Transitioning Apple’s Downstream Repositories To The Monorepo

Alex Lorenz

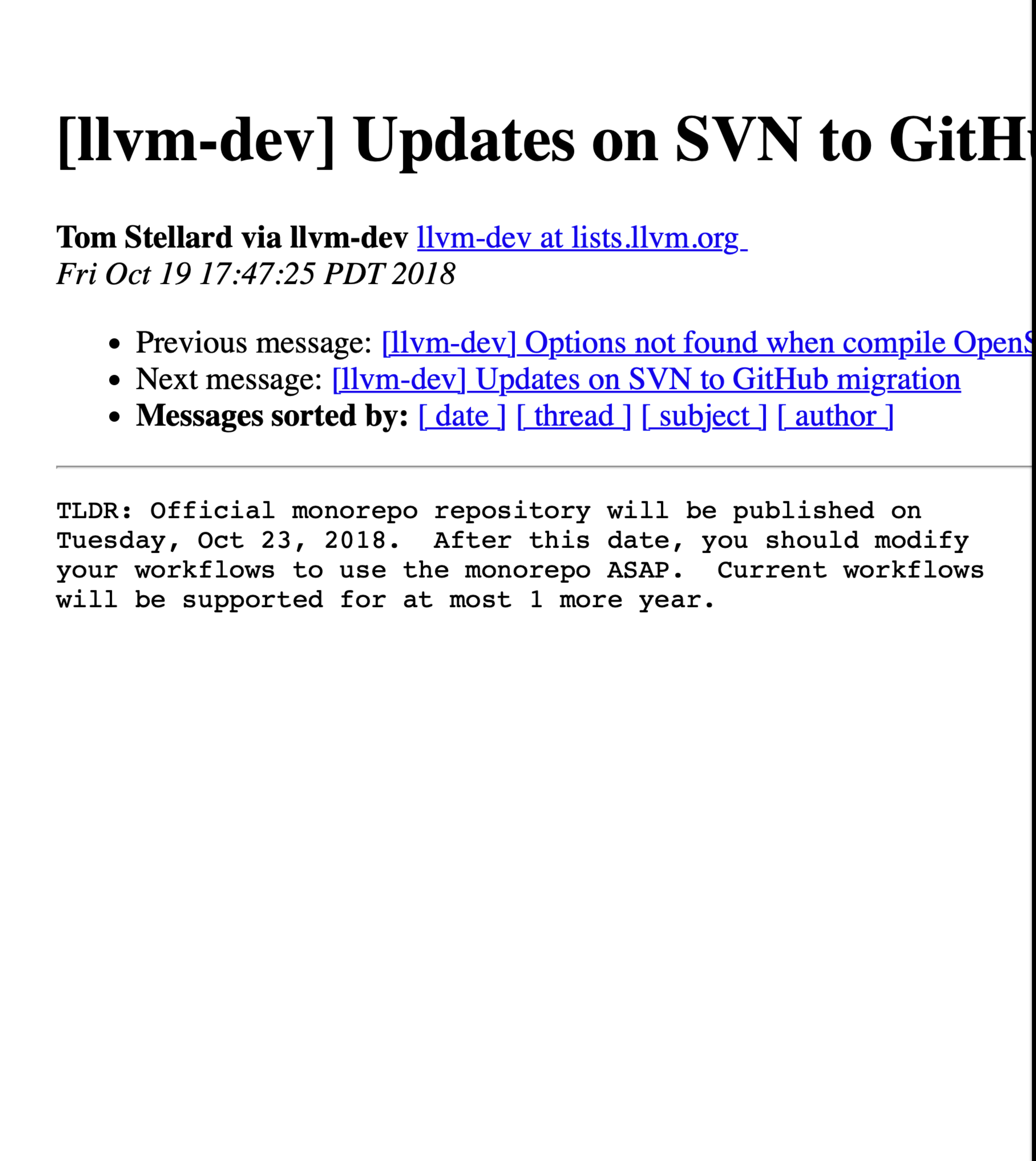
Apple

[llvm-dev] Updates on SVN to GitHub migration

Tom Stellard via llvm-dev llvm-dev at lists.llvm.org
Fri Oct 19 17:47:25 PDT 2018

- Previous message: [llvm-dev] Options not found when compile OpenSSL with clang
- Next message: [llvm-dev] Updates on SVN to GitHub migration
- **Messages sorted by:** [date] [thread] [subject] [author]

TLDR: Official monorepo repository will be published on
Tuesday, Oct 23, 2018. After this date, you should modify
your workflows to use the monorepo ASAP. Current workflows
will be supported for at most 1 more year.



