

Mastering Testcontainers

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JDConf, 2024

Tests drive productivity

Feedback loops

Cognitive load

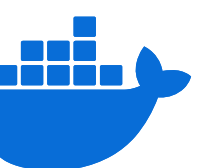
Flow state



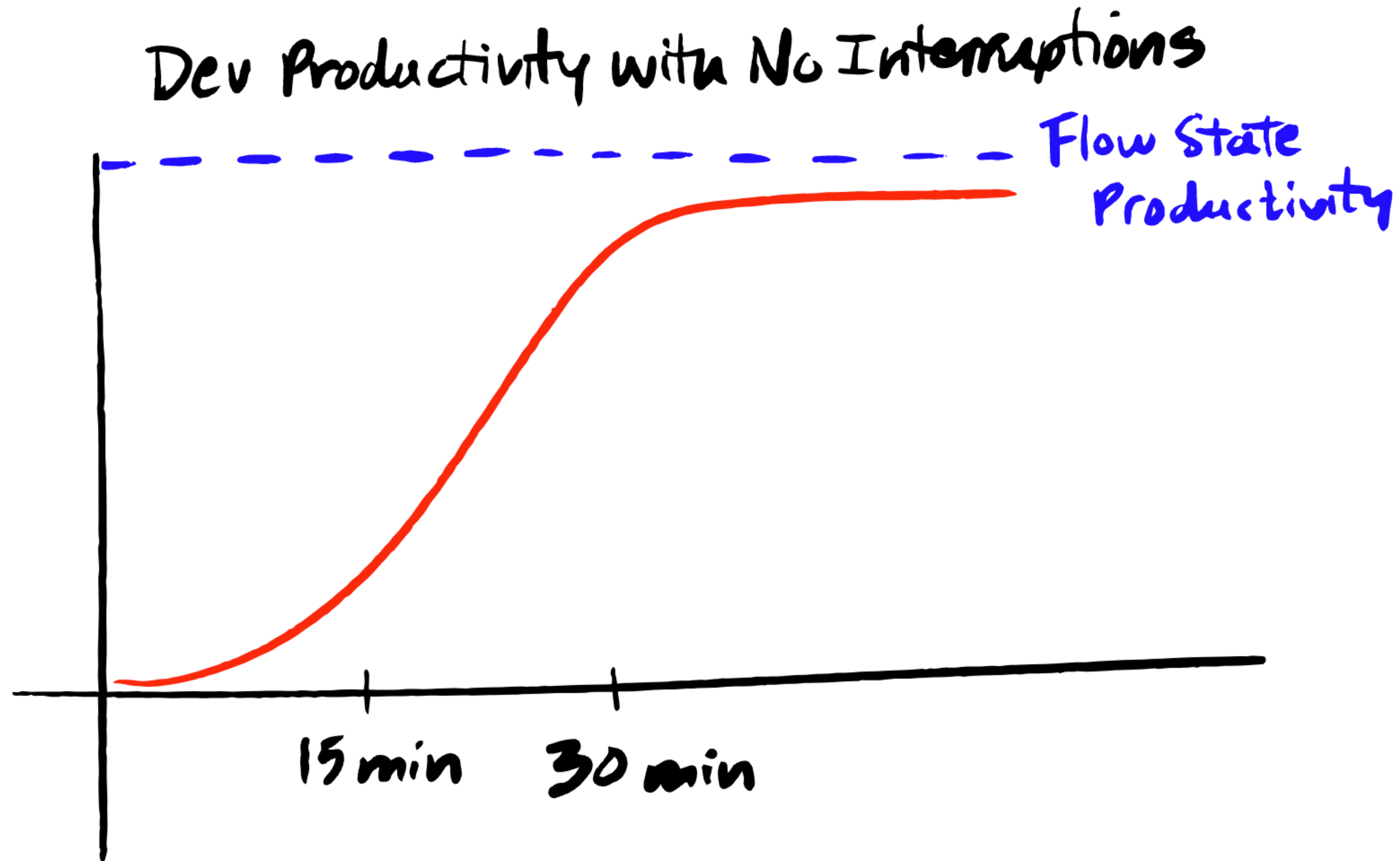
Developer Inner Loop



