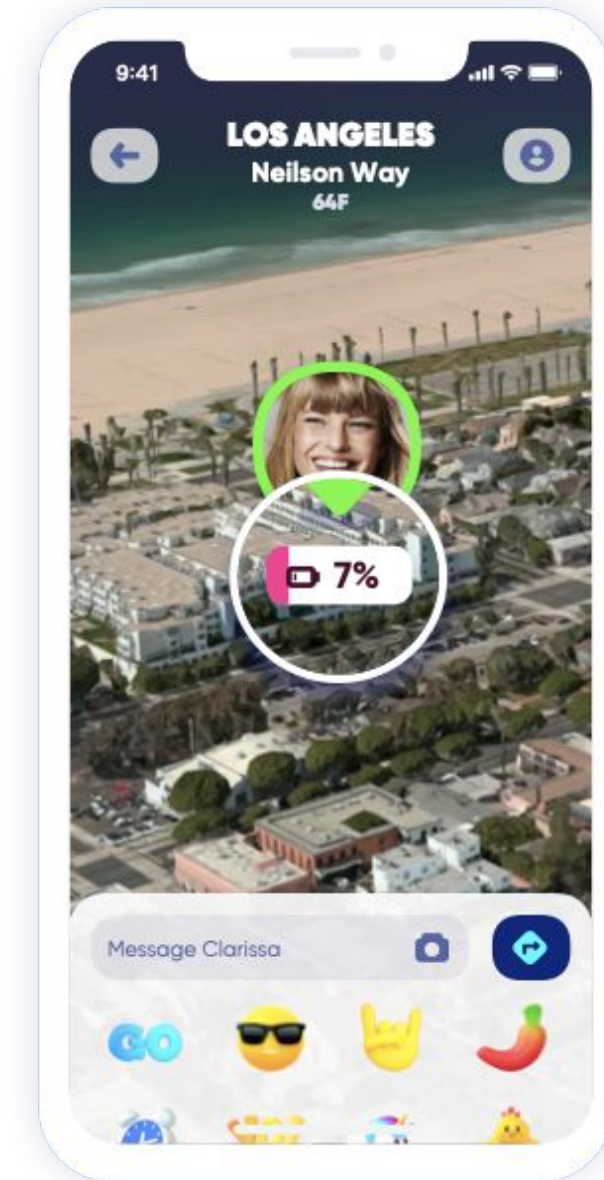


Bazel & Kubernetes: Develop like it's production

Steeve Morin - @steeve



ZENLY MAKES IT FUN
& EASY TO KNOW
WHAT YOUR FRIENDS
AND FAMILY ARE UP
TO



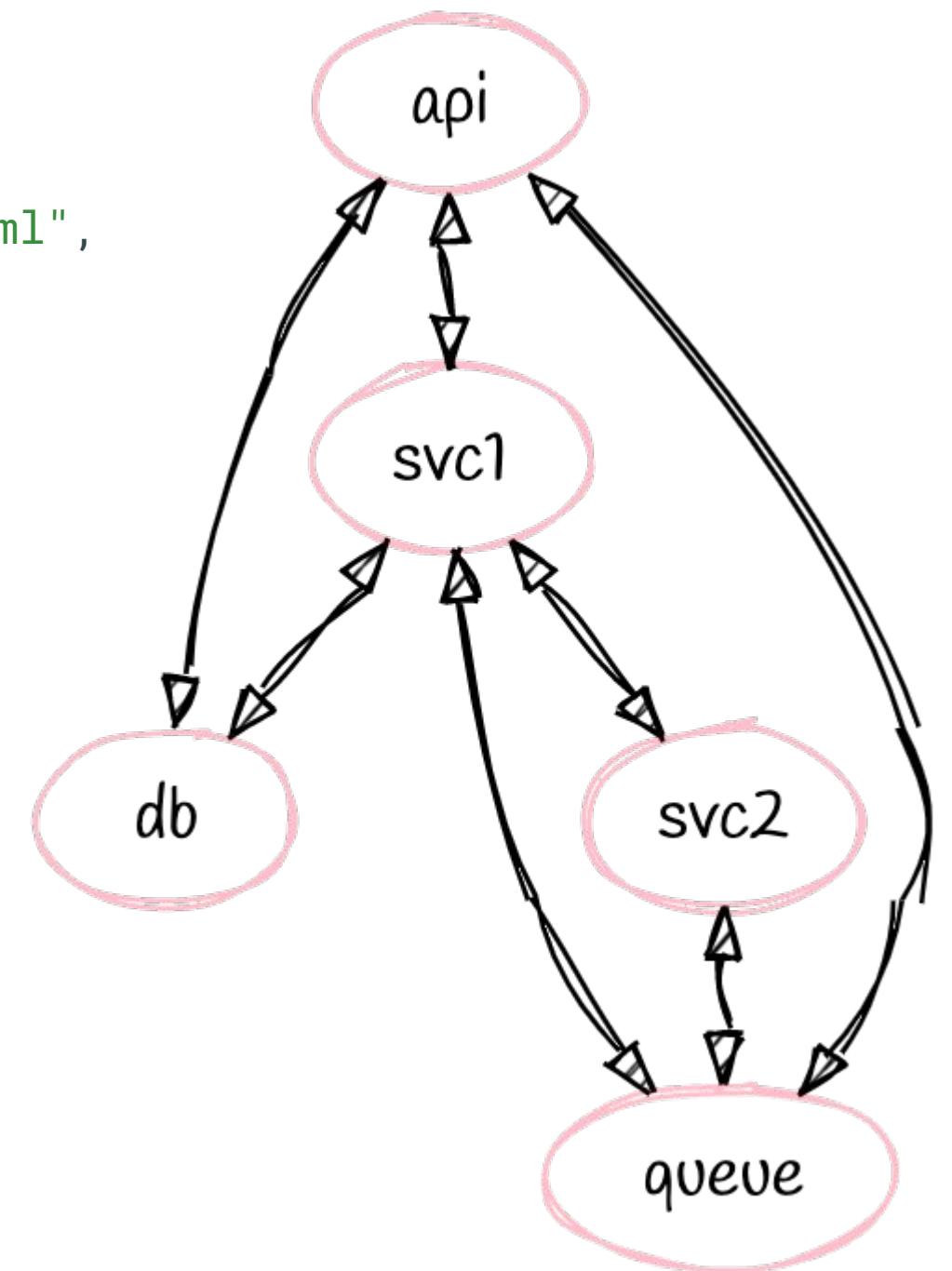
RULES_K8S

KUBERNETES DAG DSL

REGULAR BAZEL TARGETS

ONE DAG TO RULE THEM ALL

```
k8s_object(  
  name = "api.k8s",  
  template = "deployment.yaml",  
)  
  
k8s_objects(  
  name = "api",  
  objects = [  
    ":api.k8s",  
    ":db",  
    ":queue",  
    ":svc1",  
  ],  
)  
  
k8s_objects(  
  name = "svc1",  
  objects = [  
    ":svc1.k8s",  
    ":db",  
    ":queue",  
    ":svc2",  
  ],  
)
```



K3S: 5 LESS THAN K8S

LIGHTWEIGHT K8S DISTRO

RUNS IN DOCKER 🤖

`$ bazel run //:k3s`

RUNS LOCALLY

GUI VIA `derailed/k9s`

`$ bazel run //:k9s`

```
Cluster: minikube
K8s Version: v1.12.1
CPU: 25%
MEM: 72%

<CTRL-D> Delete      <0> all
<CTRL-E> Edit        <1> default
<CTRL-L> Logs       <2> graphql
<CTRL-S> SSH        <3> istio-system
<CTRL-V> View       <4> kube-public
                   <5> kube-system
```