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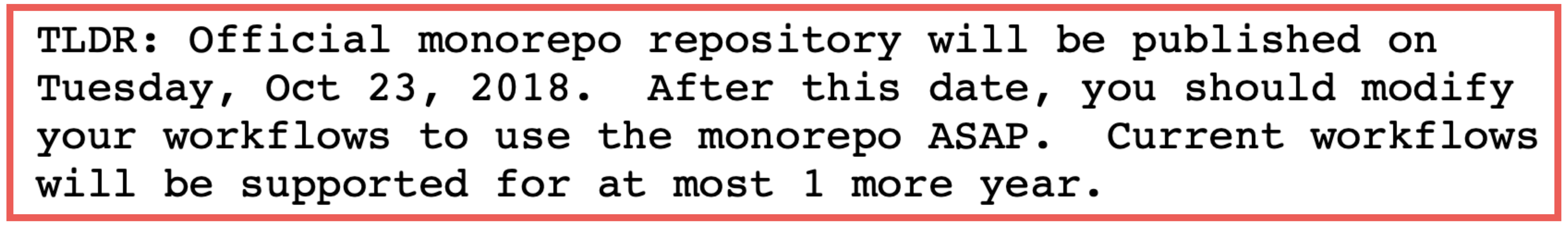
🤨



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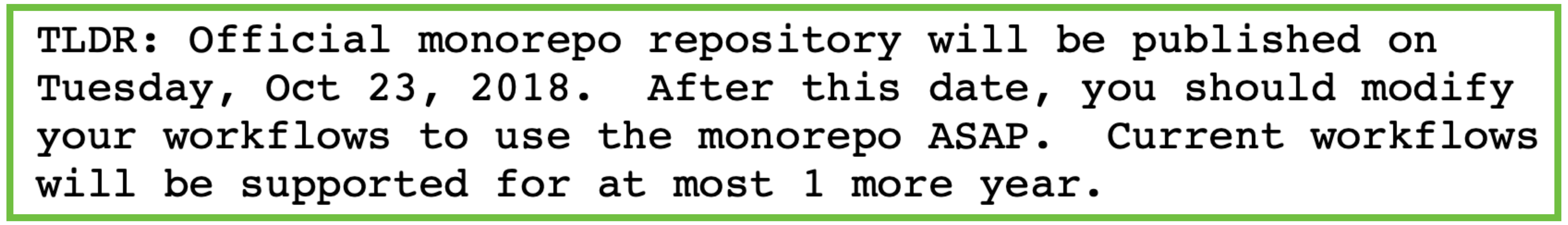

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Let’s recreate our downstream repos

Let’s improve our workflows

Monorepo Tooling

Downstream monorepo generation tools

Auto merger infrastructure and tools

GitHub PR & CI tools

```
$ git apple-llvm …

$ git apple-llvm am …

$ git apple-llvm pr …
```