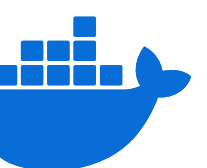
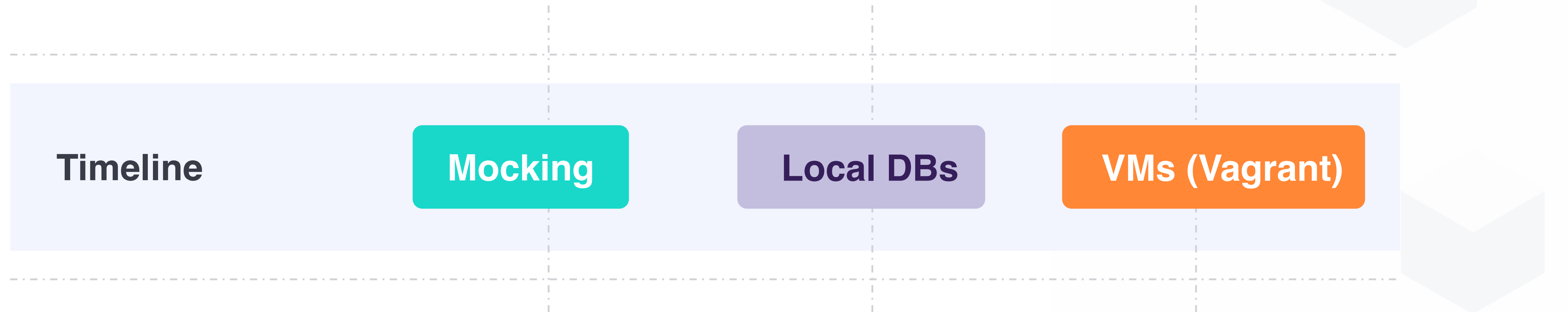
Images from <https://about.sourcegraph.com/blog/developer-productivity-thoughts>



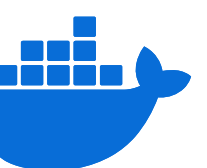
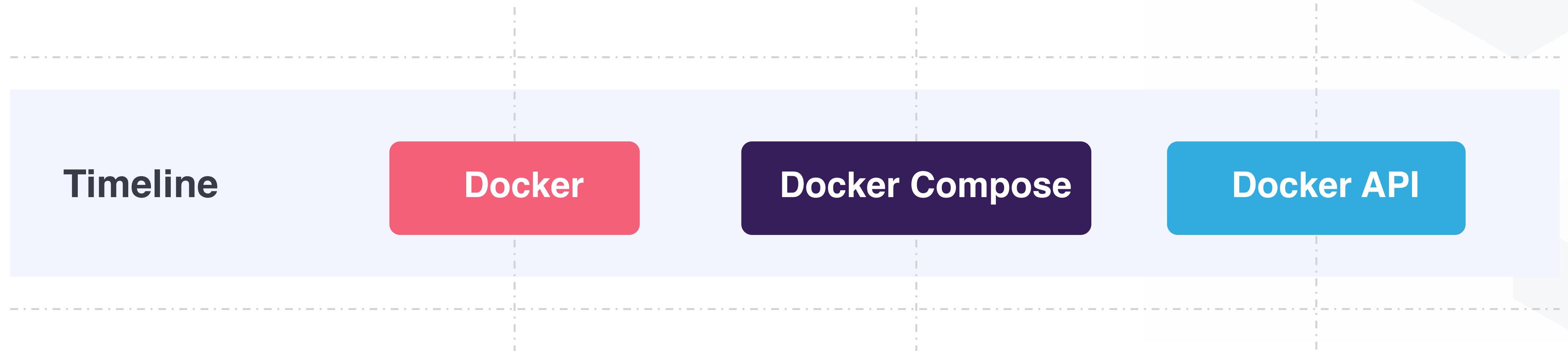
Flow state