Pods(all)[38]										
NAMESPACE	NAME	READY	STATUS	RESTARTS	CPU	MEM	IP	NODE	QOS	AGE
graphql	db-6b6b954644-4m787	1/1	Running	0	0m	24Mi	172.17.0.10	192.168.64.75	Burstable	33h
istio-system	grafana-7ffdd5fb74-jbd22	1/1	Running	0	6m(-)	41Mi	172.17.0.16	192.168.64.75	Burstable	8d
istio-system	istio-citadel-55cdfdd57c-xhztq	1/1	Running	0	0m	15Mi	172.17.0.22	192.168.64.75	Burstable	8d
istio-system	istio-cleanup-secrets-chb4c	0/1	Completed	0			172.17.0.10	192.168.64.75	BestEffort	8d
istio-system	istio-egressgateway-7798845f5d-2tqrz	1/1	Running	0	5m	26Mi	172.17.0.14	192.168.64.75	Burstable	8d
istio-system	istio-egressgateway-7798845f5d-ssfsv	1/1	Running	0	5m	25Mi	172.17.0.32	192.168.64.75	Burstable	9h
istio-system	istio-galley-76bbb946c8-4n4km	1/1	Running	0	20m(+)	15Mi	172.17.0.11	192.168.64.75	Burstable	8d
istio-system	istio-grafana-post-install-5kxgk	0/1	Completed	4			172.17.0.12	192.168.64.75	BestEffort	8d
istio-system	istio-ingressgateway-78c6d8b8d7-5wd2t	1/1	Running	0	5m	27Mi	172.17.0.13	192.168.64.75	Burstable	8d
istio-system	istio-ingressgateway-78c6d8b8d7-cw25p	1/1	Running	0	5m	24Mi	172.17.0.27	192.168.64.75	Burstable	9h
istio-system	istio-pilot-76fd9fd85f-6mxl7	2/2	Running	0	30m	47Mi	172.17.0.20	192.168.64.75	Burstable	8d
istio-system	istio-policy-7b6cc95d7b-hq9hd	2/2	Running	3	12m(-)	47Mi	172.17.0.18	192.168.64.75	Burstable	8d
istio-system	istio-policy-7b6cc95d7b-s894g	2/2	Running	0	10m	45Mi	172.17.0.24	192.168.64.75	Burstable	10h
istio-system	istio-policy-7b6cc95d7b-v5qgq	2/2	Running	0	14m(+)	49Mi	172.17.0.26	192.168.64.75	Burstable	9h
istio-system	istio-security-post-install-gr6lf	0/1	Completed	4			172.17.0.11	192.168.64.75	BestEffort	8d
istio-system	istio-sidecar-injector-9c6698858-vnwlb	1/1	Running	0	22m(+)	10Mi	172.17.0.12	192.168.64.75	Burstable	8d
istio-system	istio-telemetry-bfc9ff784-47n7g	2/2	Running	0	10m(-)	167Mi	172.17.0.28	192.168.64.75	Burstable	9h
istio-system	istio-telemetry-bfc9ff784-ddwzb	2/2	Running	2	15m(+)	122Mi	172.17.0.19	192.168.64.75	Burstable	8d
istio-system	istio-telemetry-bfc9ff784-kdr9w	2/2	Running	0	19m	124Mi	172.17.0.23	192.168.64.75	Burstable	10h
istio-system	istio-telemetry-bfc9ff784-s66w2	2/2	Running	0	18m(+)	123Mi	172.17.0.29	192.168.64.75	Burstable	4h54m
istio-system	istio-telemetry-bfc9ff784-wpr4r	2/2	Running	1	15m(-)	123Mi	172.17.0.25	192.168.64.75	Burstable	10h
istio-system	istio-tracing-6445d6dbbf-6rlk7	1/1	Running	0	1m	7Mi	172.17.0.17	192.168.64.75	Burstable	8d
istio-system	prometheus-65d6f6b6c-j8dzt	1/1	Running	1	59m(-)	355Mi	172.17.0.21	192.168.64.75	Burstable	8d
istio-system	servicegraph-5c6f47859-djxcj	1/1	Running	2	0m	6Mi	172.17.0.15	192.168.64.75	Burstable	8d
kube-system	coredns-576cbf47c7-nkwcw	1/1	Running	0	6m	12Mi(+)	172.17.0.2	192.168.64.75	Burstable	21d
kube-system	coredns-576cbf47c7-w7r4w	1/1	Running	0	7m	12Mi	172.17.0.3	192.168.64.75	Burstable	21d
kube-system	etcd-minikube	1/1	Running	0	47m(+)	96Mi	192.168.64.75	192.168.64.75	BestEffort	21d
kube-system	heapster-gk262	1/1	Running	0	1m	41Mi	172.17.0.5	192.168.64.75	BestEffort	21d
kube-system	influxdb-grafana-zlkb9	2/2	Running	0	8m(+)	194Mi	172.17.0.6	192.168.64.75	BestEffort	21d
kube-system	kube-addon-manager-minikube	1/1	Running	0	17m(-)	6Mi	192.168.64.75	192.168.64.75	Burstable	21d
kube-system	kube-apiserver-minikube	1/1	Running	1	137m(+)	719Mi	192.168.64.75	192.168.64.75	Burstable	21d
kube-system	kube-controller-manager-minikube	1/1	Running	4	99m(+)	70Mi	192.168.64.75	192.168.64.75	Burstable	21d
kube-system	kube-proxy-bzxz9	1/1	Running	0	8m	15Mi	192.168.64.75	192.168.64.75	BestEffort	21d
kube-system	kube-scheduler-minikube	1/1	Running	4	42m	13Mi	192.168.64.75	192.168.64.75	Burstable	21d
kube-system	kubernetes-dashboard-5bff5f8fb8-ckljc	1/1	Running	0	0m(-)	12Mi	172.17.0.4	192.168.64.75	BestEffort	21d
kube-system	metrics-server-6486d4db88-vzbp8	1/1	Running	0	4m(+)	19Mi	172.17.0.7	192.168.64.75	BestEffort	21d
kube-system	storage-provisioner	1/1	Running	0	0m	16Mi	192.168.64.75	192.168.64.75	BestEffort	21d
kube-system	tiller-deploy-6fb6d4777d-xw8h2	1/1	Running	1	0m	8Mi	172.17.0.8	192.168.64.75	BestEffort	18d