👉 `github.com/apple/apple-llvm-infrastructure-tools`

👉 `LLVM Project License`

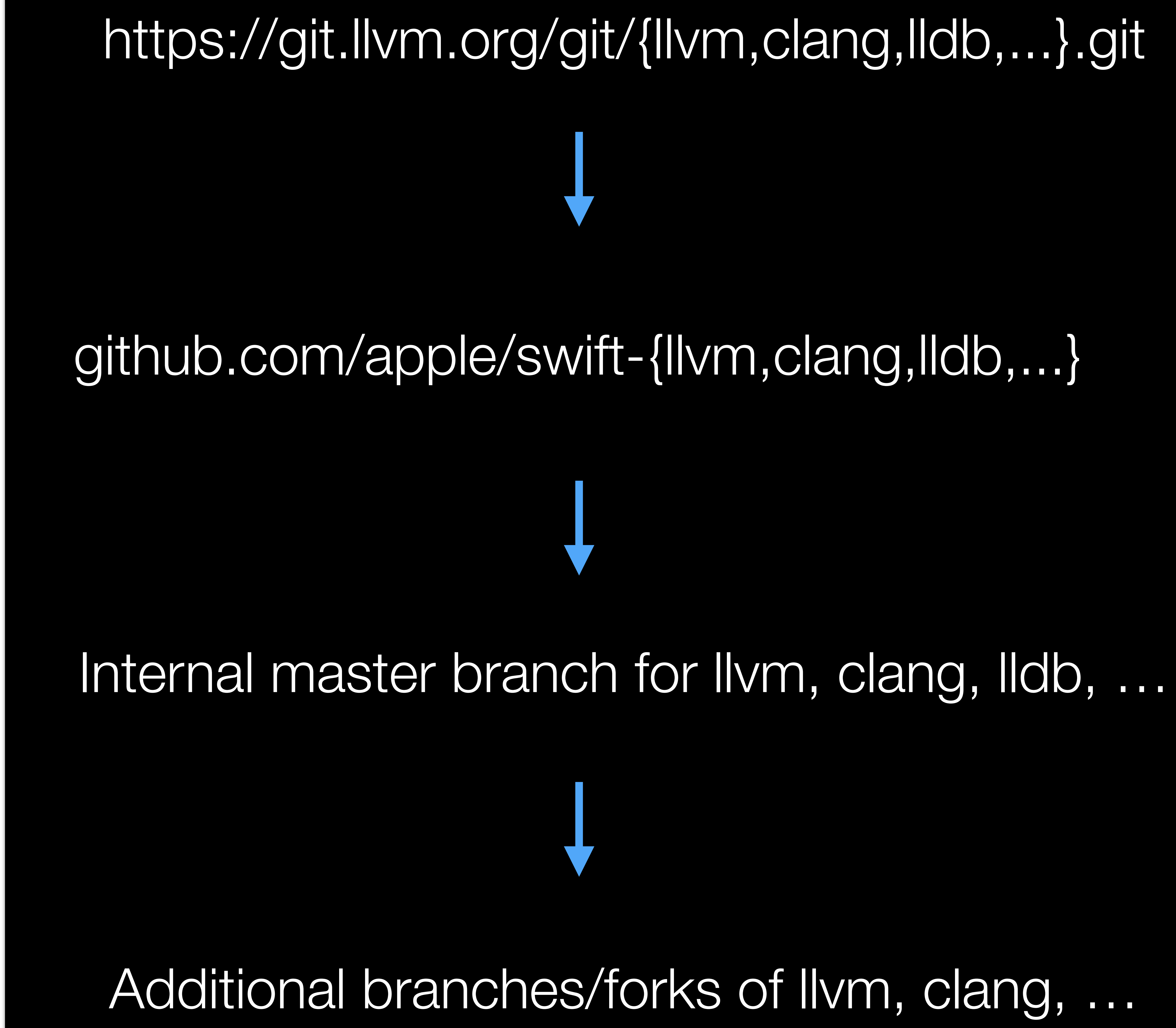
Generating Downstream Monorepos

Downstreams @ Apple

3+ levels of forks / branches

Each level had llvm, clang, lldb, etc.

