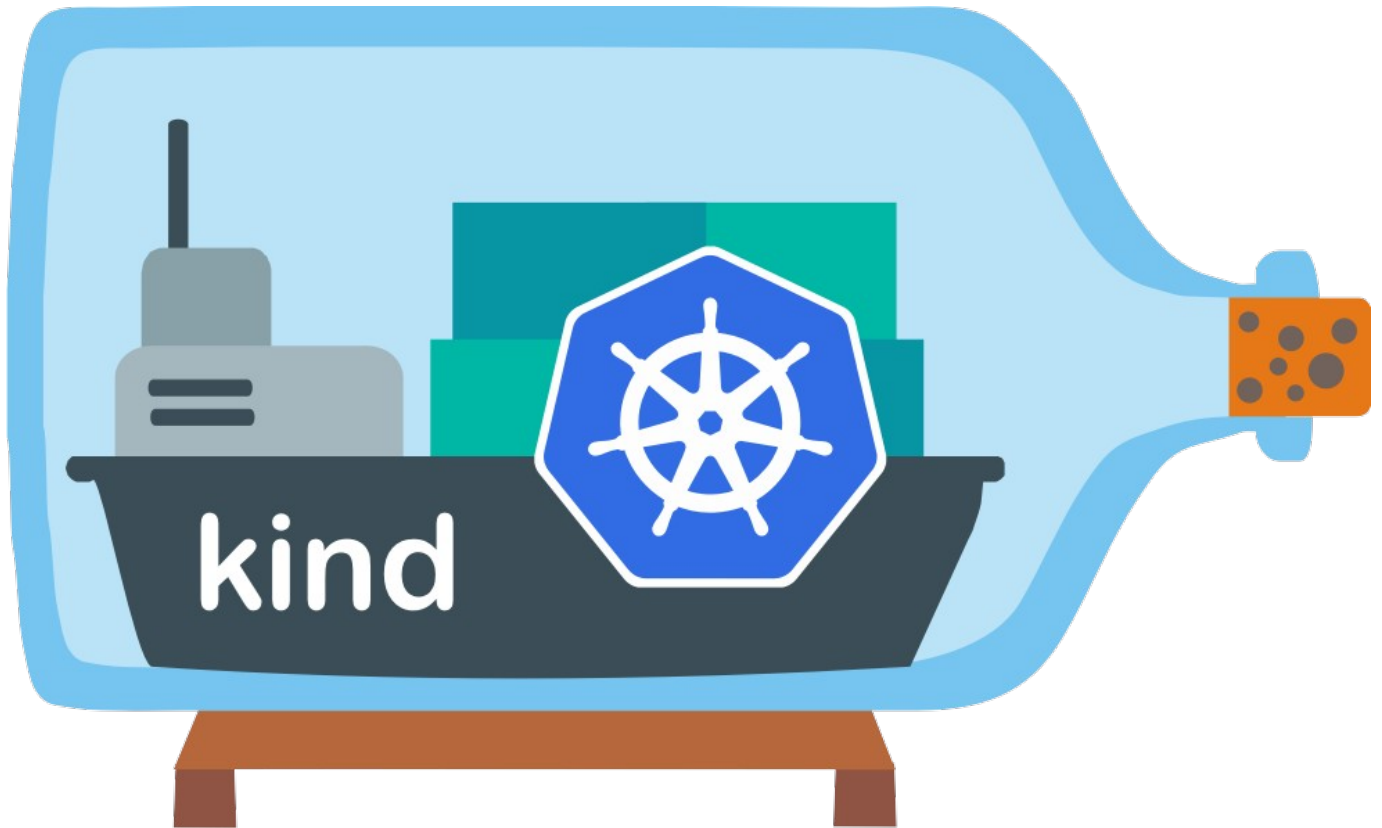


How we benefits from KIND (kubernetes in docker)



Dario Maiocchi

What is kind ?

<https://github.com/kubernetes-sigs/kind>

Kubernetes in docker

Why kind?

Kind is lightweight.

Run test locally and remotely (GitHub)
fast and easy.