Tests setup transformation



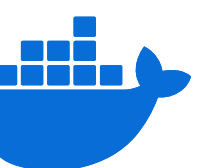
Tests setup transformation



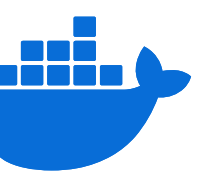
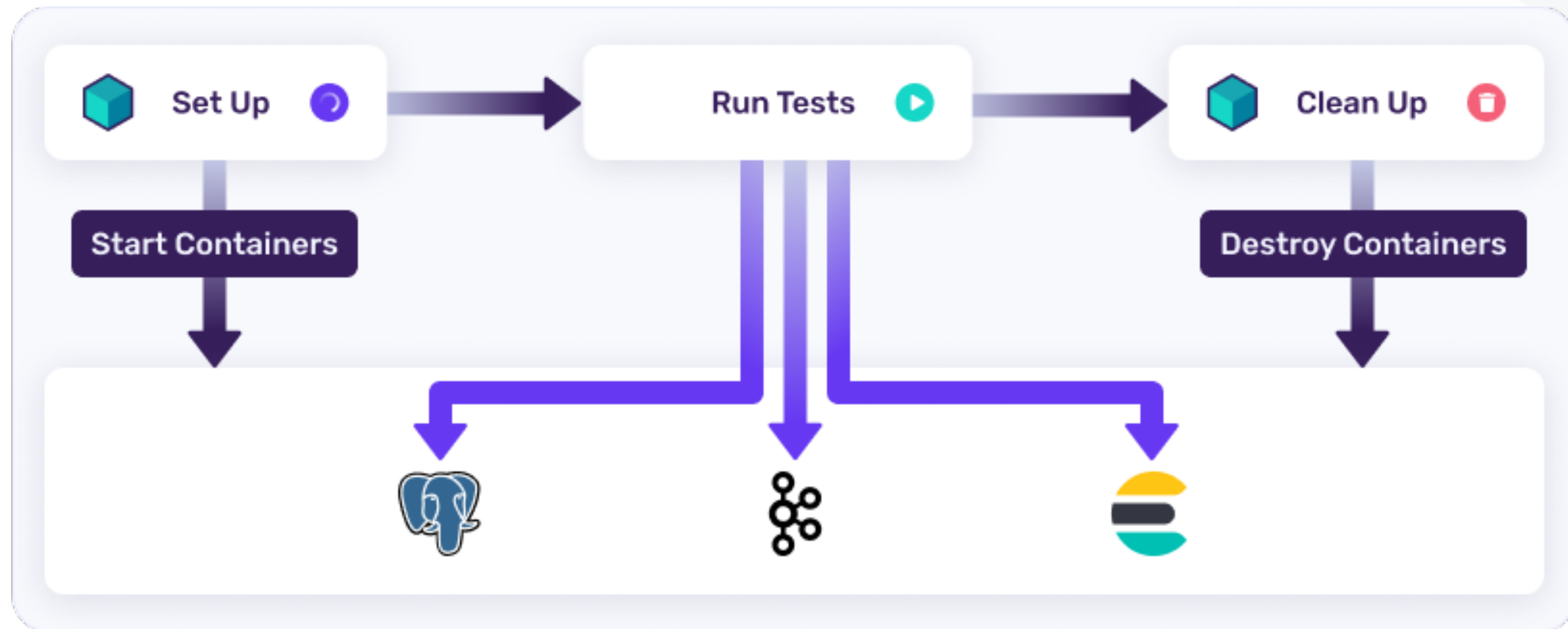
Test dependencies as code

