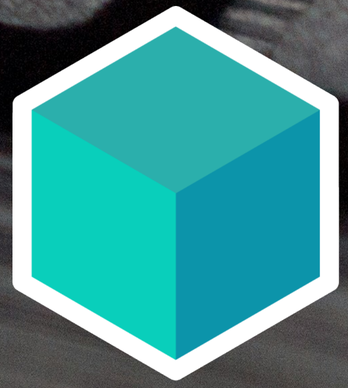


Mastering Testcontainers

Oleg Šelajev

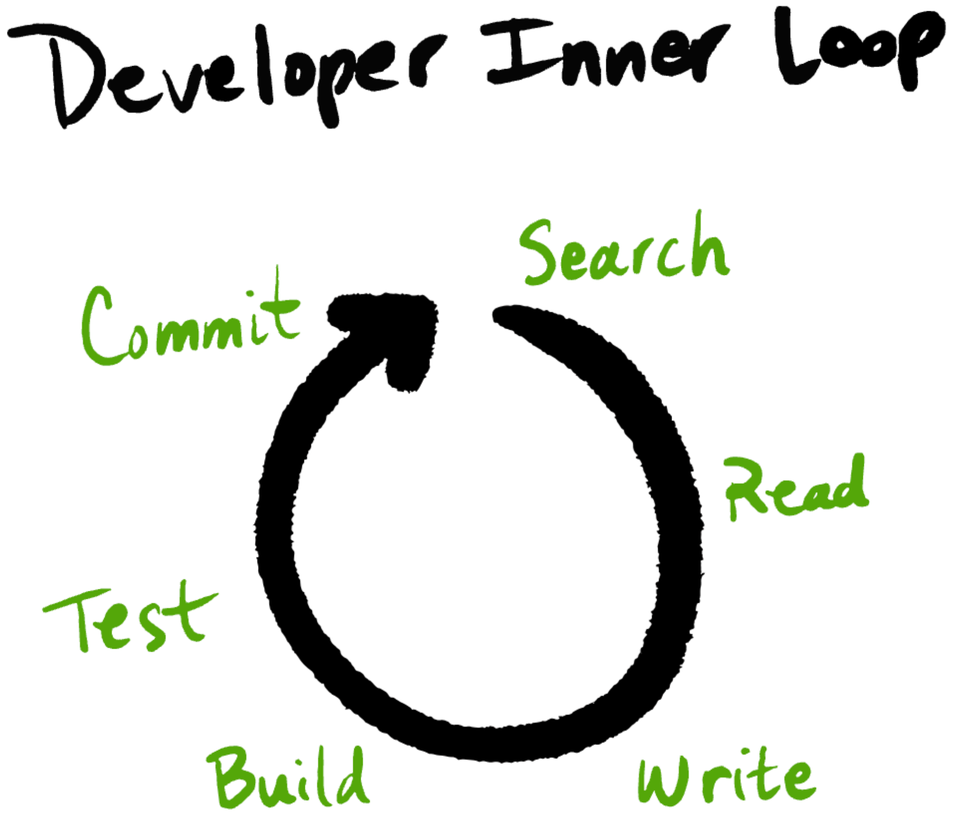
JDConf, 2024

Tests drive productivity

Feedback loops

Cognitive load

Flow state



