

# Panamax Agent rewrite

## from Ruby to Go

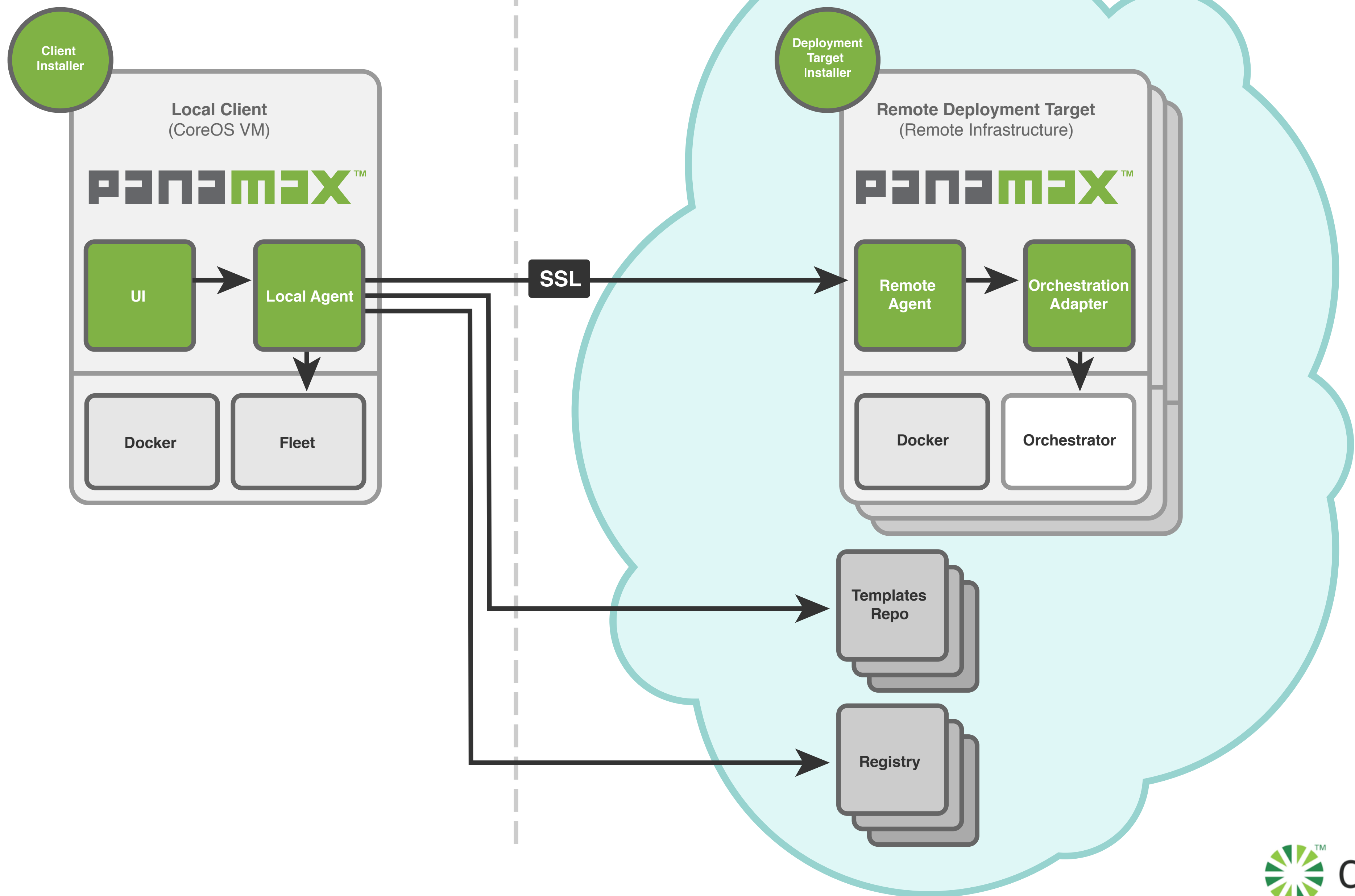