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

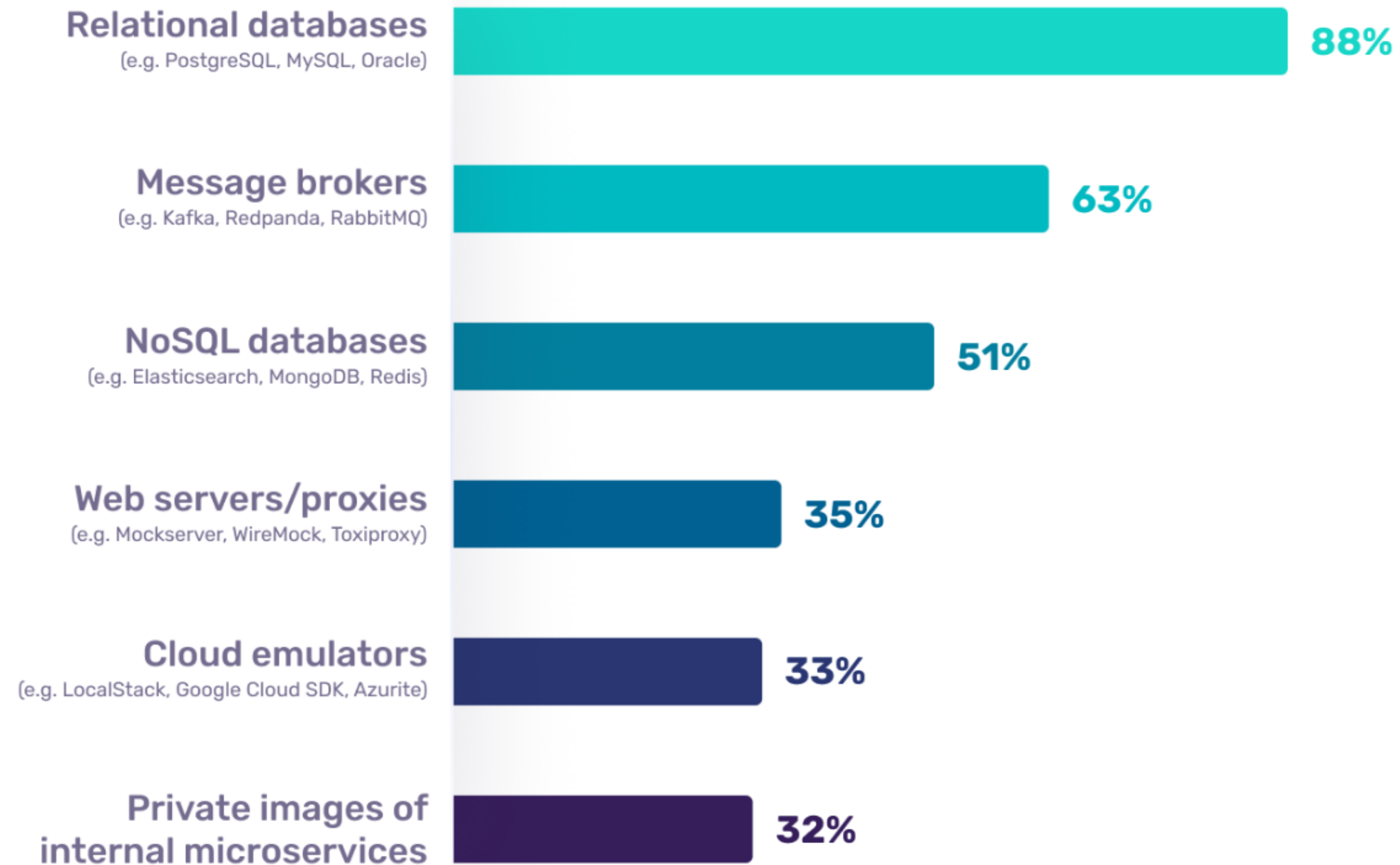
```
var redis = new GenericContainer("redis:6-alpine").withExposedPorts(6379)
```