Images from https://about.sourcegraph.com/blog/developer-productivity-thoughts

Flow state

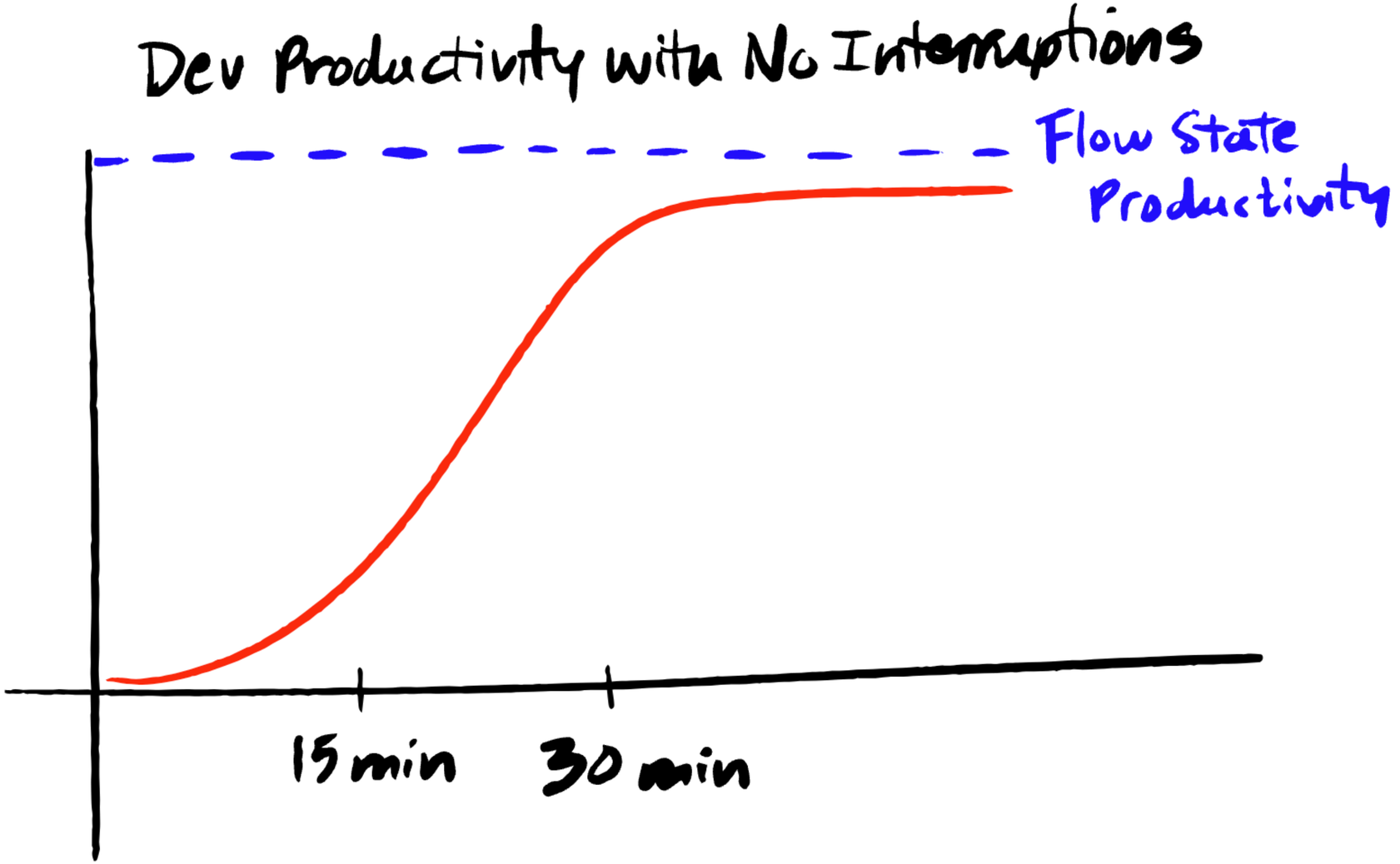
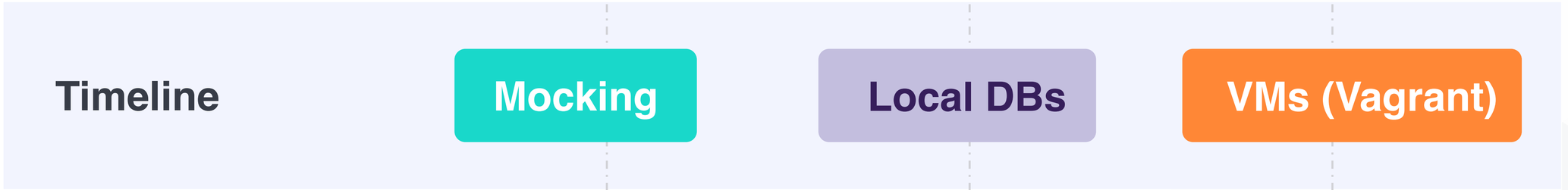
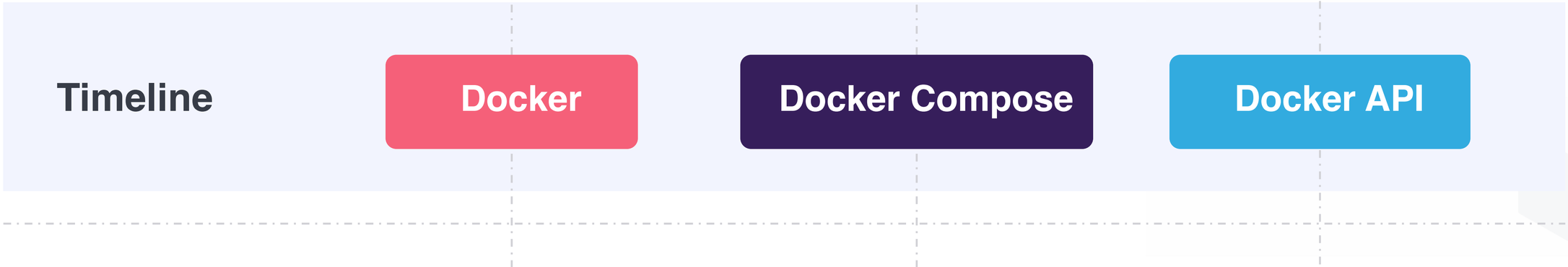


