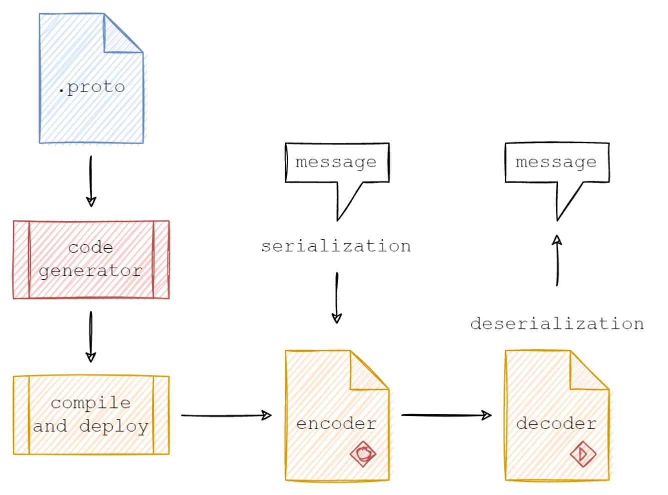
Nix for Reproducible Developer Environments

Oliver Pauffley

October 22, 2025

Protobuf


.proto
code generator
compile and deploy
message
serialization
encoder
message
deserialization
decoder

Version Number Wars

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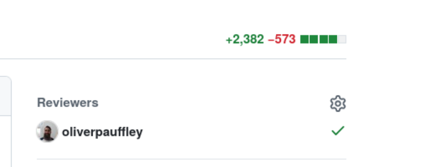
Everyone loves a PR with 2000+ changes.



+2,382 −573 🟩🟩🟩🟩⬜

Reviewers

oliverpauffley ✓

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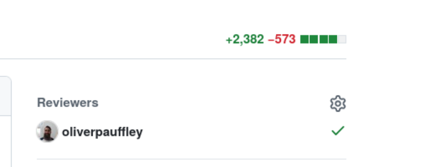

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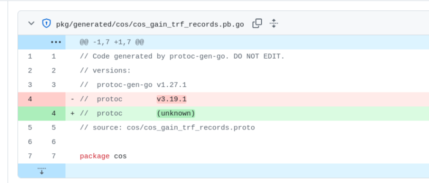
But drilling down.



pkg/generated/cos/cos_gain_trf_records.pb.go

```
@@ -1,7 +1,7 @@
  // Code generated by protoc-gen-go. DO NOT EDIT.
  // versions:
  //  protoc-gen-go v1.27.1
- //  protoc        v3.19.1
+ //  protoc        (unknown)
  // source: cos/cos_gain_trf_records.proto

  package cos
```

The Problem

Every developer has a different version of the tools used to generate the protos!

Make - Install everything on my machine

Lets just include instructions on how to install things

```
PROTOC_VERSION := 3.14.0
.PHONY: install-protoc
install-protoc:
	curl -OL https://github.com/protocolbuffers/protobuf/releases/download/v$(PROTOC_VERSION)/$(PROTOC_FILE)
	sudo unzip -o $(PROTOC_FILE) -d /usr/local bin/protoc
	sudo unzip -o $(PROTOC_FILE) -d /usr/local 'include/*'
	rm -f $(PROTOC_FILE)
```

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- Turns out this was already in the repo.

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- Turns out this was already in the repo.
- I don’t really want to have curl installing things.
- You can just ignore it.

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- If only there was a way to build a little mini machine with the binaries I need already on it.

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- Docker!

Docker

```
FROM cimg/go:1.19-node as build-stage

ENV PROTOC_VERSION=3.18.1

# Install protoc
RUN curl -LO https://github.com/protocolbuffers/protobuf/releases/download/v${PROTOC_VERSION}/protoc-${PROTOC_VERSION}-linux-x86_64.zip
RUN unzip protoc-${PROTOC_VERSION}-linux-x86_64.zip -d $HOME/.local
RUN rm protoc-${PROTOC_VERSION}-linux-x86_64.zip

RUN mkdir -p /home/circleci/project/pkg/generated

# Install go/js tooling
ADD Makefile .
ADD go.mod .
ADD go.sum .
ADD package.json .
ADD yarn.lock .
RUN make install

ADD . .
# Generate code from proto files.
RUN make protos-generate

FROM scratch as export-stage

COPY --from=build-stage /home/circleci/project/pkg/generated /pkg/generated
```

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- Doesn't connect well with local tooling for devs

Nix - Install everything on my machine the same as everyone else’s

Demo

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I’ve been a happy Nix user for about 18 months now, and– well, not happy happy, but satisfied. . . no. . . not really satisfied either; perhaps it’s more of a resigned disgruntlement; a feeling that despite its many flaws, it’s still better than anything else out there, and I’ve invested so much time into it already that it would be a shame to give up now, so. . . am I describing Stockholm syndrome?
— Ian Henry

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- Works on linux, mac and windows (through wsl)
- You can use it as well as your other package managers

Haskell Book Club

I also run a monthly haskell book club. Meeting on the last Sunday of the month

Questions?