Testcontainers Makes Tests Self-Contained



Testcontainers is now popular across all categories of dependencies



Testcontainers

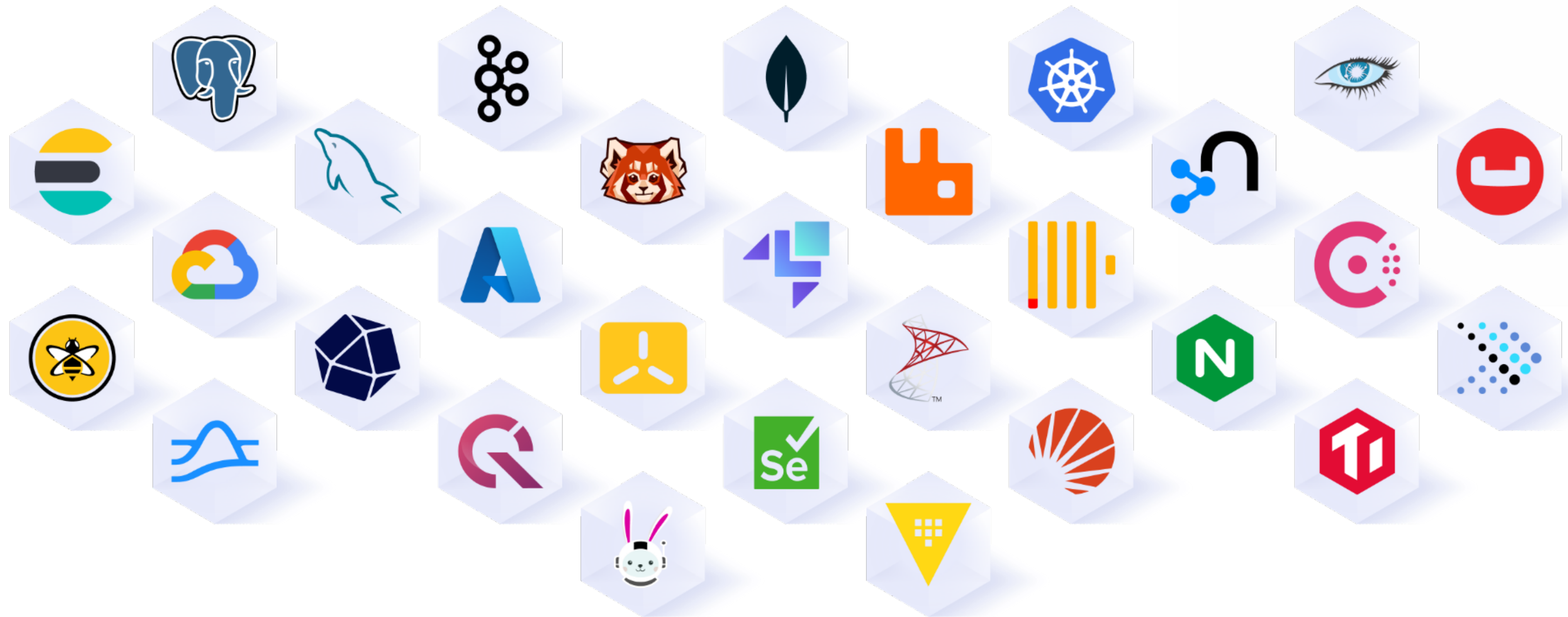
Two thirds of the community adopt 3+ testing use cases

Source: AtomicJar



Testcontainers modules

Test against any database, message broker, browser...
or just about anything that runs in a Docker container!