Image from https://about.sourcegraph.com/blog/developer-productivity-thoughts

Tests setup transformation



Tests setup transformation

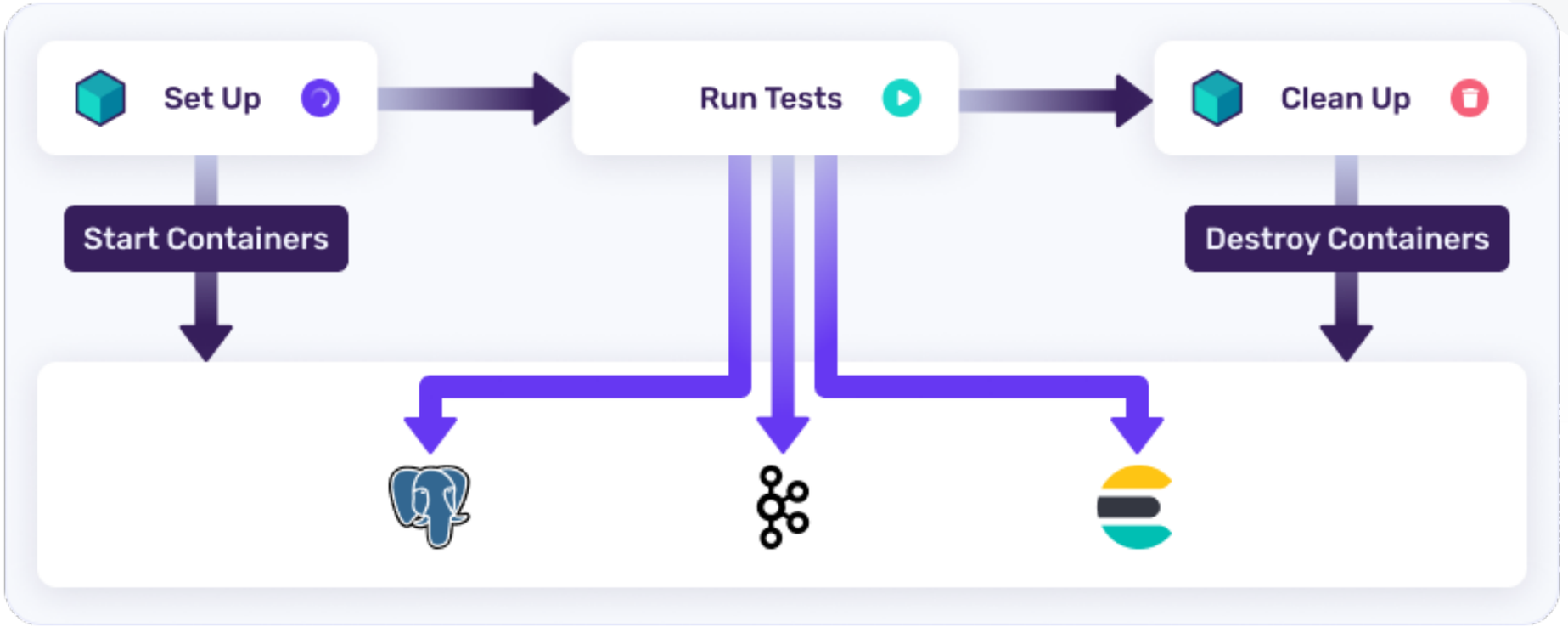


Test dependencies as code