It is used upstream

Kind Part 01:

- * Kind ecosystems and operators

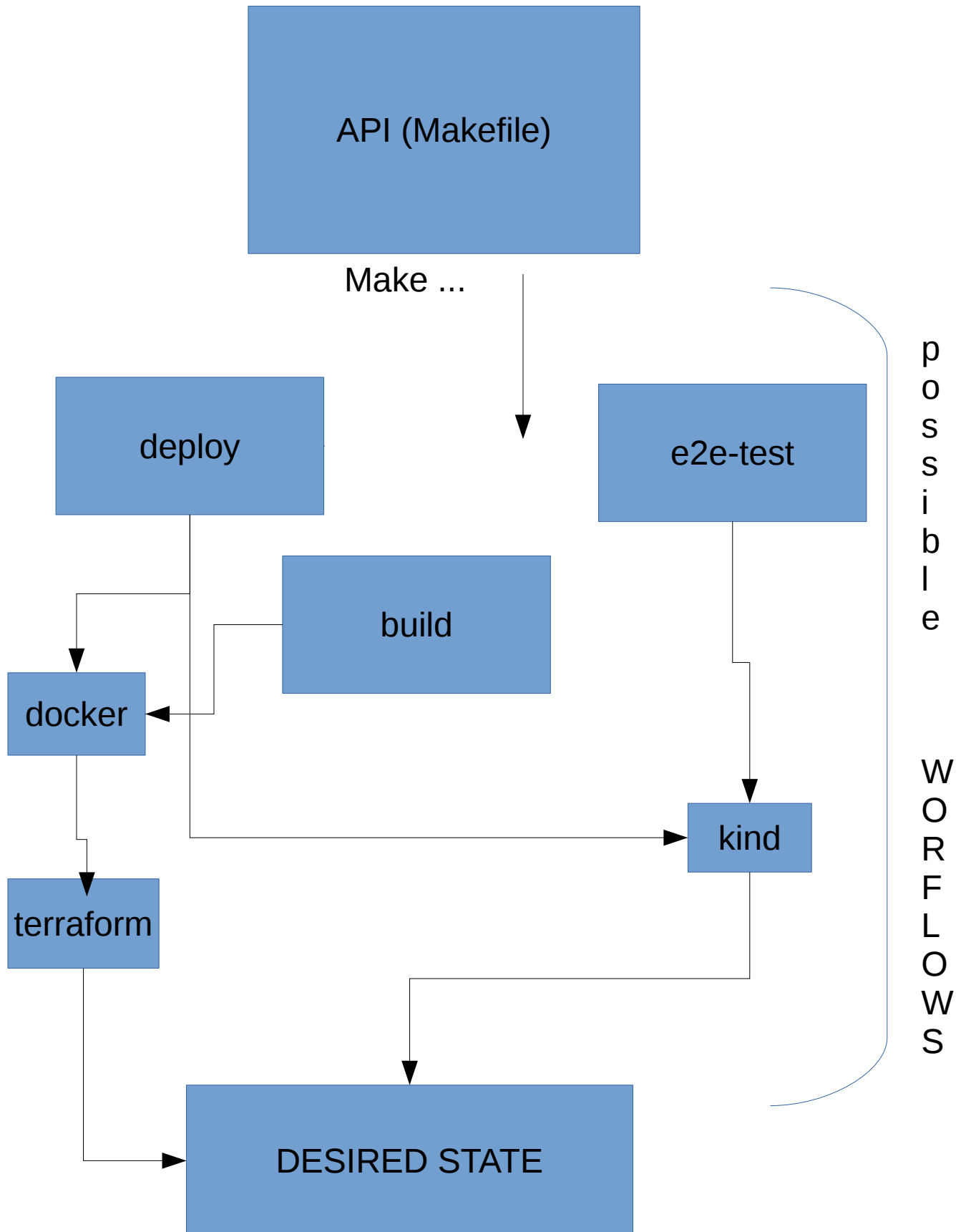
- 1) The general idea about how kind fit in our existing context