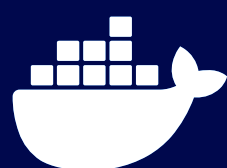
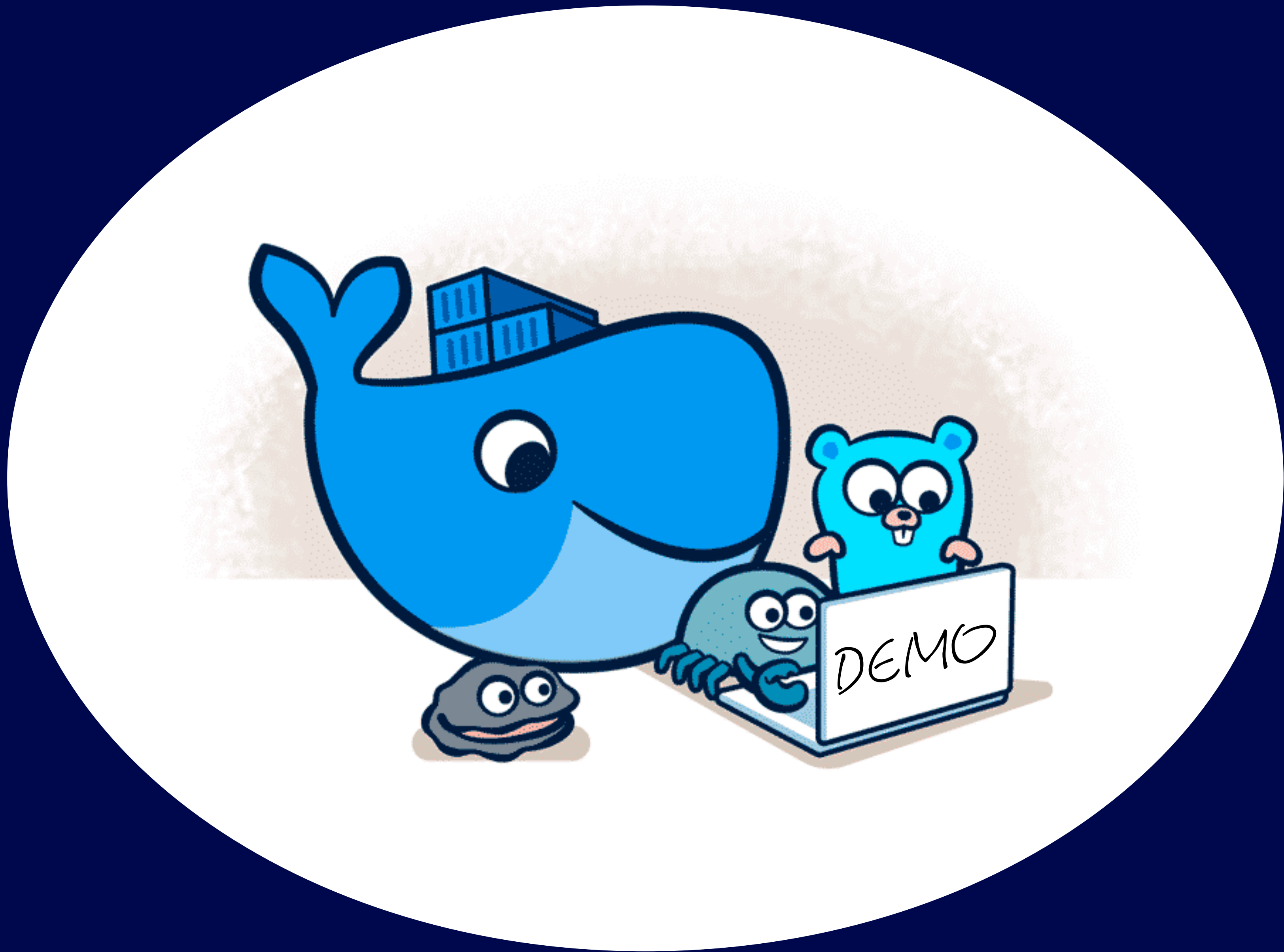
Dev