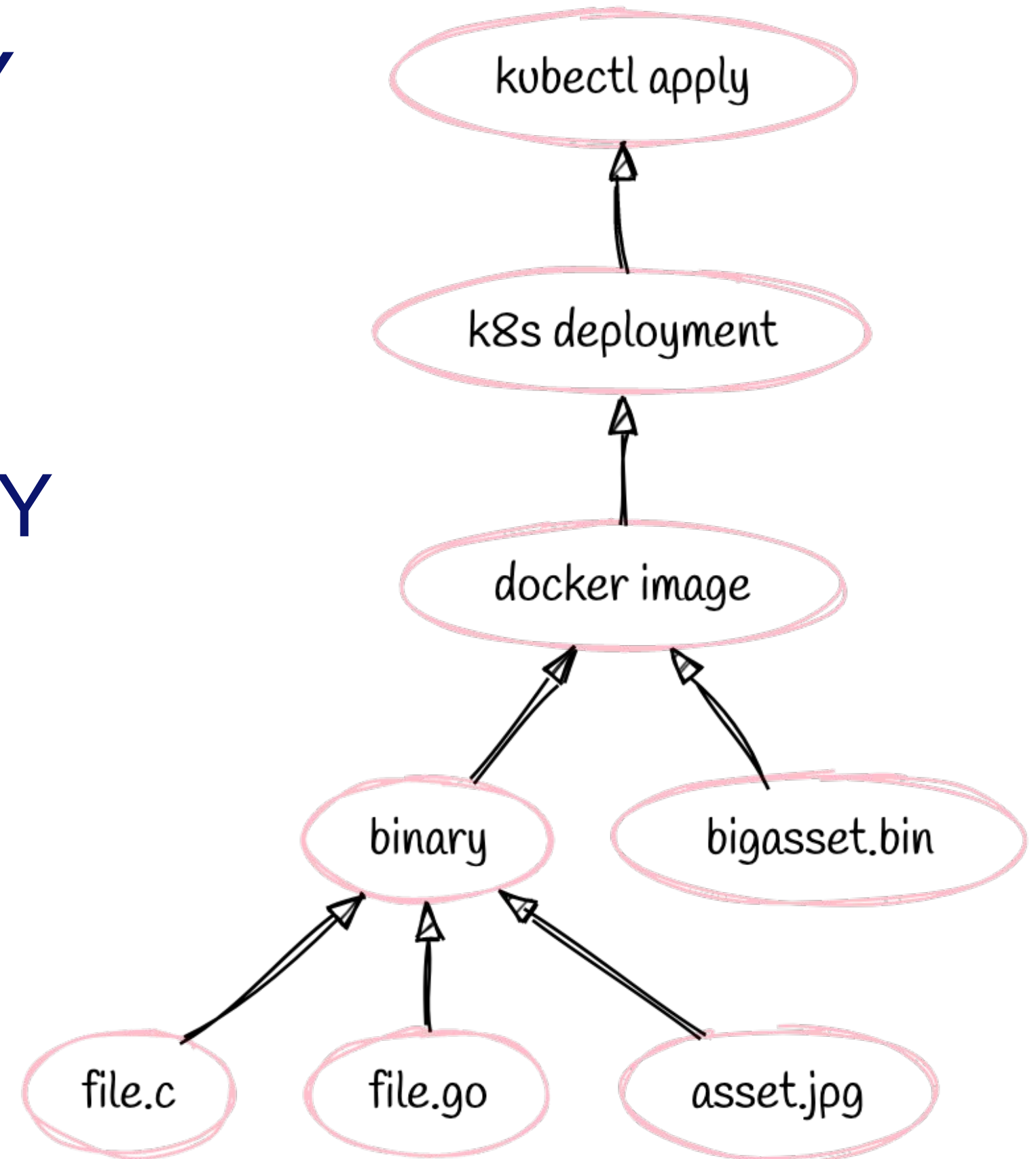
SOURCE > BUILD > DEPLOY

```
$ bazel run //:api.apply
```

ONE COMMAND BUILD + DEPLOY

ALWAYS CORRECT

SERVICES INIT WITH CODE
DB SCHEMA



TESTING

\$ bazel test //...