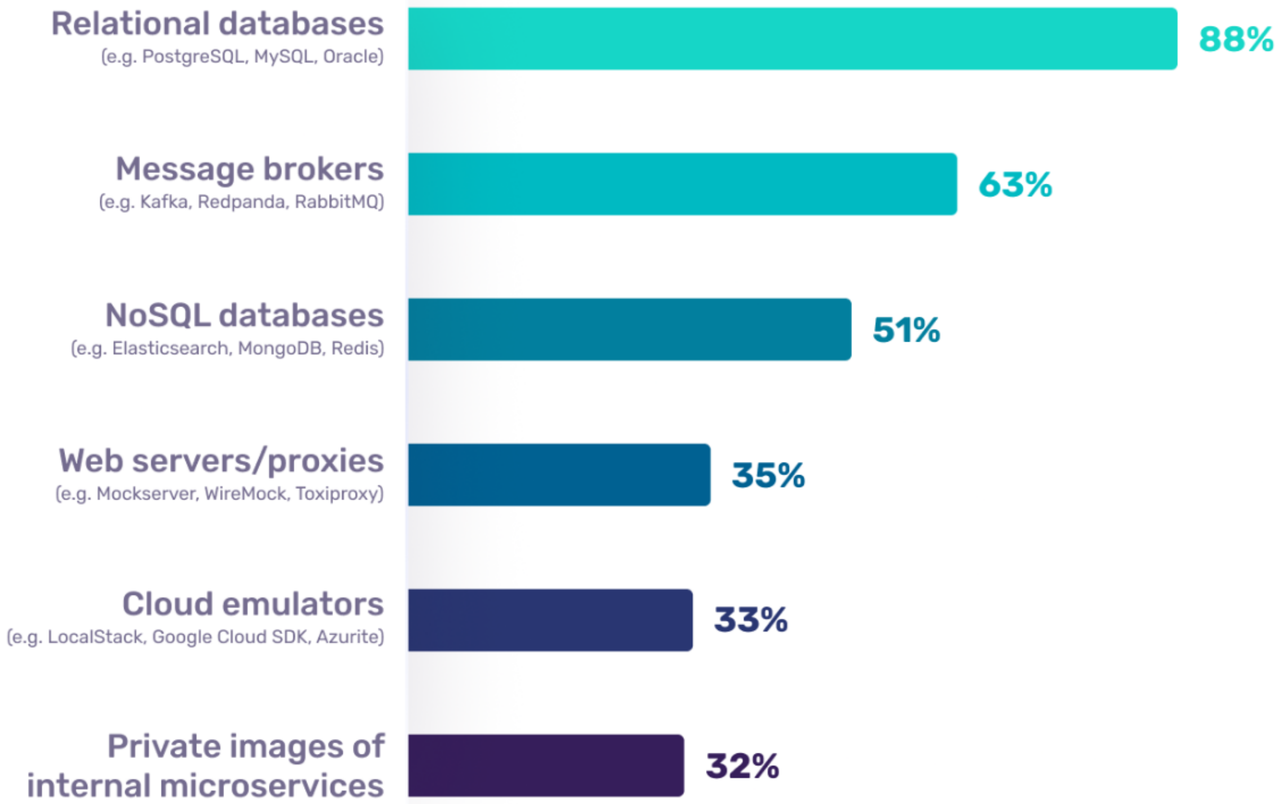
Testcontainers is an open source library
for providing ephemeral, lightweight instances
of test dependencies.

```
var redis = new GenericContainer(“redis:6-alpine”).withExposedPorts(6379)
```