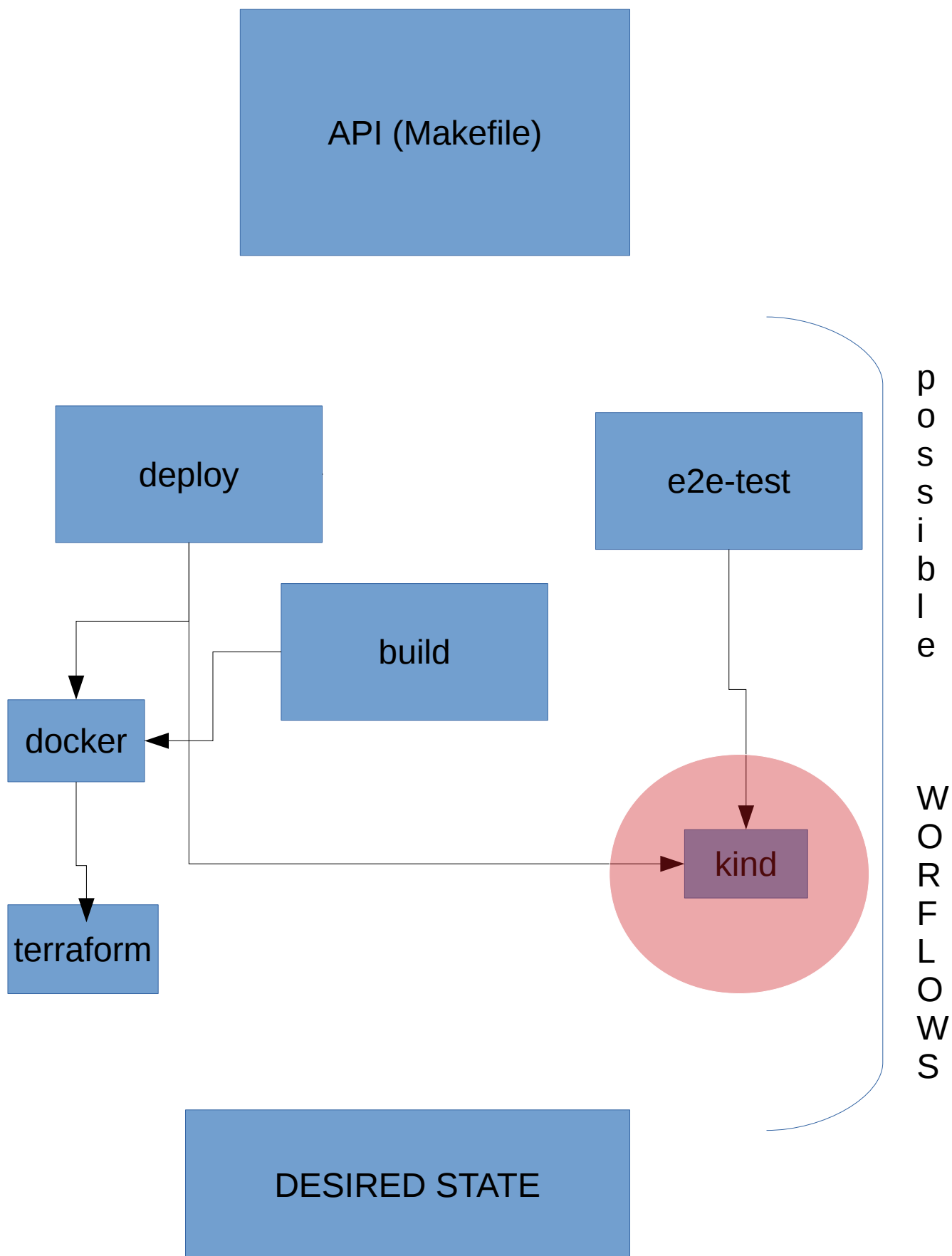
- 2) Kind with kubernetes operators. (registry-operator and dex as example)

OUR DESIGN GOALS:

- 1) REMOTE = LOCAL execution
- 2) Frameworkless as possible
- 3) easy to execute, change and maintain. (API allow transparency)
- 4) Being composable of small units (UNIX principle)