TEST BINARY AS K8S JOB

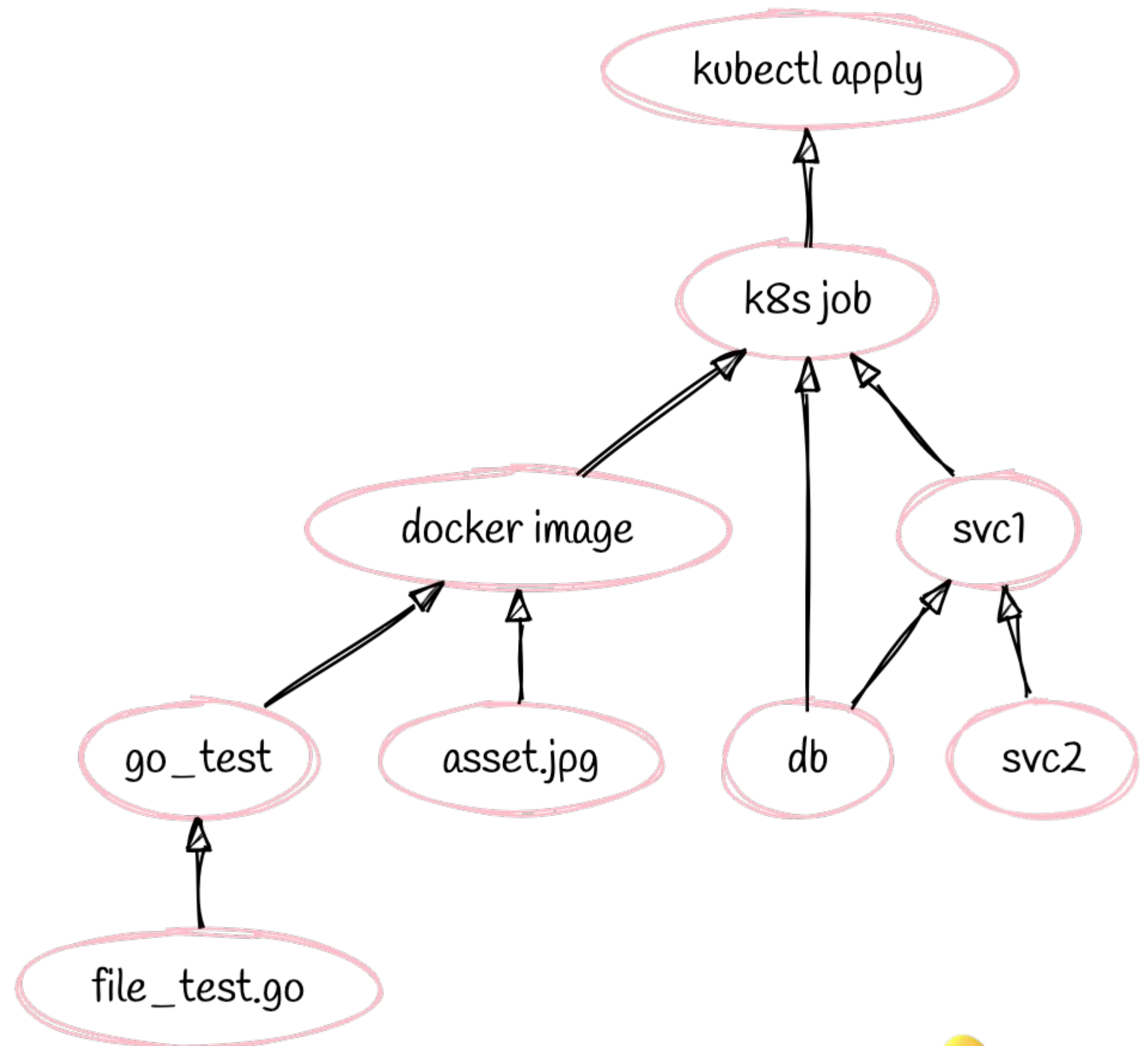
SERVICE DAG AWARE

SUCCESS / FAILURE 😊

LOGS 😊

TEST ARGUMENTS 😞

FLAKINESS DETECTION 😞