Testcontainers Makes Tests Self-Contained



Testcontainers is now popular across all categories of dependencies



Testcontainers

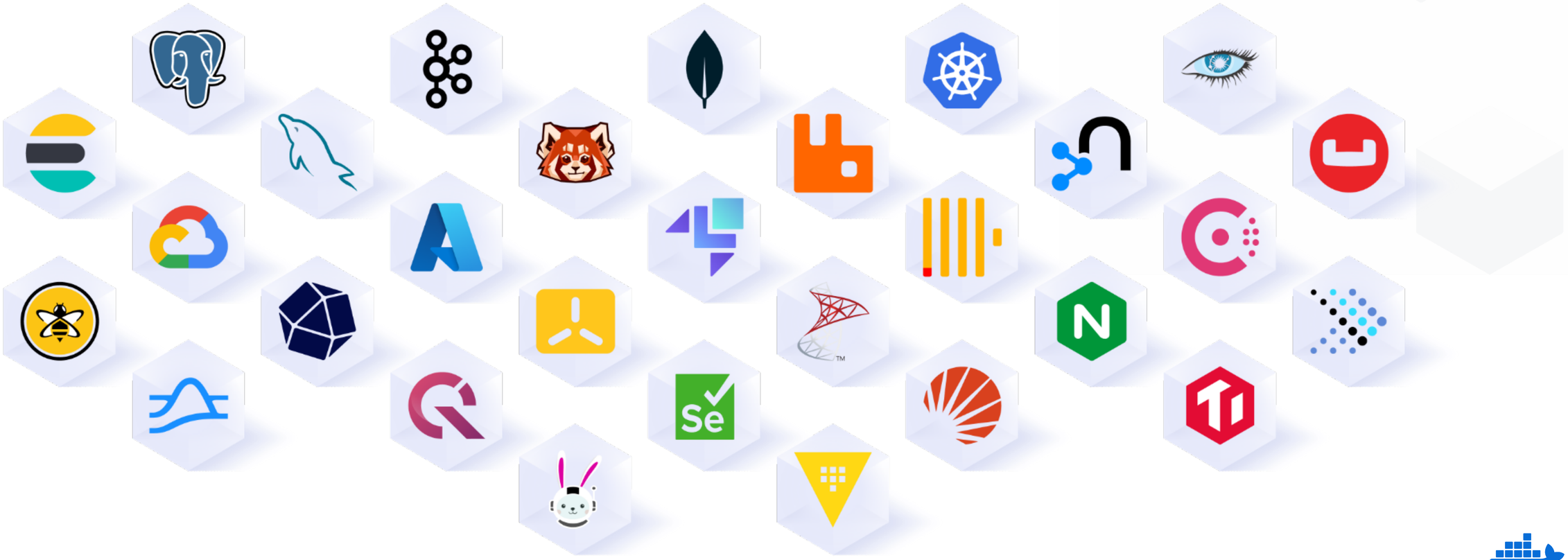
Two thirds of the community adopt 3+ testing use cases