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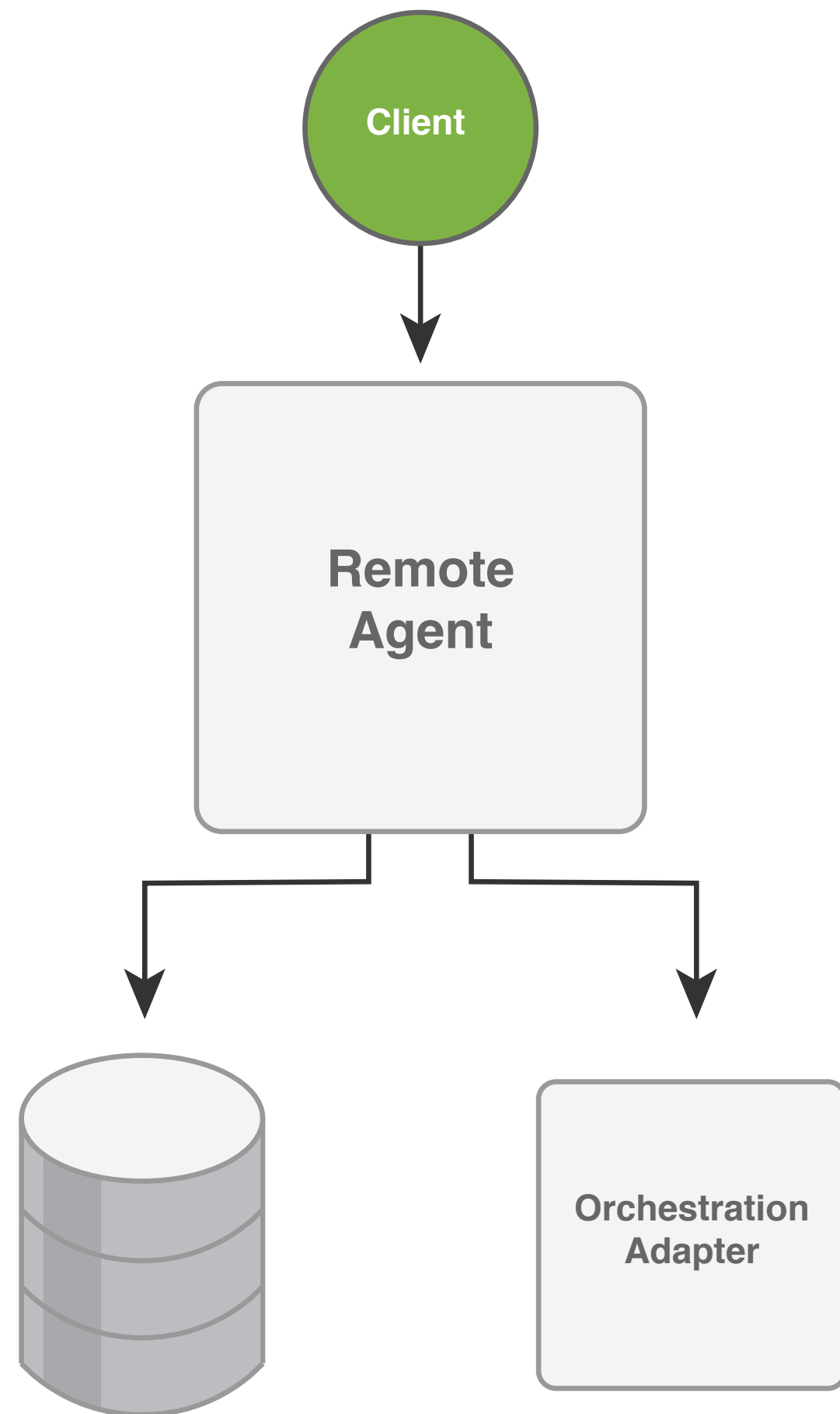
# What is Panamax?