Git merges used between levels



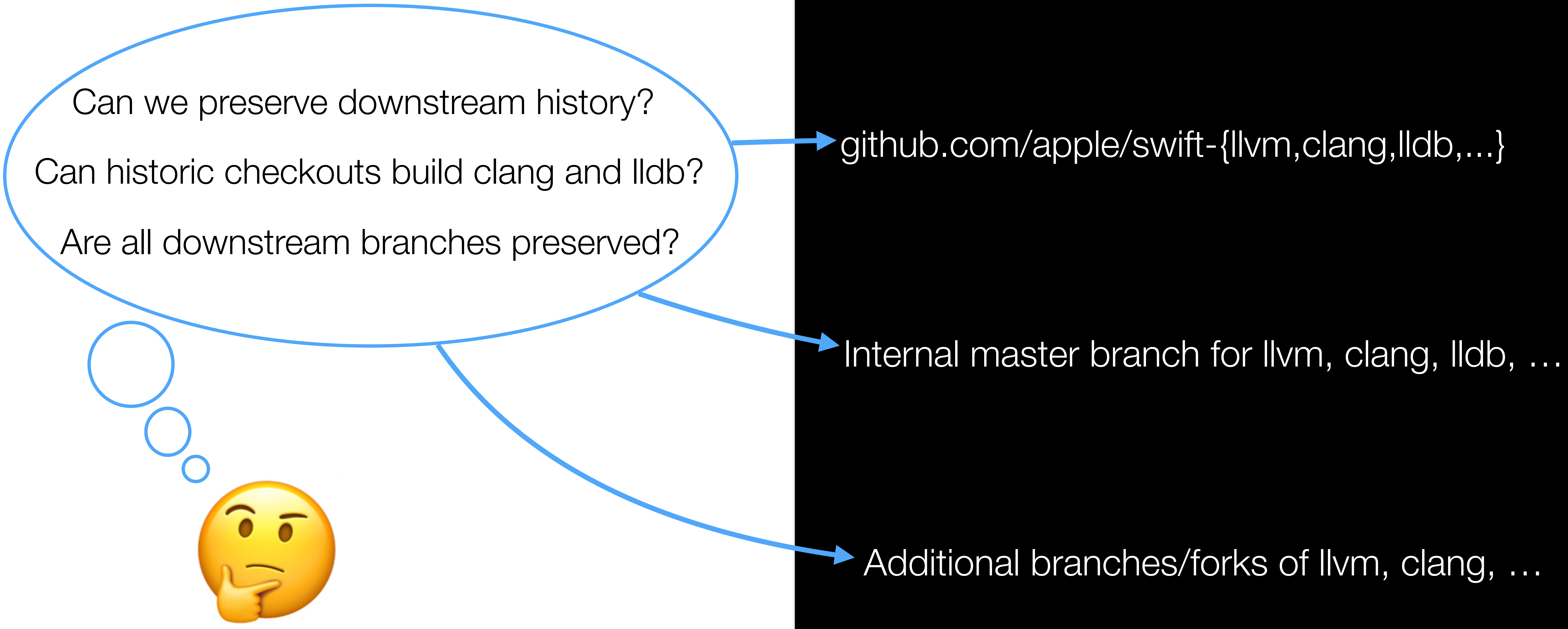
https://git.llvm.org/git/{llvm,clang,lldb,...}.git

github.com/apple/swift-{llvm,clang,lldb,...}

Internal master branch for llvm, clang, lldb, …

Additional branches/forks of llvm, clang, …

Monorepo Concerns



Can we preserve downstream history?

Can historic checkouts build clang and lldb?