Source: AtomicJar

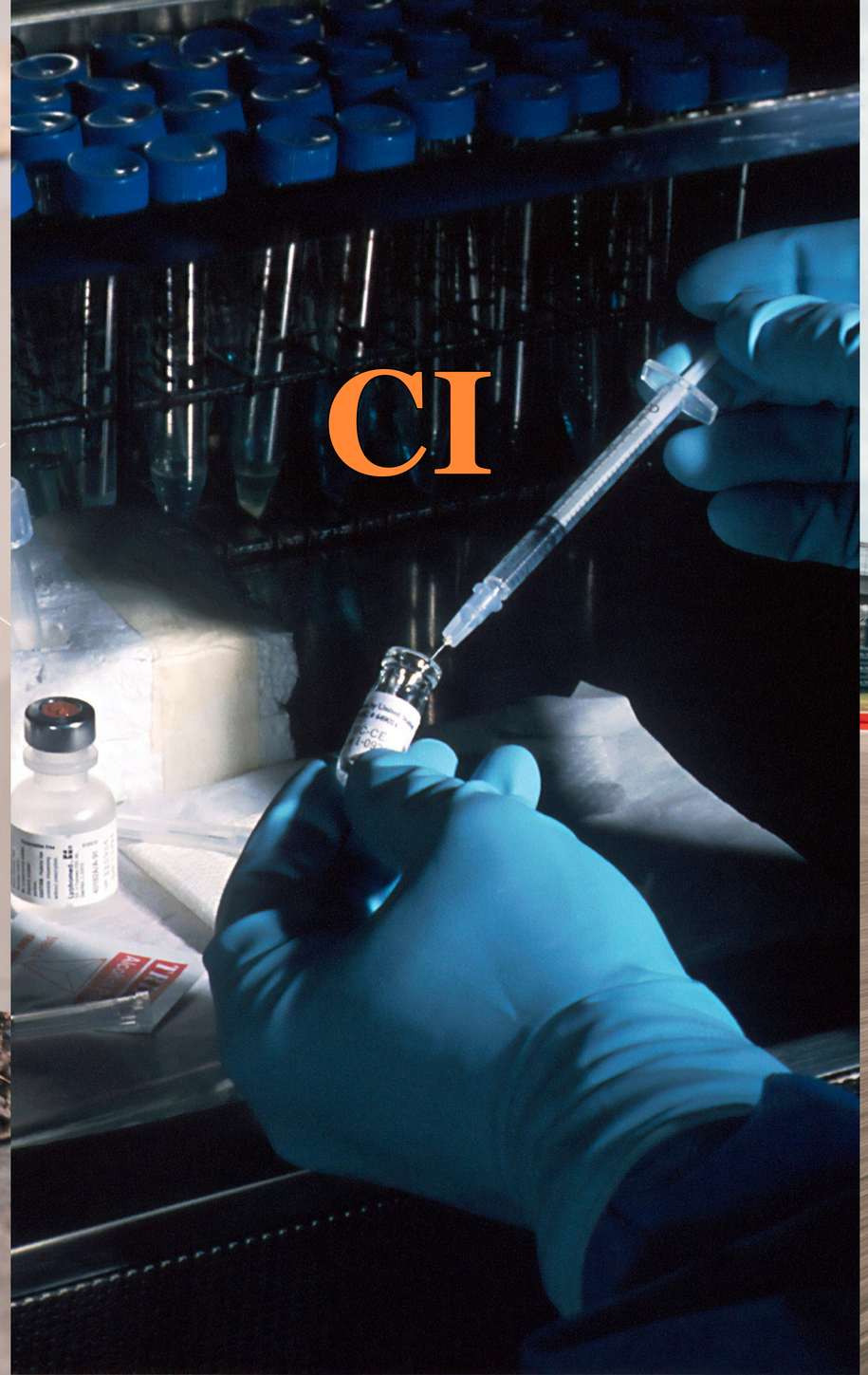
Testcontainers modules

Test against any database, message