An open-source project that makes deploying complex containerized apps as easy as Drag-and-Drop. Learn more at [Panamax.io](https://panamax.io).



# The Remote Agent

Brokers communication between the local Panamax client and the orchestration adapter.



# Why the rewrite?

## Why Go?

- Smaller footprint
- Docker ecosystem is mostly Go
  - We don't want to be the only maintainers
  - Access to more Docker libraries/wrappers

# My experience with Go

This is my first Go application (I'm late to the party)

# My Approach

- Write integration tests against the existing Agent
- Point those tests at the new Agent
- Implement the new Agent



# Advantages

- The tests had already been vetted
- Encouraged refactoring

# Disadvantages

- Tests were order dependent (avoidable)
- I couldn't easily mock the Adapter or Repo
- No real isolation
- etc.

# Time to implement

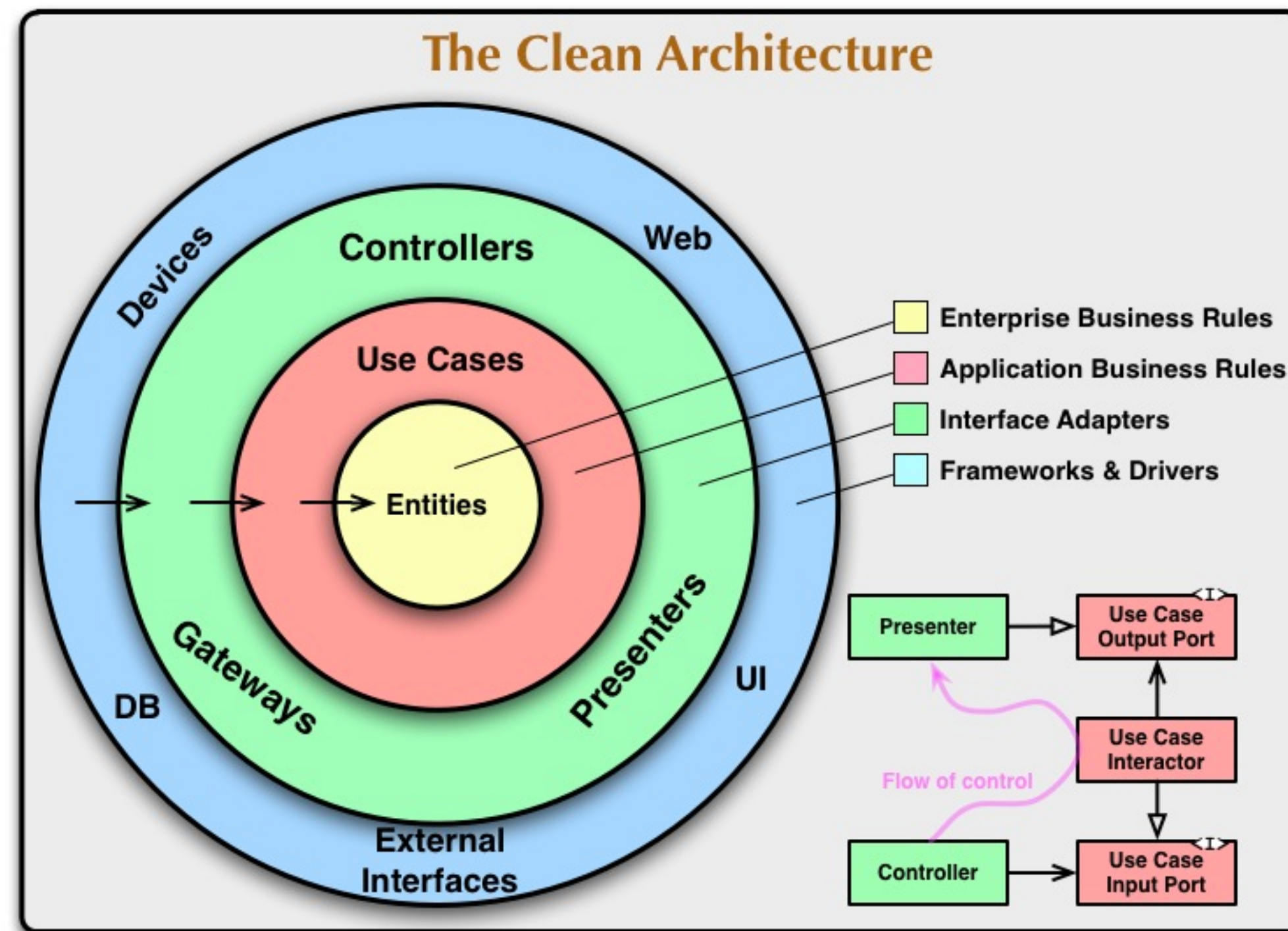
- How do I organize my project?
- I don't want to let my experience with other languages be too influential.
- Many well-written Go libraries seem to go deep and not wide, in their usage of packages.