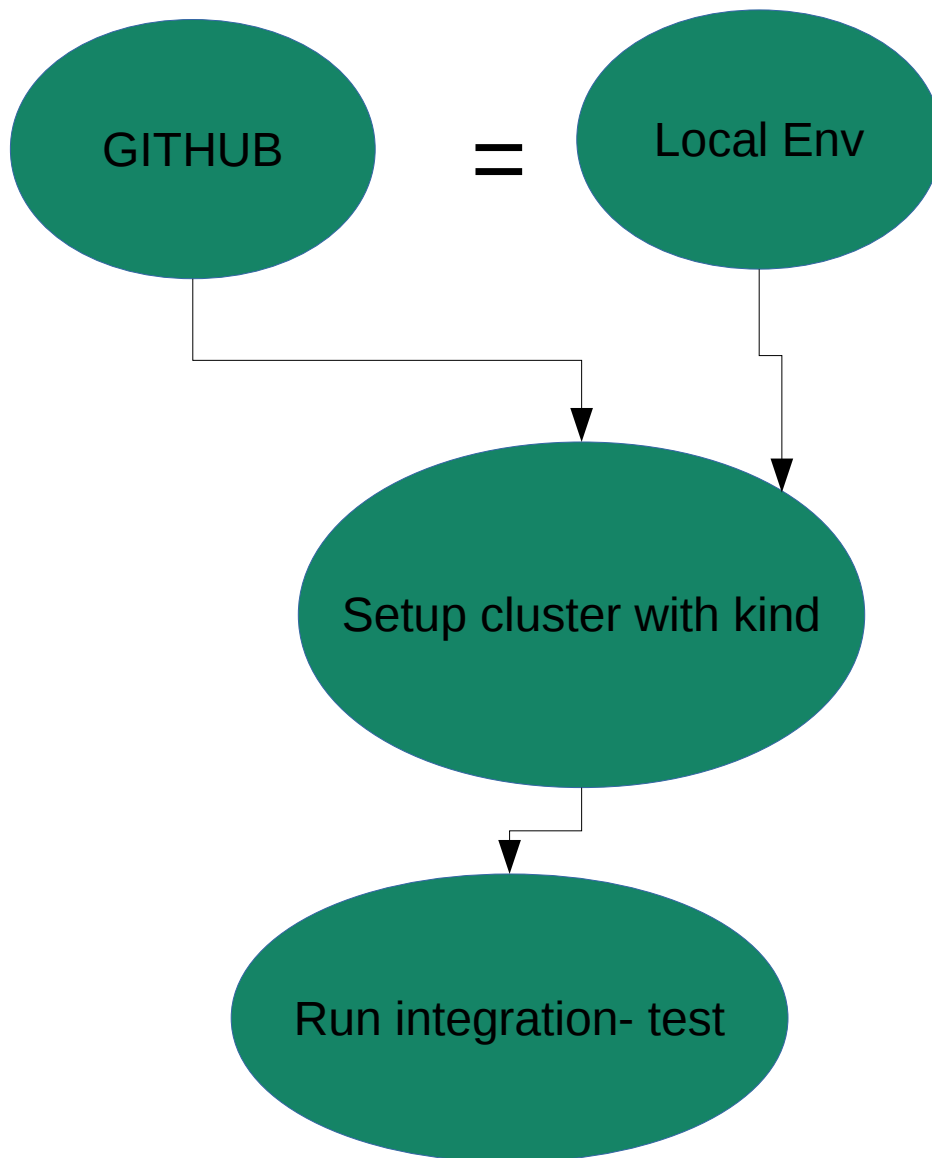
API DEEP-DIVE





KIND with kubernetes operators.

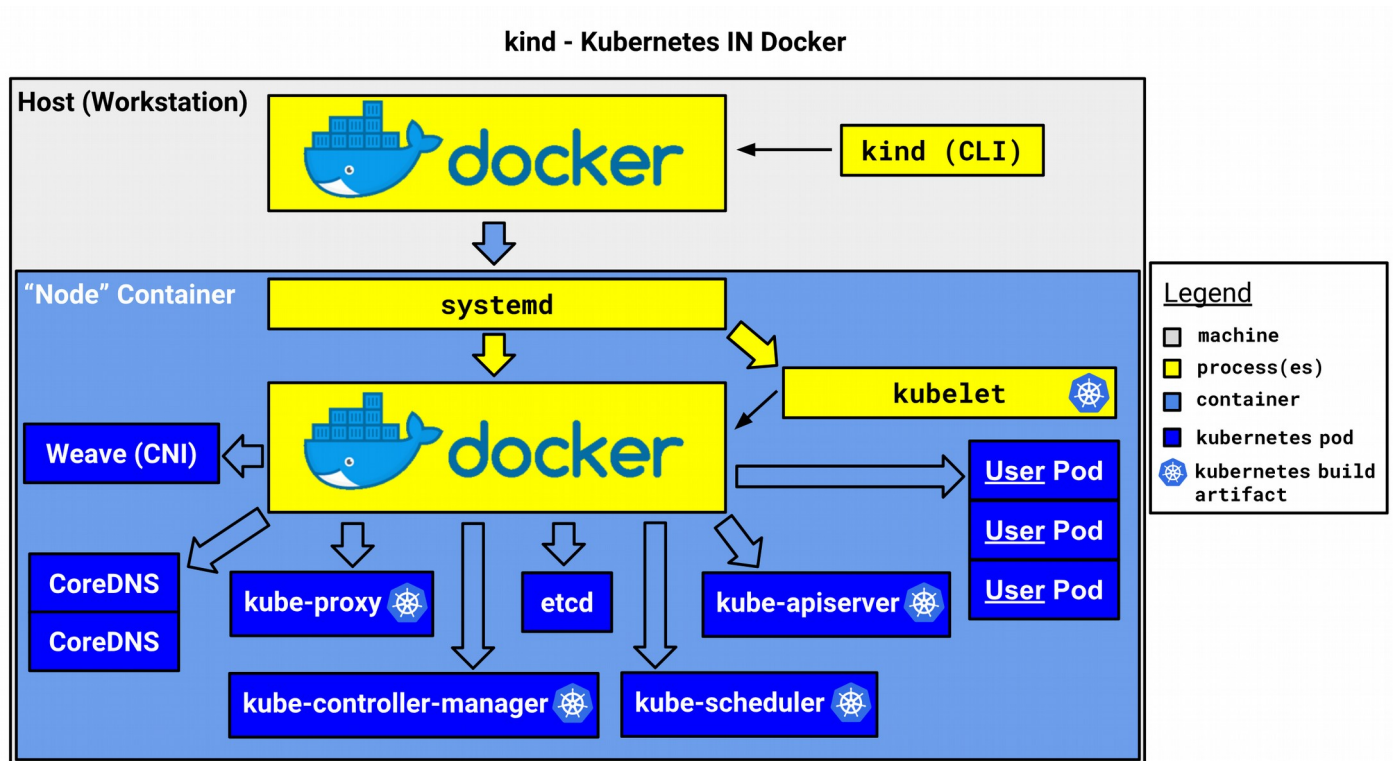
(Kubernetes operator pattern extend K8s cluster with custom functionality)



