

I use NixOS btw ...

Learnings from 2 years daily driving NixOS

Nix Trinity

NIXOS

A declarative operating system building on top of the Nix package manager:

- Turn your OS into an executable program.

NIX PACKAGE MANAGER

A declarative package manager building on the Nix language.

NIX LANGUAGE

A functional programming language:

- A DSL for producing reproducible builds.

Nix Language

■ Expressions

```
1 let
2   x = 1;
3 in
4   {
5     a = {
6       b = true;
7     };
8     d.e.f = "hello";
9     y = x;
10    config = builtins.readFile ./config.ini;
11  }
```

Nix Language

■ Derivations

▣ Context

- Definition of a package
- Fully reproducible

▣ Content

- A single closure
- Source code
- Build dependencies
- Runtime dependencies

▣ Support

- Using library functions for better abstractions
- Most standard builders are supported

```
1 rustPlatform.buildRustPackage rec {
2   pname = "presenterm";
3   version = "0.10.1";
4
5   src = fetchFromGitHub {
6     owner = "mfontanini";
7     repo = "presenterm";
8     tag = "v${version}";
9     hash = "sha256- ... 06HsX28mLvTrWh5yIbo/a54M=";
10  };
11
12  buildInputs = [
13    libsixel
14  ];
15
16  # ...
17 }
```

Nix Package Manager

Nix Store

```
/nix/store/sm724q6cyqwwghbadxssw9v2xyns56yn-python3-3.11.9  
/nix/store/zr51xbkmmkflpp1nm433vfgpkndhp64d-python3-3.11.9
```

Package Registry

The screenshot shows the GitHub interface for the NixOS `nixpkgs` repository. The repository is public and has 19.6k stars, 15.1k forks, and 274 watchers. It is currently on the `nixos-unstable` branch, which is 1093 commits behind `master`. The repository is managed by `wegank` and has 764,837 commits. The repository is a collection of Nix packages for NixOS. The repository is organized into several folders, including `.devcontainer`, `.github`, `ci`, `doc`, and `lib`. The `lib` folder contains the `libstrings` package, which allows CA paths in `isStorePath`. The repository is also linked to the `hacktoberfest` event.

NixOS / nixpkgs

Code Issues (5k+) Pull requests (5k+) Actions Projects (21) Security Insights

nixpkgs Public

Sponsor Edit Pins Watch 274 Fork 15.1k Star 19.6k

nixos-unstable 209 Branches 126 Tags

Go to file Add file Code

This branch is 1093 commits behind master.

wegank libcupfilters: 2.1.0 -> 2.1.1 (#383227) ✓ e3e32b6 · 2 days ago 764,837 Commits

.devcontainer	.devcontainer: tweaks	2 months ago
.github	build(deps): bump actions/create-github-app-token from 1.1...	last week
ci	OWNERS: Add @hsjobeki to lib files	last week
doc	testers.shellcheck: refactor, update docs, and simplify tests ...	3 days ago
lib	libstrings: allow CA paths in isStorePath	last week

About

Nix Packages collection & NixOS

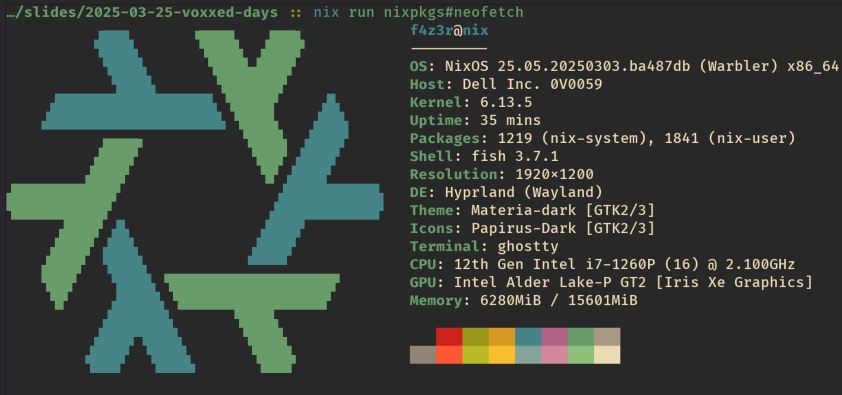
linux nix nixos nixpkgs

hacktoberfest

Readme MIT license Code of conduct Security policy Activity Custom properties 19.6k stars 274 watching

NixOS

```
.../slides/2025-03-25-voxxed-days :: nix run nixpkgs#neofetch
f4z3r@nix
OS: NixOS 25.05.20250303.ba487db (Warbler) x86_64
Host: Dell Inc. 0V0059
Kernel: 6.13.5
Uptime: 35 mins
Packages: 1219 (nix-system), 1841 (nix-user)
Shell: fish 3.7.1
Resolution: 1920x1200
DE: Hyprland (Wayland)
Theme: Materia-dark [GTK2/3]
Icons: Papyrus-Dark [GTK2/3]
Terminal: ghostty
CPU: 12th Gen Intel i7-1260P (16) @ 2.100GHz
GPU: Intel Alder Lake-P GT2 [Iris Xe Graphics]
Memory: 6280MiB / 15601MiB
```



- Entire OS managed by Nix
- Fully reproducible
- Only data not replicated

<https://github.com/f4z3r/nix>

Use Cases

Dev Environments

- Pin tooling
- Ensure consistency
- Use abstractions: **DevBox** (<https://www.jetify.com/devbox>)

CI/CD

- Define pipelines as code
- Run locally

Fleet Management

- Server management
- Replacement for pre-built ISOs / Packer

Use Case: DevBox

```
1 {
2   "packages": [
3     "python312Packages.presenterm-export@0.2.7",
4     "presenterm@0.10.1",
5     "d2@0.6.9"
6   ],
7   "shell": {
8     "scripts": {
9       "build": [
10        "d2 assets/*.d2",
11        "presenterm -e slides.md"
12      ],
13      "present": [
14        "presenterm --publish-speaker-notes slides.md"
15      ]
16    }
17  }
18 }
```


Demo

■ Nix REPL

▣ Loading Package Registry

▣ Exploration

▣ Building Packages

▣ Python with Various Dependencies

▣ Running Stuff