# This Guy has helped in the past



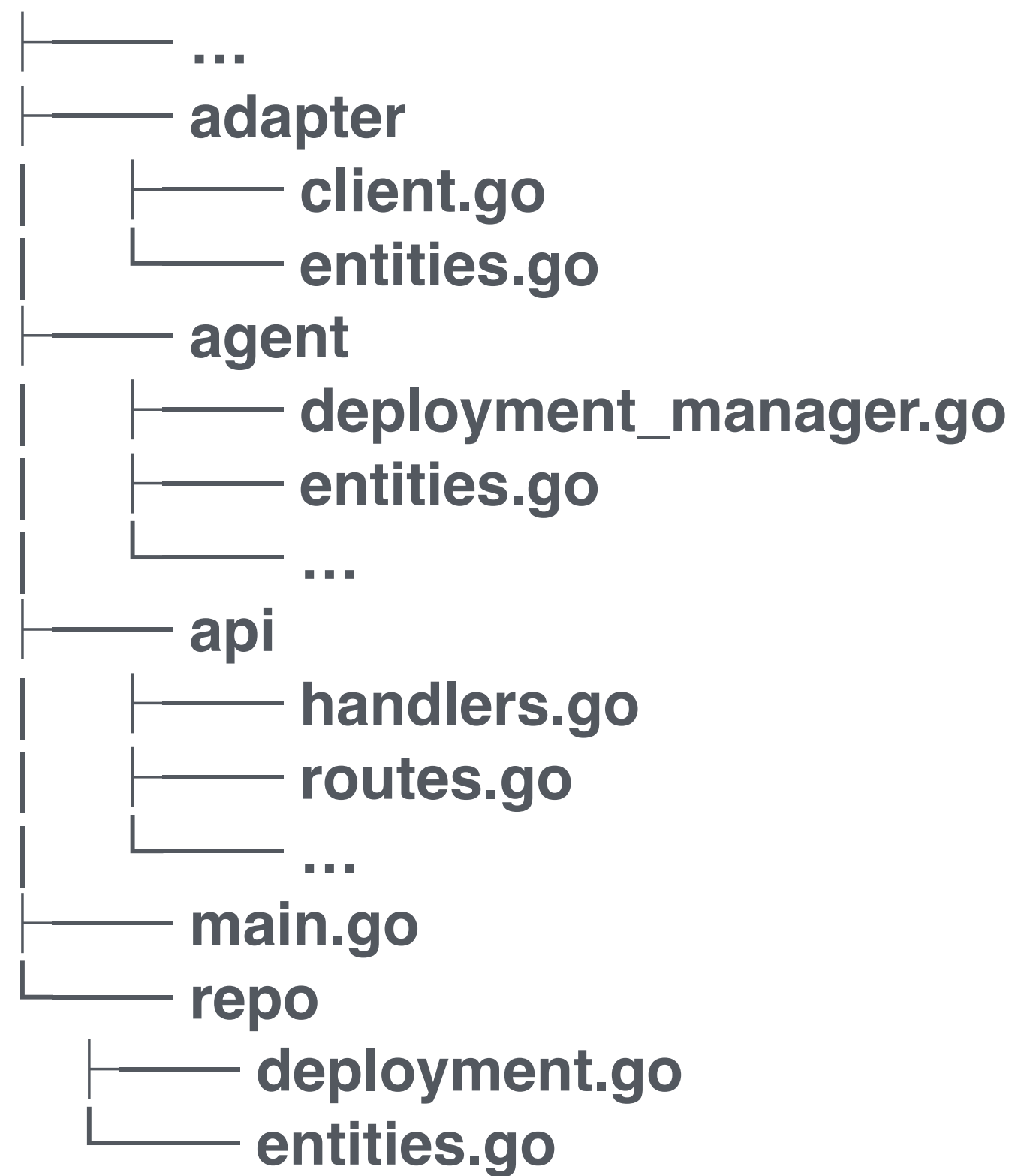


# Can I fit this mold?

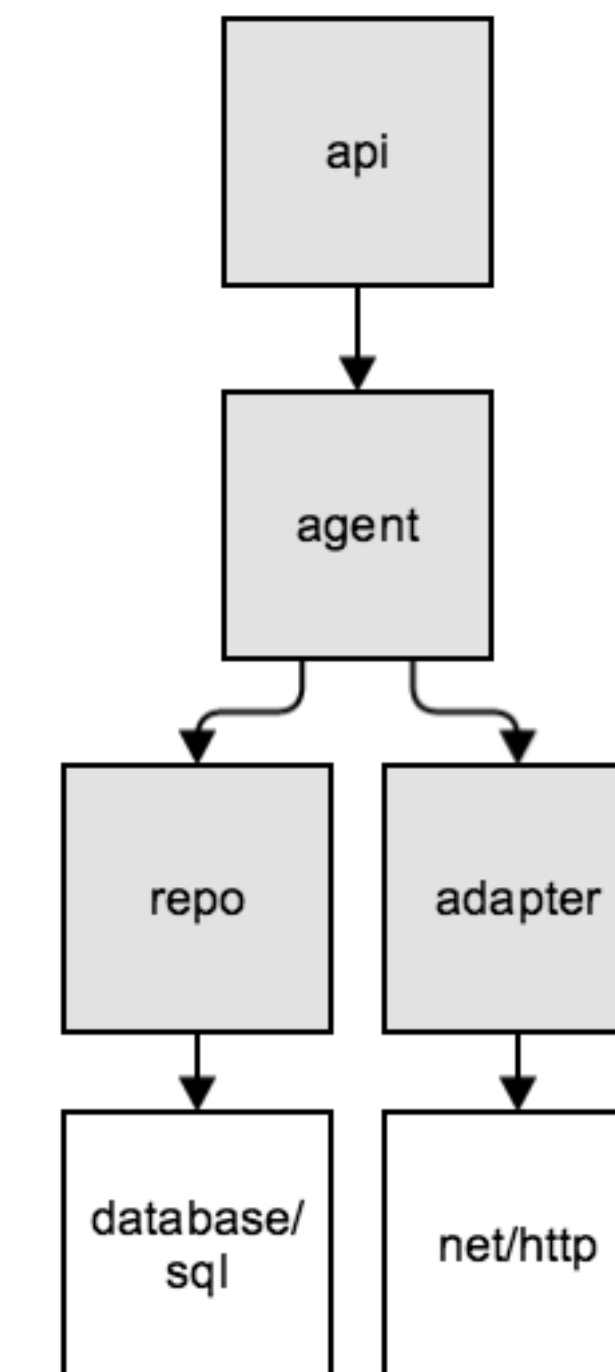


source: <http://blog.8thlight.com/uncle-bob/2012/08/13/the-clean-architecture.html>  
in Go: <http://manuel.kiessling.net/2012/09/28/applying-the-clean-architecture-to-go-applications/>