broker, browser…

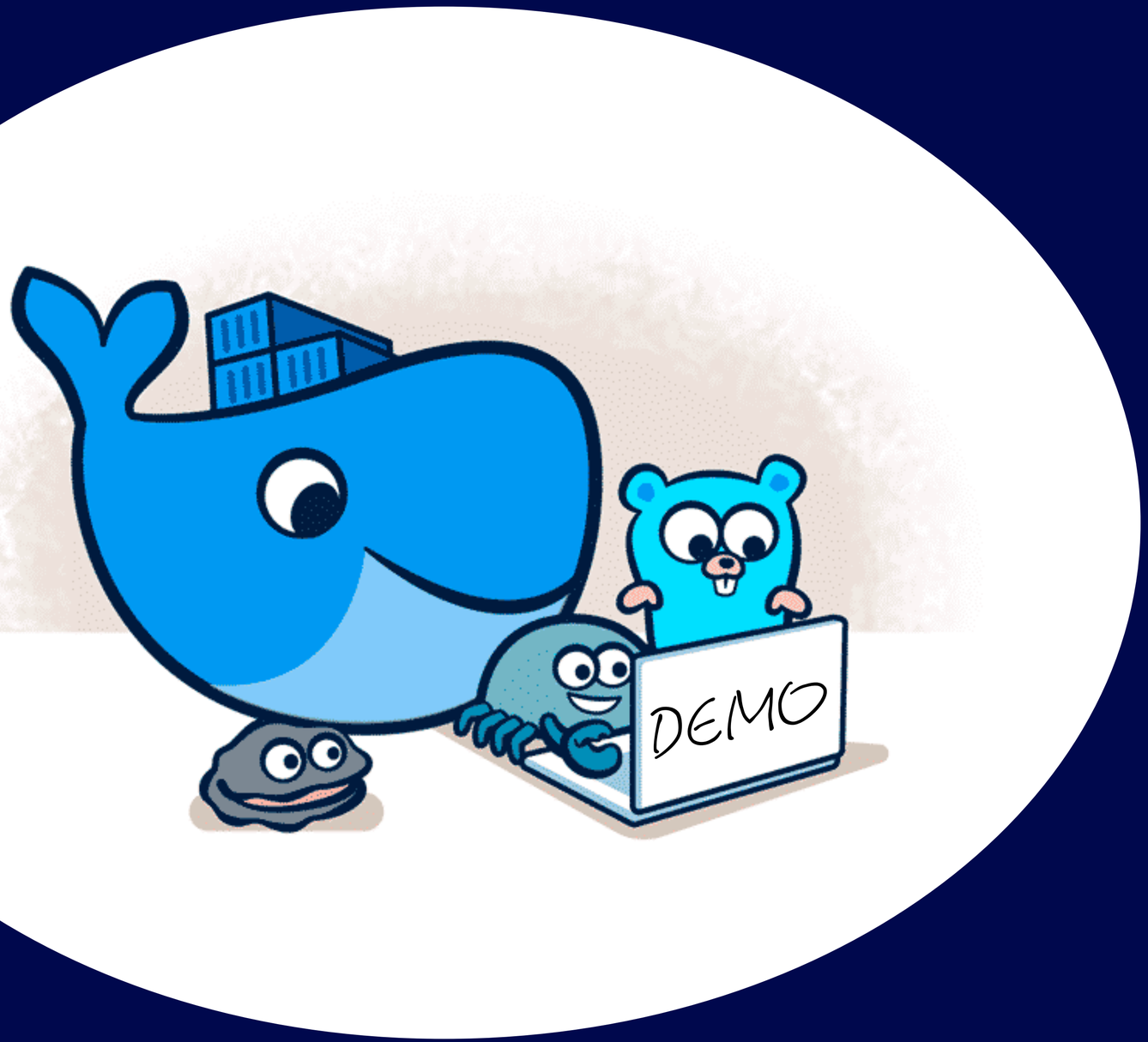
or just about anything that runs in a Docker container!