GOAL: validate operators against a cluster before merging Prs.

<https://github.com/kubernetes-sigs/kind/blob/master/docs/design/design.md>

KIND CURRENT DESIGN



Real EXAMPLES from our GITHUB:

```
441 $ go env
468 Using Go 1.5 Vending, not checking for Godeps
469 Makefile detected
470 $ curl -Lo kubect1 https://storage.googleapis.com/kubernetes-release/release/v1.12.0/bin/linux/amd64
471 $ make kind-install KIND_VERSION="0.0.1"
477 $ make kind-create-cluster
478 kind create cluster
479 Creating cluster 'kind-1' ...
480 ✓ Ensuring node image (kindest/node:v1.12.2)
481 ✓ [kind-1-control-plane] Creating node container
482 ✓ [kind-1-control-plane] Fixing mounts
483 ✓ [kind-1-control-plane] Starting systemd
484 ✓ [kind-1-control-plane] Waiting for docker to be ready
485 ✓ [kind-1-control-plane] Starting Kubernetes (this may take a minute)
486 Cluster creation complete. You can now use the cluster with:
487
488 export KUBECONFIG="$(kind get kubeconfig-path)"
489 kubect1 cluster-info
490 $ make kind-e2e-tests
491 make e2e-tests KUBECONFIG=/home/travis/.kube/kind-config-1
492 make[1]: Entering directory `/home/travis/gopath/src/github.com/kubic-project/registries-operator'
493 sh ./tests/e2e-tests.sh
494 KUBECONFIG variable point to :
495 /home/travis/.kube/kind-config-1
496
497 -- cluster info --
498 Kubernetes master is running at https://localhost:35184
499 kubeDNS is running at https://localhost:35184/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy
500
501 To further debug and diagnose cluster problems, use 'kubect1 cluster-info dump'.
502
503 make[2]: Entering directory `/home/travis/gopath/src/github.com/kubic-project/registries-operator'
504 >>> Building cmd/registries-operator/registries-operator...
505 GO111MODULE=on GO15VENDOREXPERIMENT=1 go build -ldflags "-X=main.Version=1.0.0 -X=main.Build=`git rev-parse HEAD 2>/dev/null`" -o
cmd/registries-operator/registries-operator cmd/registries-operator/main.go
```

```
20 go: downloading golang.org/x/text v0.3.0
21 go: downloading golang.org/x/sys v0.0.0-20181005133103-4497e2df6f9e
22 go: downloading k8s.io/utils v0.0.0-20180918230422-cd34563cd63c
23 go: downloading github.com/ugorji/go v1.1.1
24 >>> Using /home/travis/.kube/kind-config-1...
25 >>> Loading stuff with kubect1 apply
26 serviceaccount/regs-jobs created
27 serviceaccount/regs-controller created
28 customresourcedefinition.apiextensions.k8s.io/registries.kubic.opensuse.org created
29 >>> Running cmd/registries-operator/registries-operator
30 cmd/registries-operator/registries-operator manager \
31     -v 5 \
32     --kubeconfig /home/travis/.kube/kind-config-1 \
33     &
34 make[2]: Leaving directory `/home/travis/gopath/src/github.com/kubic-project/registries-operator'
35 make[1]: Leaving directory `/home/travis/gopath/src/github.com/kubic-project/registries-operator'
36 The command "make kind-e2e-tests" exited with 0.
37
38
39
40 Done. Your build exited with 0.
```

Makefile?

LINDY EFFECT

https://en.wikipedia.org/wiki/Lindy_effect

The Lindy effect is a concept that the future life expectancy of some non-perishable things like a technology or an idea is proportional to their current age, so that every additional period of survival implies a longer remaining life expectancy.