# Resulting Project Structure



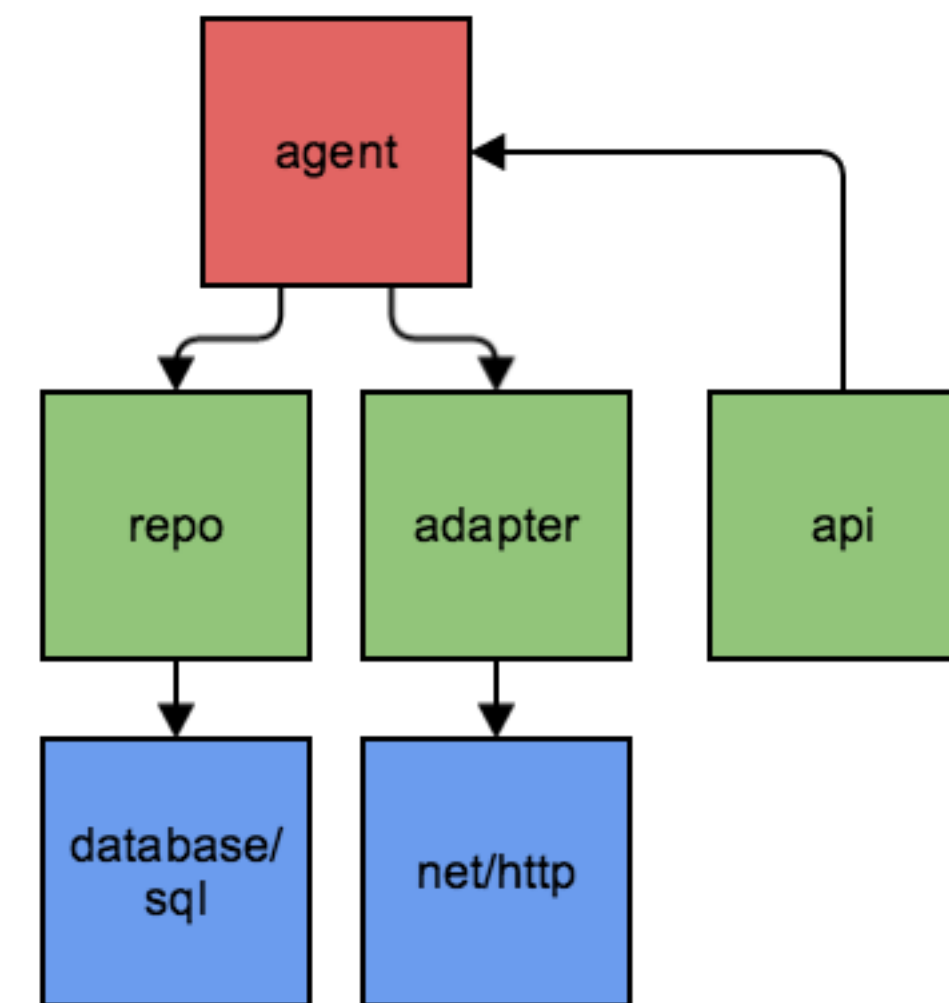
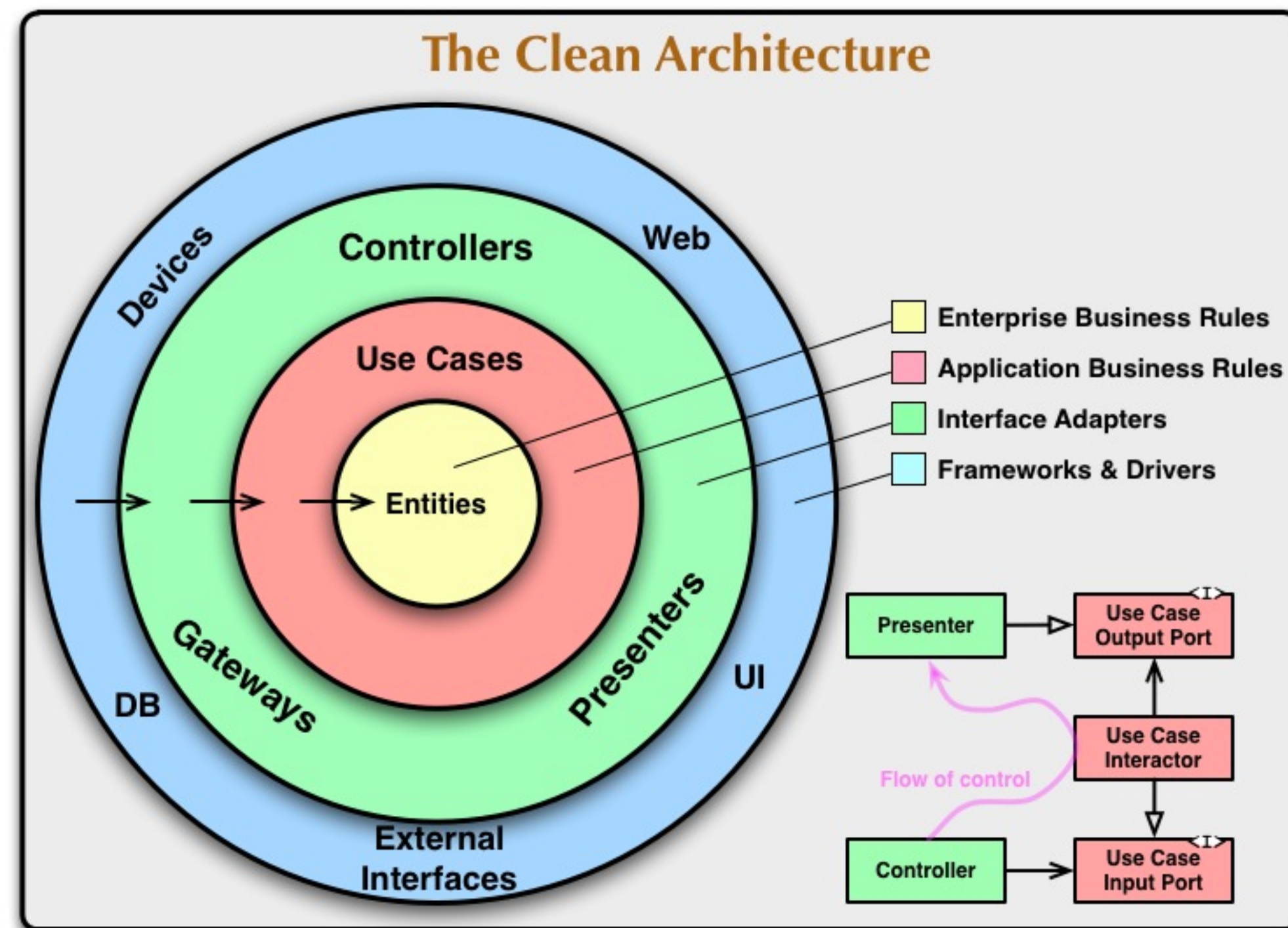
Dependency flow



*\*each box represents a package*

*\*\*white boxes are external packages*

# Fitting the mold



\*each box represents a package  
\*\*color coded to match layers on left

# So did we end up with a smaller footprint?

\$ docker images   grep agent				
centurylink/panamax-remote-agent-go	latest	53b330333d4b	2 minutes ago	15.98 MB
centurylink/panamax-remote-agent	latest	fd24fe2d243d	3 months ago	453.6 MB

**YES!** 3.5% of OG Image size



# Statically linked Binaries

*served in Docker containers*

<https://github.com/CenturyLinkLabs/golang-builder>

# Thanks!

Questions, comments, suggestions, and general feedback welcomed.

Go Adapter: <https://github.com/CenturyLinkLabs/panamax-remote-agent-go>

Ruby Adapter: <https://github.com/CenturyLinkLabs/panamax-remote-agent>

More at [centurylinklabs.com](https://centurylinklabs.com)