Are all downstream branches preserved?

github.com/apple/swift-{llvm,clang,lldb,...}

Internal master branch for llvm, clang, lldb, …

Additional branches/forks of llvm, clang, …

Monorepo Concerns

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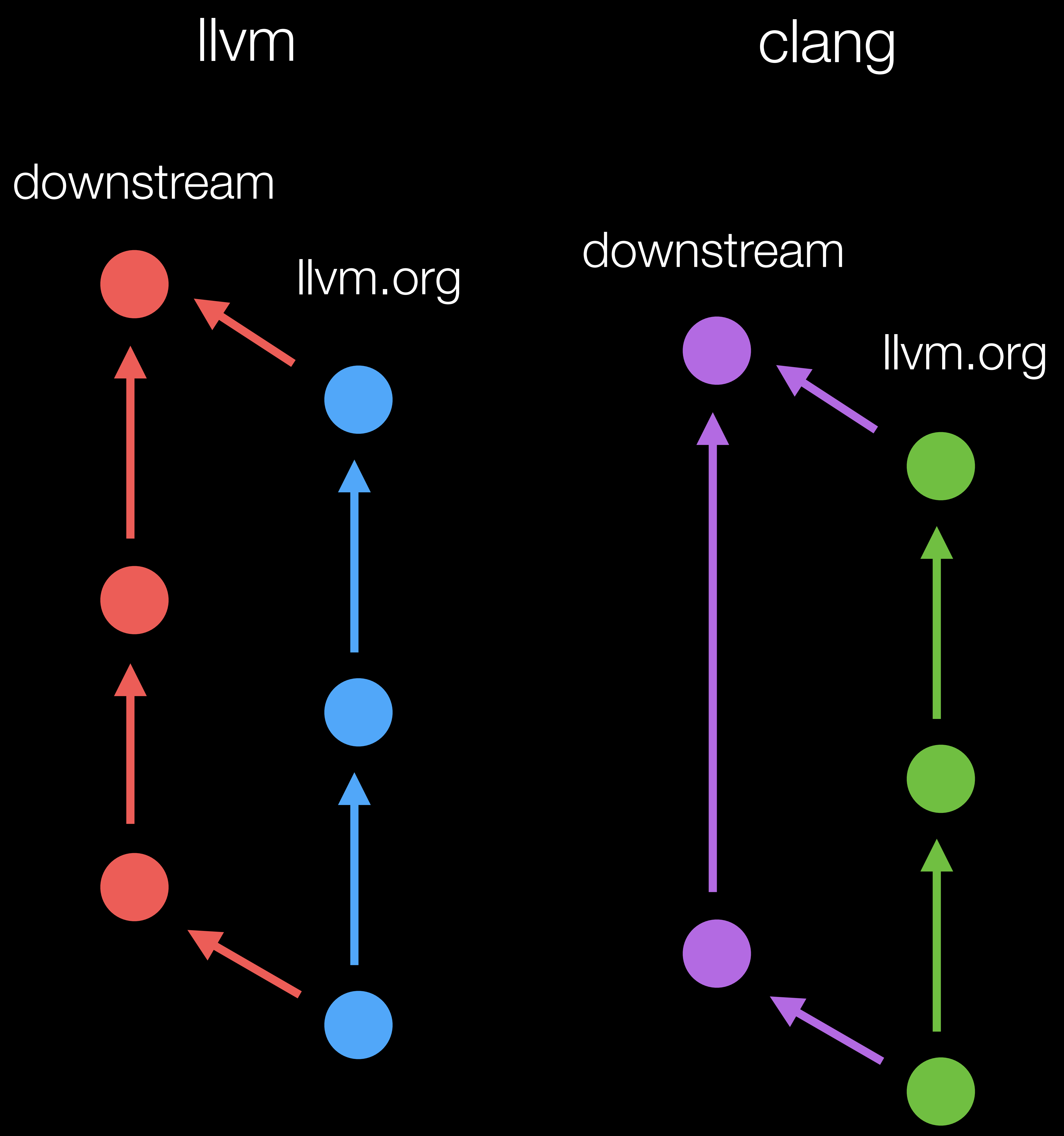
Can historic checkouts build clang and lldb?

