Own your C.I. with Nix

Théophane Hufschmitt
Bob

GreyCat
Bob

GreyCat

[Diagram of Bob using a laptop, with a rainbow-colored cat transforming into a grey cat]
fn main() ->

-

- jobs:
  build:
    runs-on: ubuntu-latest
    steps:
    - run: cargo build
$ cargo add image2

```rust
use image2::*
fn main() {
}
```

$ cargo build

✓
$ cargo add image2

use image2::*
for main() { ...

$ cargo build

![Error message]

exit status: 1
/home/this/this/tmux* 2":Gx=0,Y=0,w=0,h=0,z=0" 11:26 30-janv.-20
Steps:
- apt-get install libopenimageio
- cargo build
Steps:
- apt-get install libopenimageio
- cargo build
One year later

- Rust
- C libraries
- JS
- PyTorch
- Spark
- Python
- Postgresql
- Redis
- Postfix
- MinIO
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Ubuntu-latest workflows will use Ubuntu-22.04 #6399

ddobranic commented on Oct 13, 2022 • edited by mikhailkoliada

Breaking changes

Ubuntu 22.04 is ready to be the default version for the "ubuntu-latest" label in GitHub Actions and Azure DevOps.

spapas mentioned this issue on Jan 27, 2023

Tests are failing for python 3.6 on ubuntu latest treyhunter/django-email-log#37

claudepache pushed a commit to claudepache/php-doc-en that referenced this issue on Jun 1, 2023

Ubuntu-latest workflows will use Ubuntu-22.04, temporary workaround (p...)

shenxianpeng mentioned this issue on Oct 26, 2022

Clang-tidy/clang-format being installed clashed with system binaries cpp-linter/cpp-linter-action#103

giffels mentioned this issue on Feb 7, 2023

Update deprecated GitHub actions MatterMiners/cobald#118

Fix GLIBC issue software-mansion/protostar#1371
Avoiding death
Avoiding death
Dockerfile

THE #1 PROGRAMMER EXCUSE FOR LEGITIMATELY SLACKING OFF:
"MY IMAGE'S BUILDING"

HEY! GET BACK TO WORK!

COMPILING!

OH. CARRY ON.
FROM ubuntu:23.11

RUN apt-get

THE #1 PROGRAMMER EXCUSE FOR LEGITIMATELY SLACKING OFF:
"MY IMAGE'S BUILDING"

HEY! GET BACK TO WORK!

COMPILING!

OH. CARRY ON.
Bob

Toolchains

Code

Toolchains
Bob

Toolchains

Code

$ .config
Bob

Toolchains

Code

$ .config
Just Works™
Just Works™

☑️ Transparent
Just Works™

✓ Transparent
✓ Declarative
Just Works™

- Transparent
- Declarative
- ✗ Generic
Just Works™

- Transparent
- Declarative *
- Generic

Terms and conditions applies
Nix

- Transparent
- Declarative*
- Generic

Terms and conditions applies
Nix

- Transparent
- Declarative
- Generic

Terms and conditions applies
Nix

- Transparent
- Declarative
- Generic
Bob

Toolchains

Code

. config
Bob

Code

Toolchains

$ .config
pkgs.mkShell {{ We want a development shell}}
```rust
pkg. mkShell { 
  packages = }
  pkg. cargo
  pkg. rustc
  pkg. openimageio
...
}
```

- We want a development shell

- With these things available
let { pkgs = import ./hixpkgs.hix } in

pkgs.mkShell { packages = [ pkgs.cargo, pkgs.rustc, pkgs.openimageio ] ...

];

}
$ nix-shell
...
[nix-shell]$ $
$ nix-shell
...
[nix-shell]$ which cargo
cargo is /nix/store/.../bin/cargo
```bash
$ nix-shell
...
[nix-shell] $ which cargo
```
cargo is `/nix/store/.../bin/cargo`
```
[nix-shell] exit
```
```
$ which cargo
cargo not found
```
$ nix-shell
...
[nix-shell]$ $
$ nix-shell

...  
[nix-shell] $ which vim
vim is /usr/bin/vim
$ nix-shell

... 
[nix-shell] $ which vim
vim is /usr/bin/vim

$ nix-shell --pure
[nix-shell] $ which vim
vim not found
jobs:
  build:
    runs-on: ubuntu-latest
    steps:
      - _______
      - _______


jobs:
  build:
    runs-on: ubuntu-latest
    steps:
      - uses: cachix/install-nix-action@v22
jobs:
  build:
    runs-on: ubuntu-latest
    steps:
      - uses: cachix/install-nix-action@v22
      - run: nix-shell
        --pure
        --command "cargo build"
Going further
Going further

Better pinning
Going further

Building

Better pinning
Going further

OCL images

Building

Better pinning
Going further:

- OCI images
- Building

Better pinning

Caching
Going further

OCI images

Building

Better pinning

Caching

NixOS
Going further

OCI images

Building

Better pinning

Caching

Deployment

NixOS
Going further

OCI images

Building

Better pinning

Caching

Deployment

NixOS

Testing
$ whoami
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