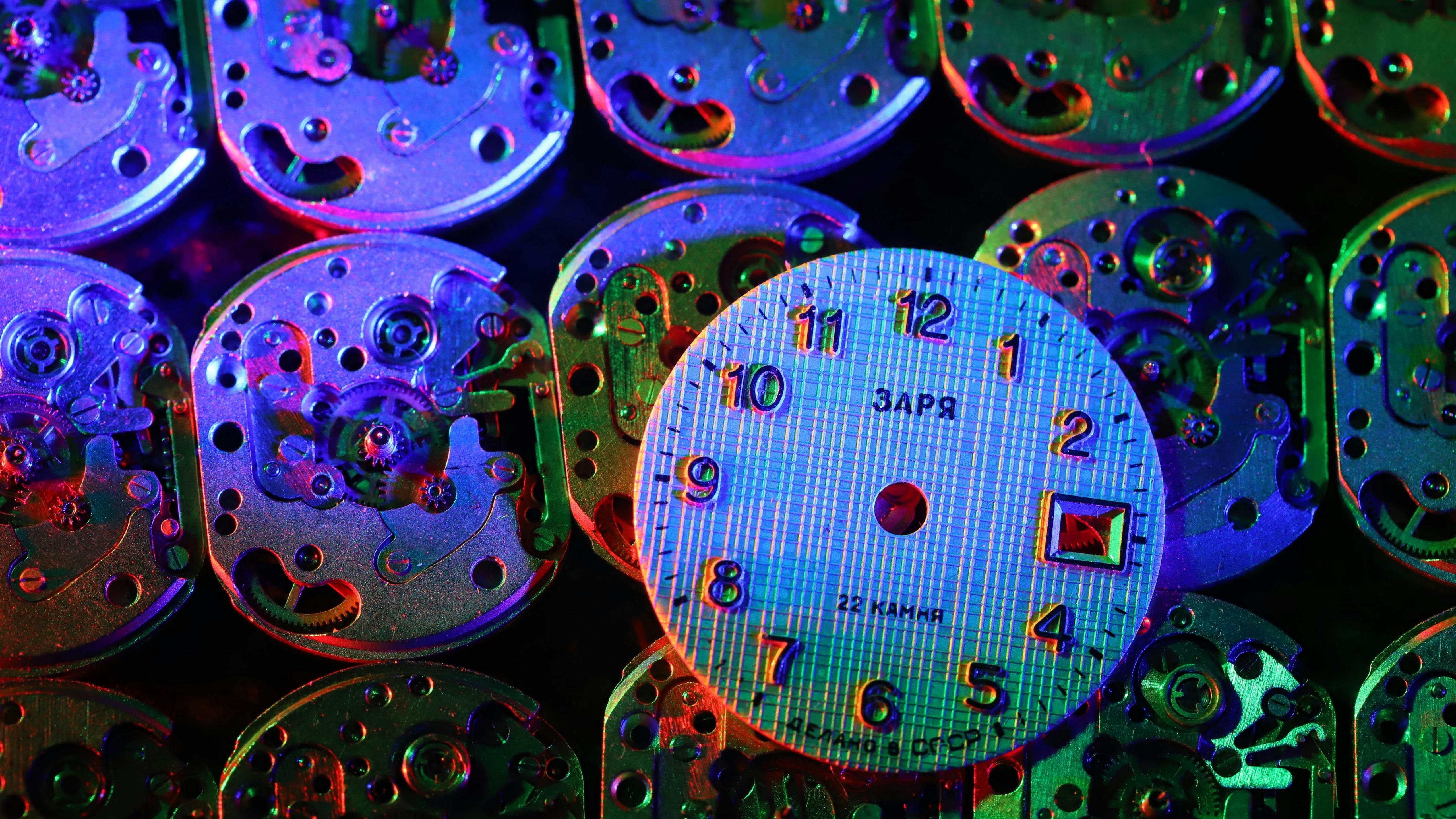
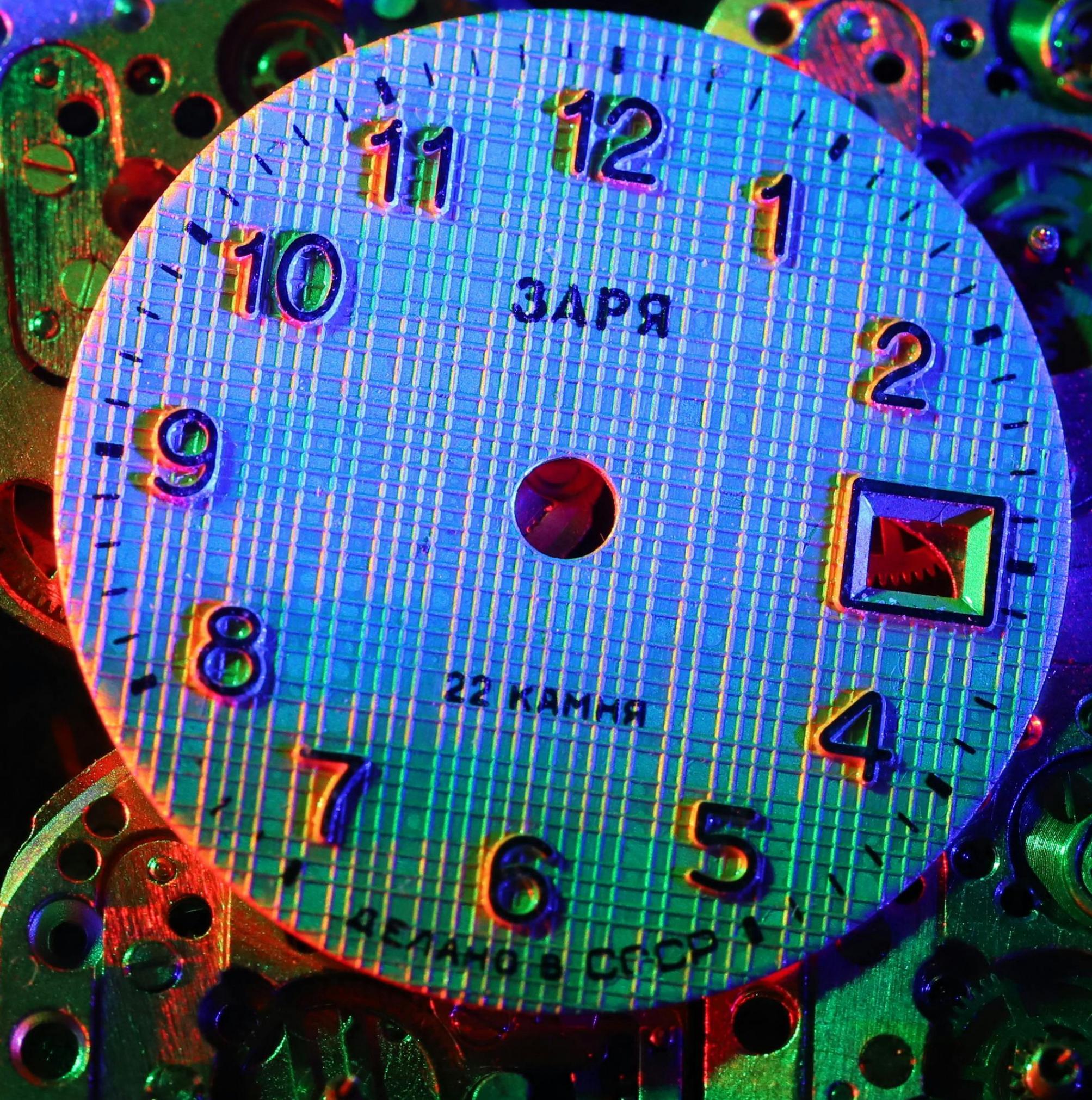
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    name = "registry.fly.io/douglas-adams-quotes";  
    tag = "latest";  
    config.Cmd = "${bin}/bin/douglas-adams-quotes";  
};
```



POLICE PUBLIC
CALL BOX