Dev
WARRIOR


CI

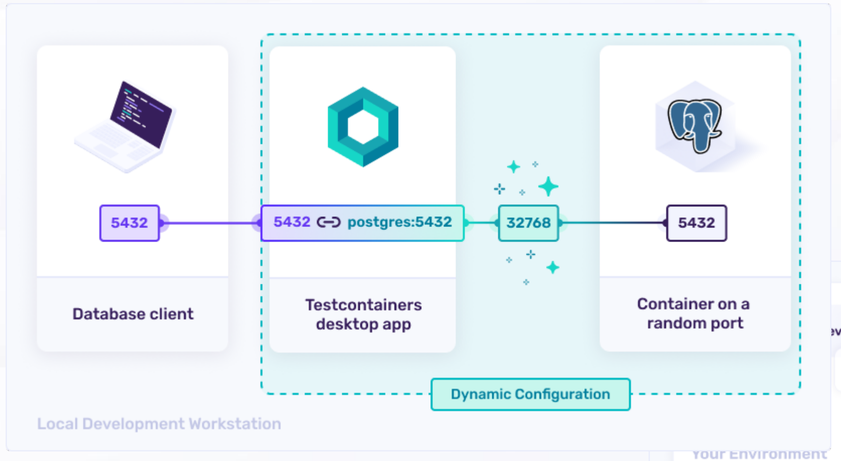
Prod

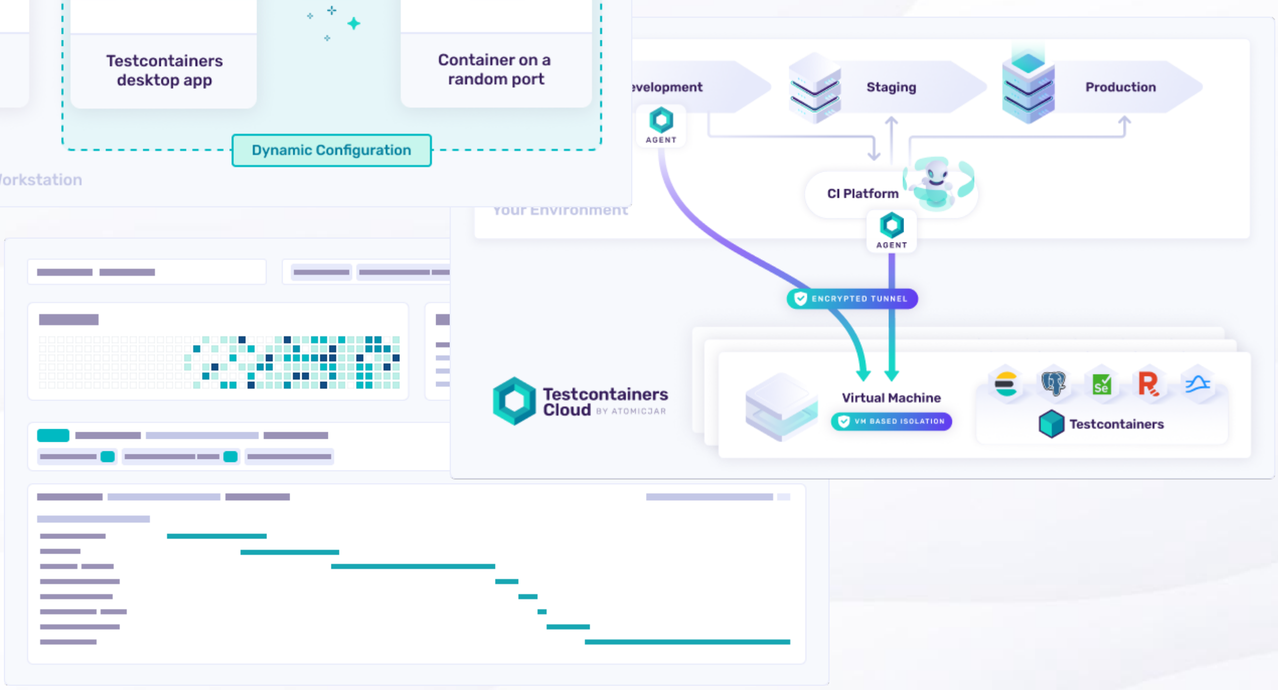

DEMO

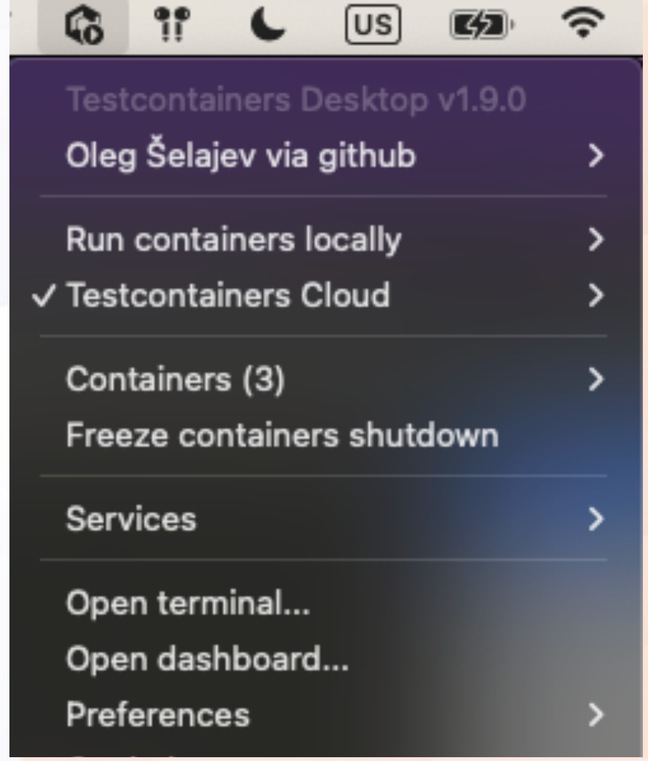
Why are Testcontainers - 🏆🏆🏆

- Flexible lifecycle API: isolation vs convenience
- Capable of abstractions
  - modules
- Waiting strategies
- Complex network topologies
- Randomized ports mapping
- Everything is dynamic allowing parallelisation
- Self-contained tests: feels like a unit, reliable like integration

Testcontainers Desktop







testcontainers.com/desktop

Resources

- slack.testcontainers.com

- testcontainers.com

- testcontainers.com/guides

- https://github.com/testcontainers/java-local-development-workshop

- https://testcontainers.cloud