Are all downstream branches preserved?

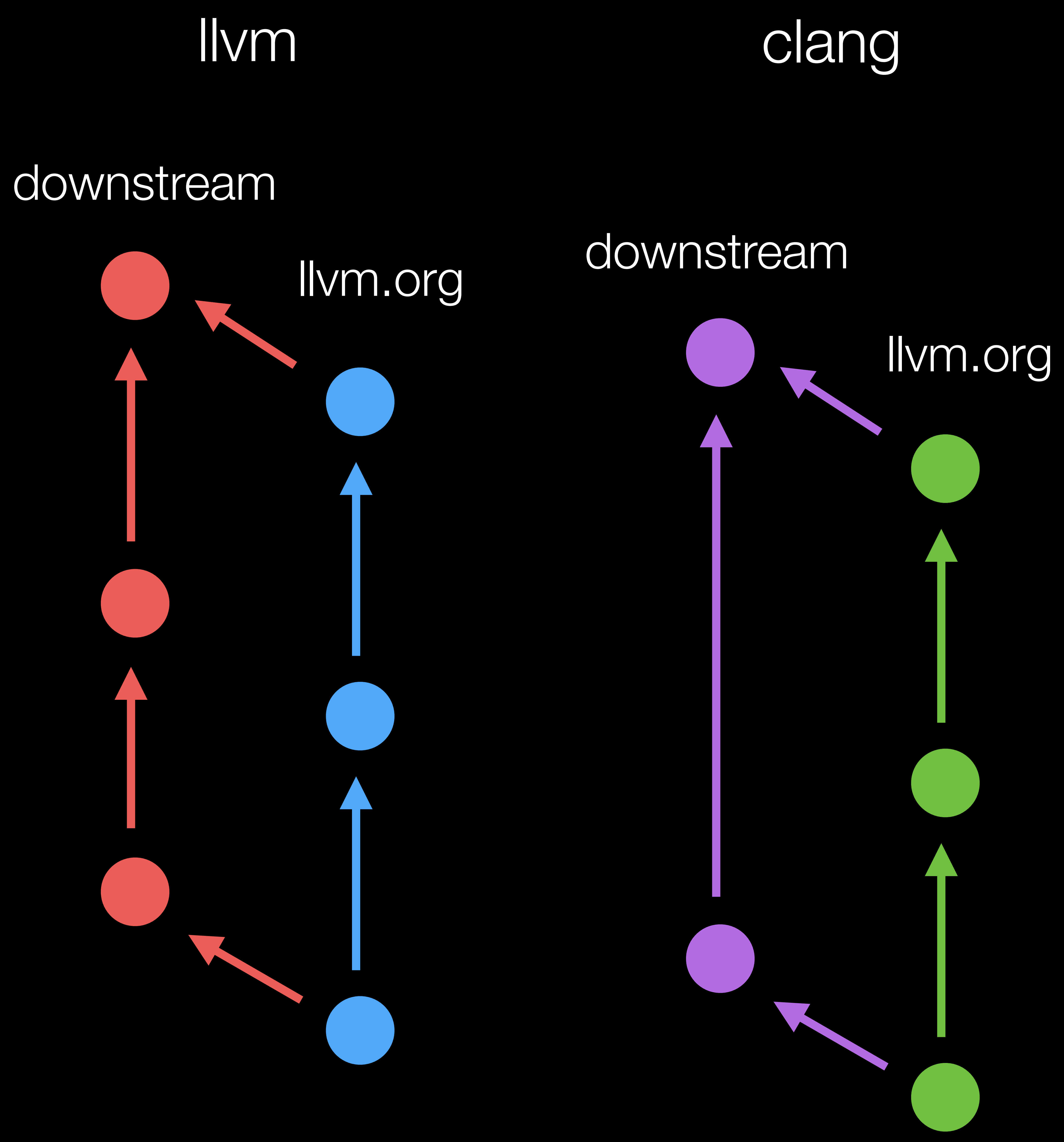
Yes…

Let’s generate the Git history ourselves



Yes…

Let’s generate the Git history ourselves



llvm

clang

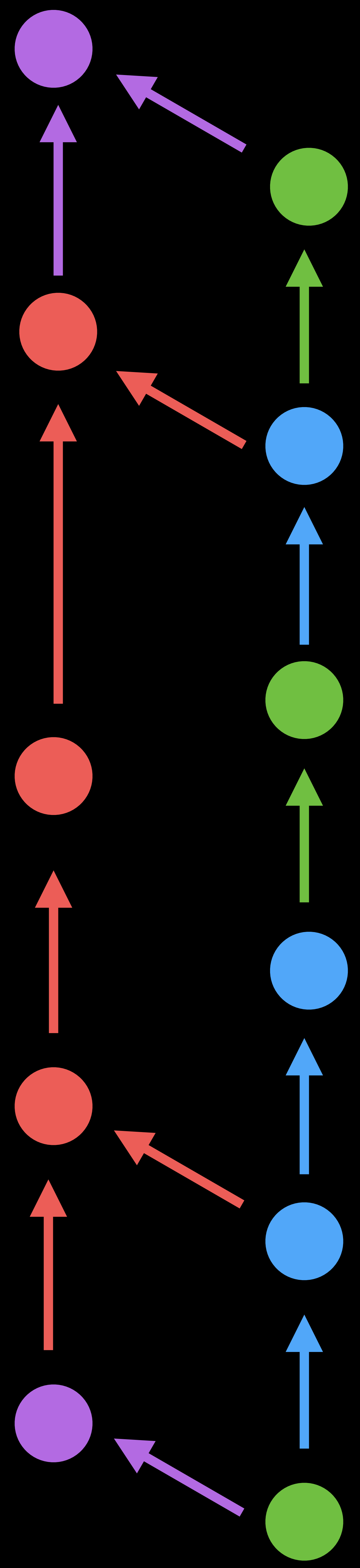
downstream

llvm.org

downstream

llvm.org

Generated monorepo



Generated Monorepo

Upstream monorepo hashes are used

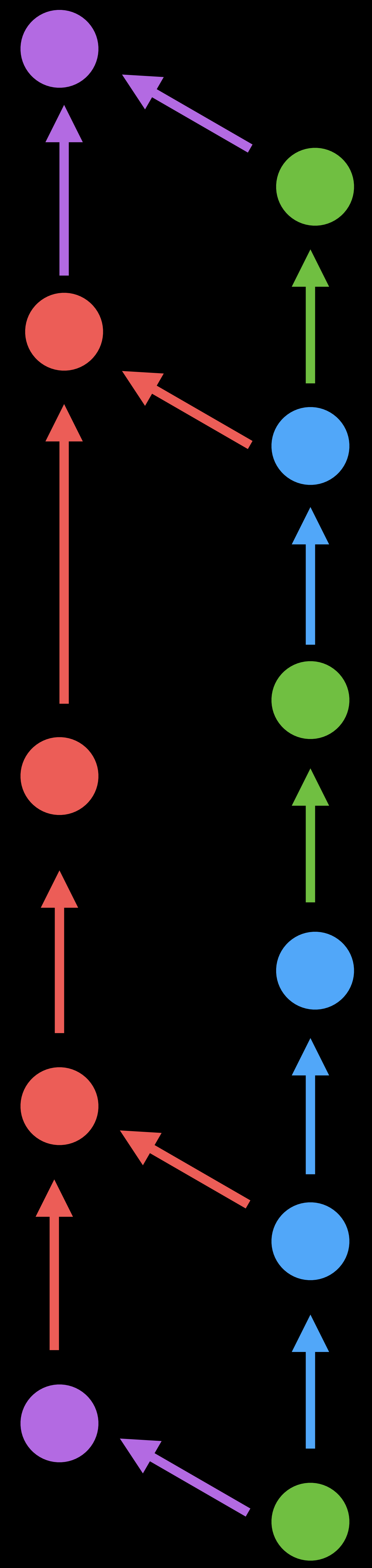
Downstream commit history preserved

Downstream tags preserved

A checkout of any downstream commit contains full downstream monorepo