POLICE TELEPHONE
FREE
FOR USE OF
PUBLIC
POLICE STATION
DIAL 999 OR 101

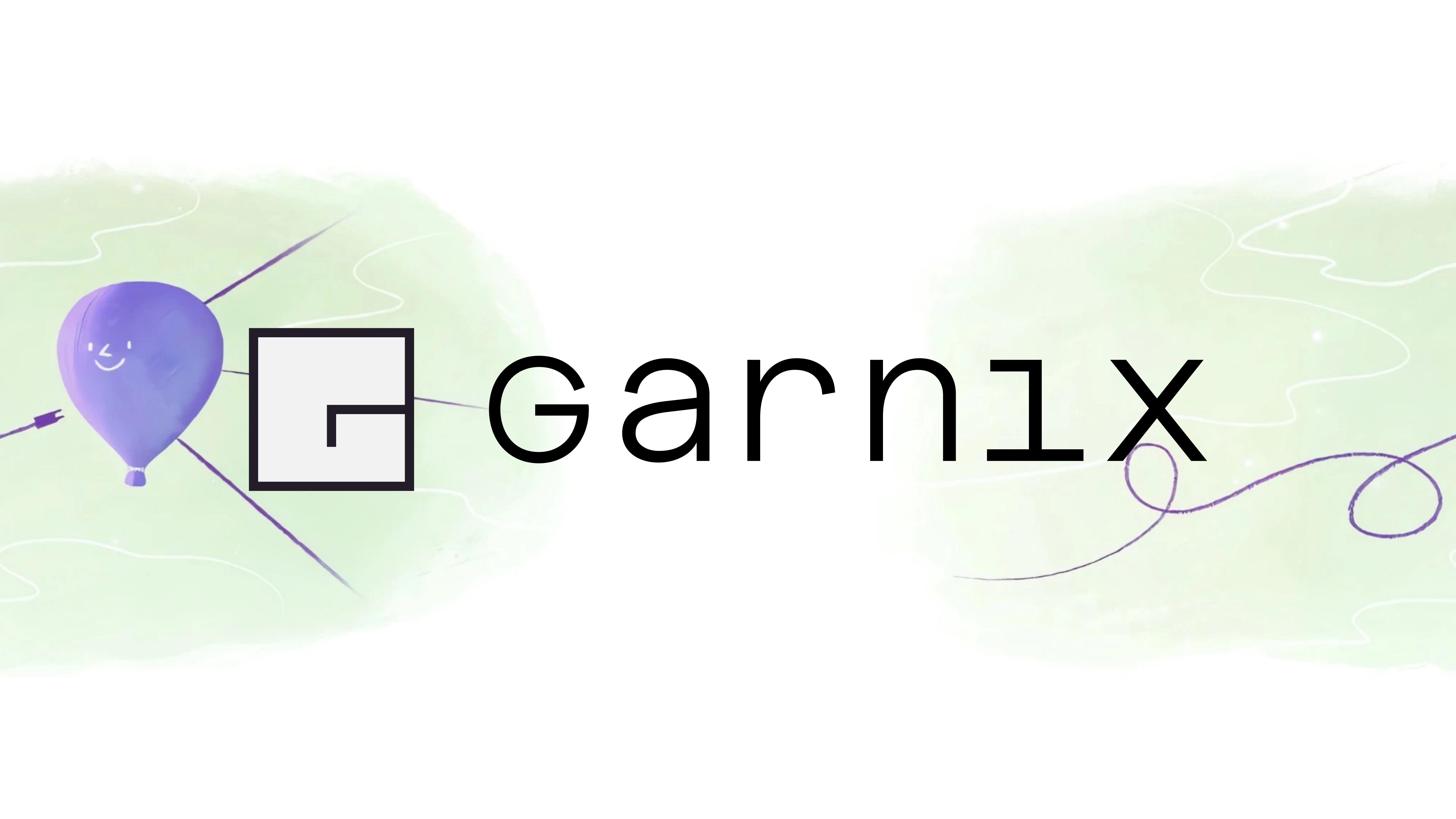
POLICE
PUBLIC
CALL
BOX



XeDN

```
$ nix build github:Xe/x/567fdc2#xedn-docker
```

Caching



Garnix



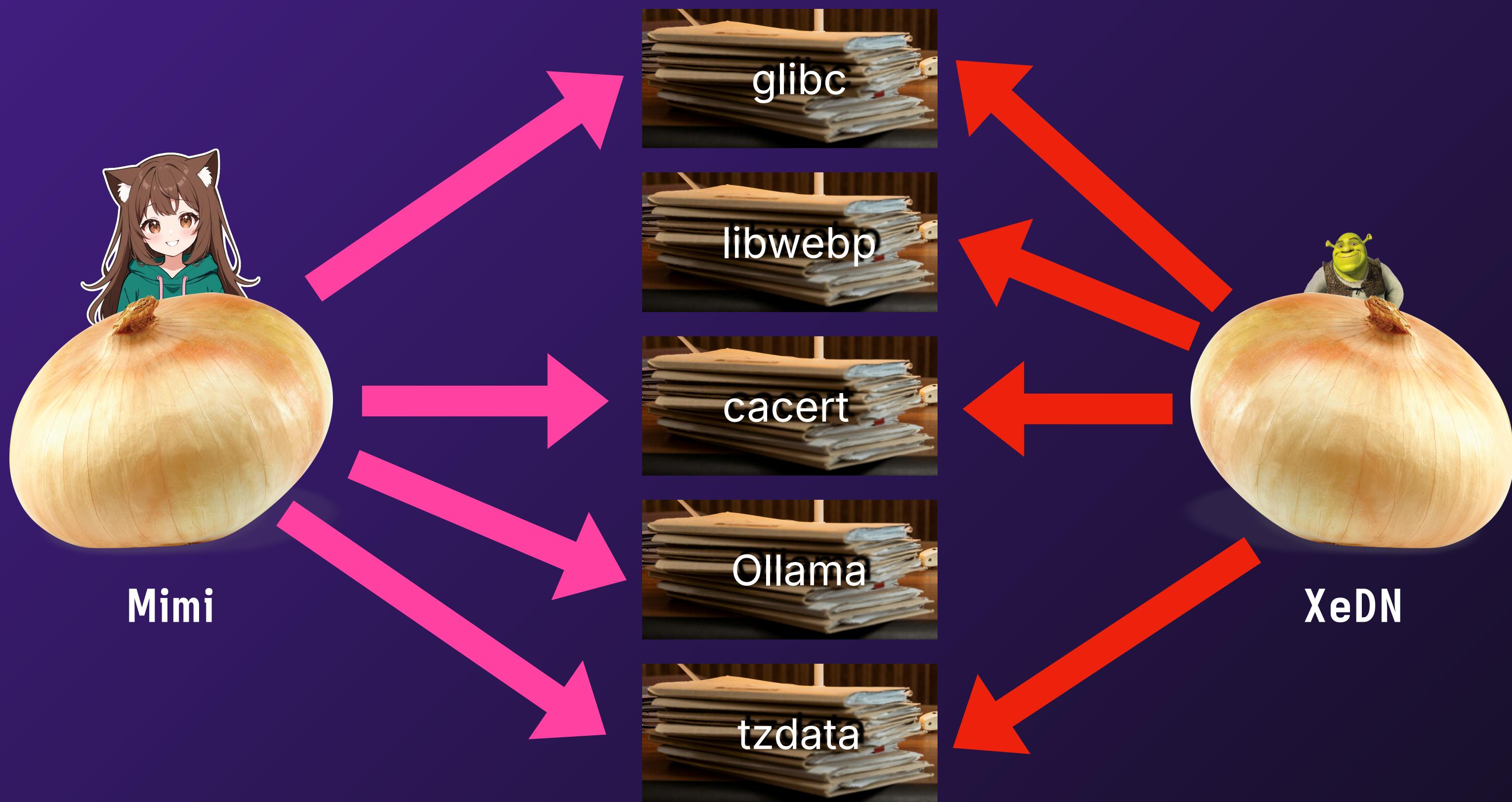
Focus

Nix is a better docker
image builder than
Docker's image builder

Specify the results,
not the process

Easy to adapt into
your existing pipeline

Share layers between your services



Checkout twice;
build once



GReeTZ



- ❖ Scootaloose
- ❖ jkarni
- ❖ grhmc
- ❖ ckie
- ❖ Ske
- ❖ peregrine
- ❖ Gaben
- ❖ dov
- ❖ kurt
- ❖ HakerTeam
- ❖ dudymas
- ❖ Burstniart
- ❖ lilybal
- ❖ Mystes
- ❖ Layl
- ❖ loops!
- ❖ Glen Sato
- ❖ l3dlp
- ❖ Killafuru
- ❖ Thomas Blank
- ❖ Tine Jozelj

Side notes about the talk

<https://xeiaso.net/talks/2024/nix-docker-build>



Questions? Concerns?
Intrusive thoughts?

 dockerimage@xeserv.us