CI



Prod

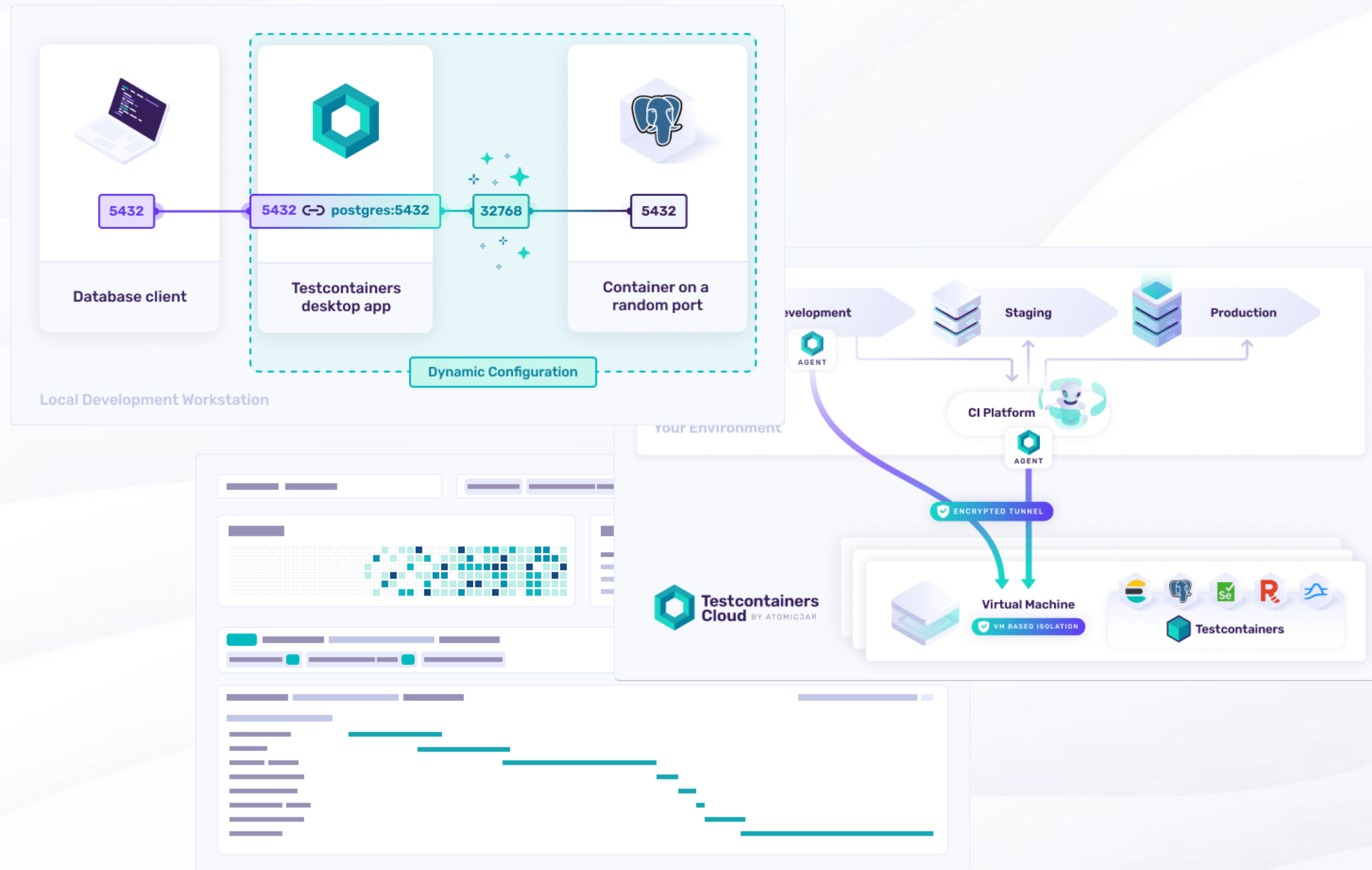


Why are Testcontainers -

- 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 Desktop v1.9.0
Oleg Šelajev via github >

Run containers locally >
✓ Testcontainers Cloud >

Containers (3) >
Freeze containers shutdown

Services >

Open terminal...
Open dashboard...
Preferences >

Resources



- slack.testcontainers.com



- testcontainers.com



- testcontainers.com/guides



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



- <https://testcontainers.cloud>