😎

Generated monorepo



Workflow Improvements

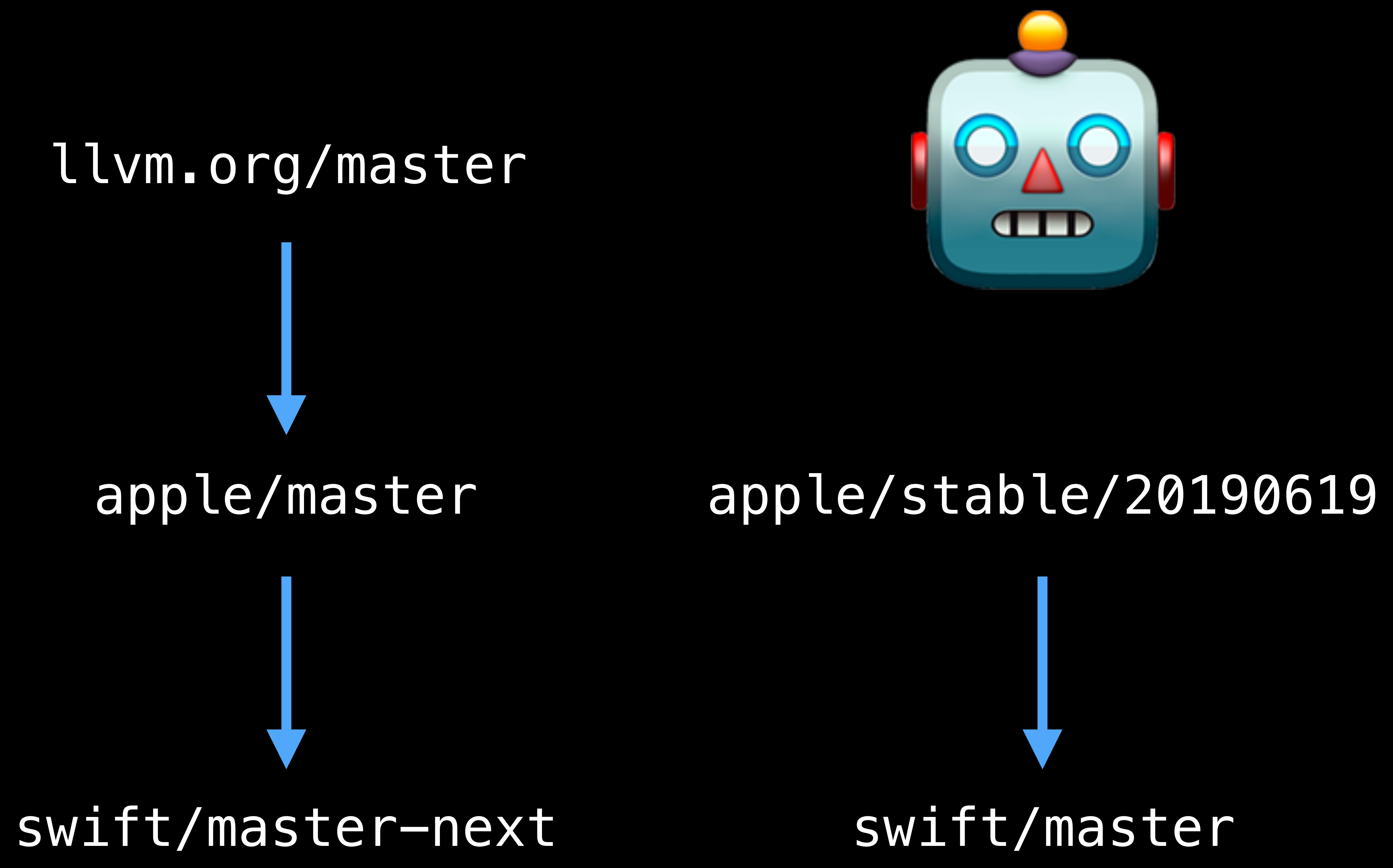
Auto Merger

Merges upstream branches downstream

Configuration in target branch

Builds and tests before merging

Merge conflicts create PRs



llvm.org/master

apple/master

apple/stable/20190619

swift/master-next

swift/master

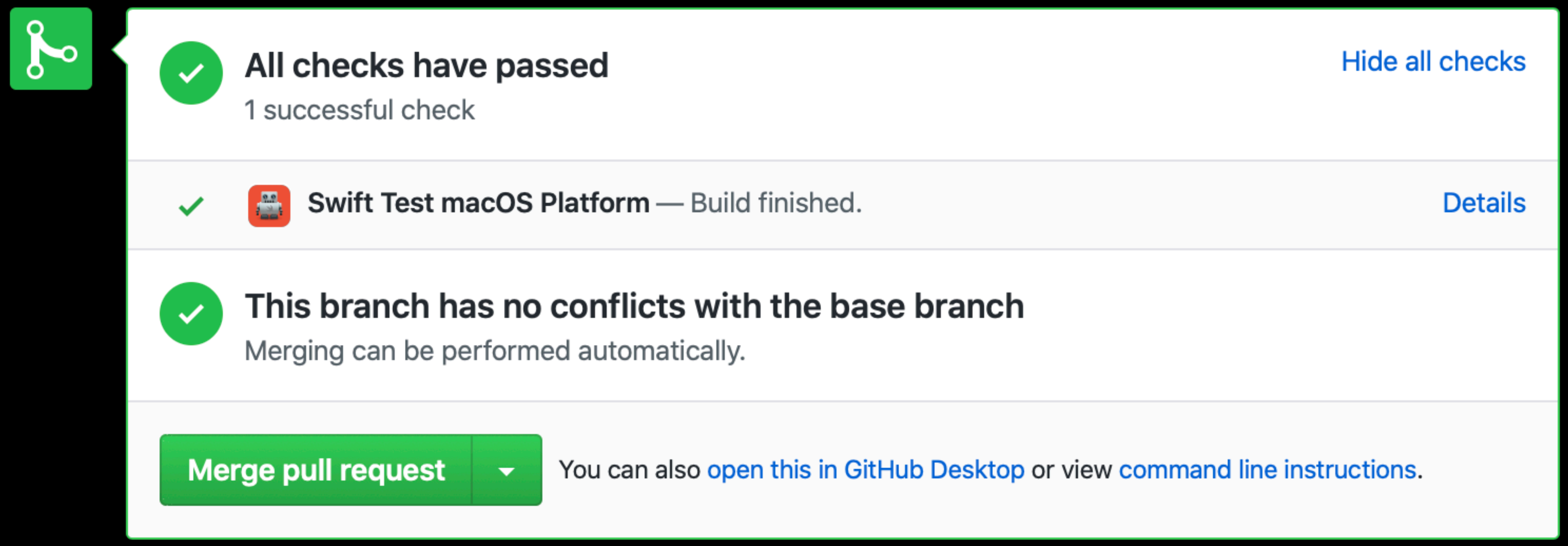
PR & CI Tools

Create, merge and list monorepo PRs

Test PRs using custom Jenkins test plans

Test PRs using `swift-ci`

```
$ git apple-llvm pr test #42
Triggering pull request testing for pr #42 by hyp:
  Support git-cat-file as read_file function
✅ you commented "@swift-ci please test" on the pu
```



✓ **All checks have passed**
1 successful check

Hide all checks

✓ **Swift Test macOS Platform** — Build finished. Details

✓ **This branch has no conflicts with the base branch**
Merging can be performed automatically.

You can also open this in GitHub Desktop or view command line instructions.

The End

Thank you!