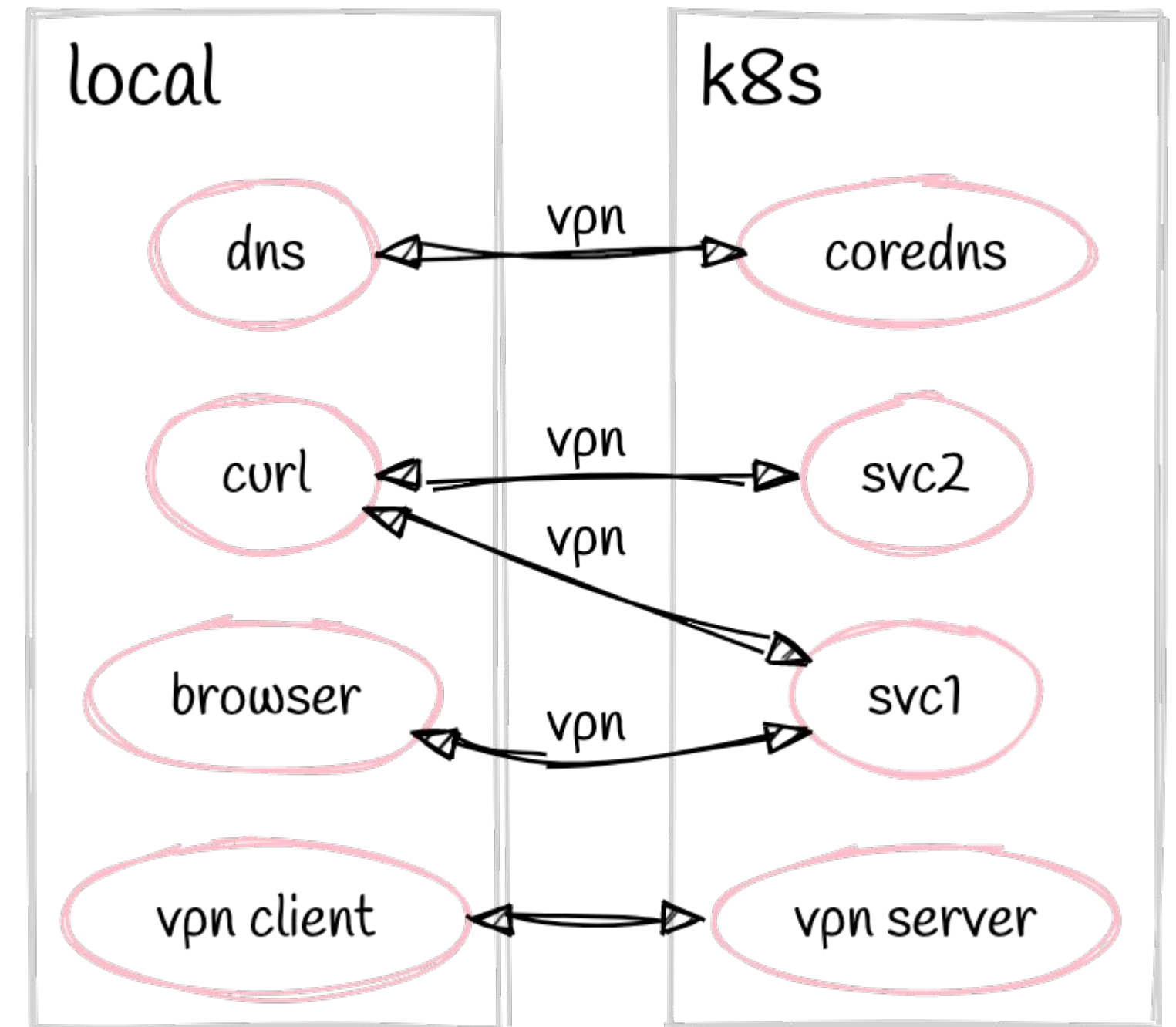


VPN & REMOTE CLUSTER

SAME WORKFLOW

DNS FORWARDING

OPENVPN + QR CODE



THANK YOU

Steeve Morin (@steeve)

