



KUBERMATIC

DEVFEST İSTANBUL 2022

CAPTAIN'S LOG: DAY-2 OPERATIONS FOR MANAGED KUBERNETES CLUSTERS

```
    former coreinformers.PodIn-
    cord.NewBroadcaster()
    Logging(klog.Infof)
    itRecordingToSink(&v1core.Ev-
1 && kubeClient.CoreV1().REST
gisterMetricAndTrackRateLimit
```

```
oller{
    kubeClient,
    : controller.RealPodControl{
        client: kubeClient,
        rder: eventBroadcaster.NewRecord
    }
    ations: controller.NewControllerExp
    workqueue.NewNamedRateLimiter(
        eventBroadcaster.NewRecord
    )
}
```

```
    Informer.Informer().AddEventHandler(cache
        AddFunc: func(obj interface{}) {
            jm.enqueueController(obj, true)
        },
        UpdateFunc: jm.updateJob,
        DeleteFunc: func(obj interface{}) {
            jm.enqueueController(obj, true)
        },
    },
```

CAPTAIN'S LOG: STARDATE 2





WHO AM I?

- Consultant / SRE / Trainer @Kubernatic
- Working remotely from Istanbul
- Interested in Linux, Kubernetes, and cloud technologies
- CKA | CKAD | CKS | RHCE



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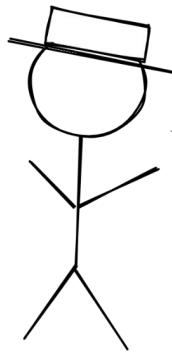
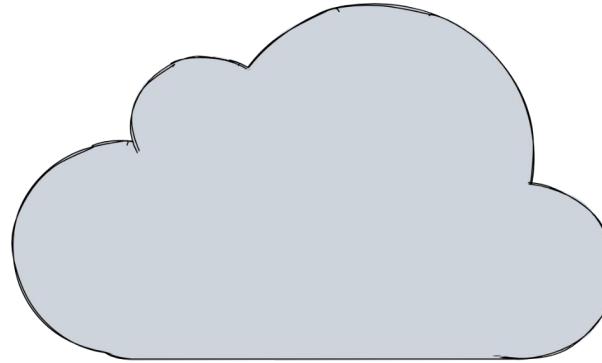
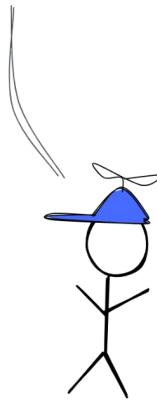
koksay

RECAP: WHAT THOSE DAYS STAND FOR ON K8S?

- DAY 0: Design
Which K8s platform, on which provider, security,
GitOps, CI/CD, network setup, ...
- DAY 1: Deploy
First day the product is running on Production
- DAY 2: Operate
Maintain infra, onboard new users, monitor applications, ...
Keep your systems healthy over time!

CLOUD & LINUX

Daddy, what are
clouds made of?



Linux Servers,
mostly

DO I NEED LINUX SYSADMIN KNOWLEDGE FOR K8S?

- Dockerfile demo

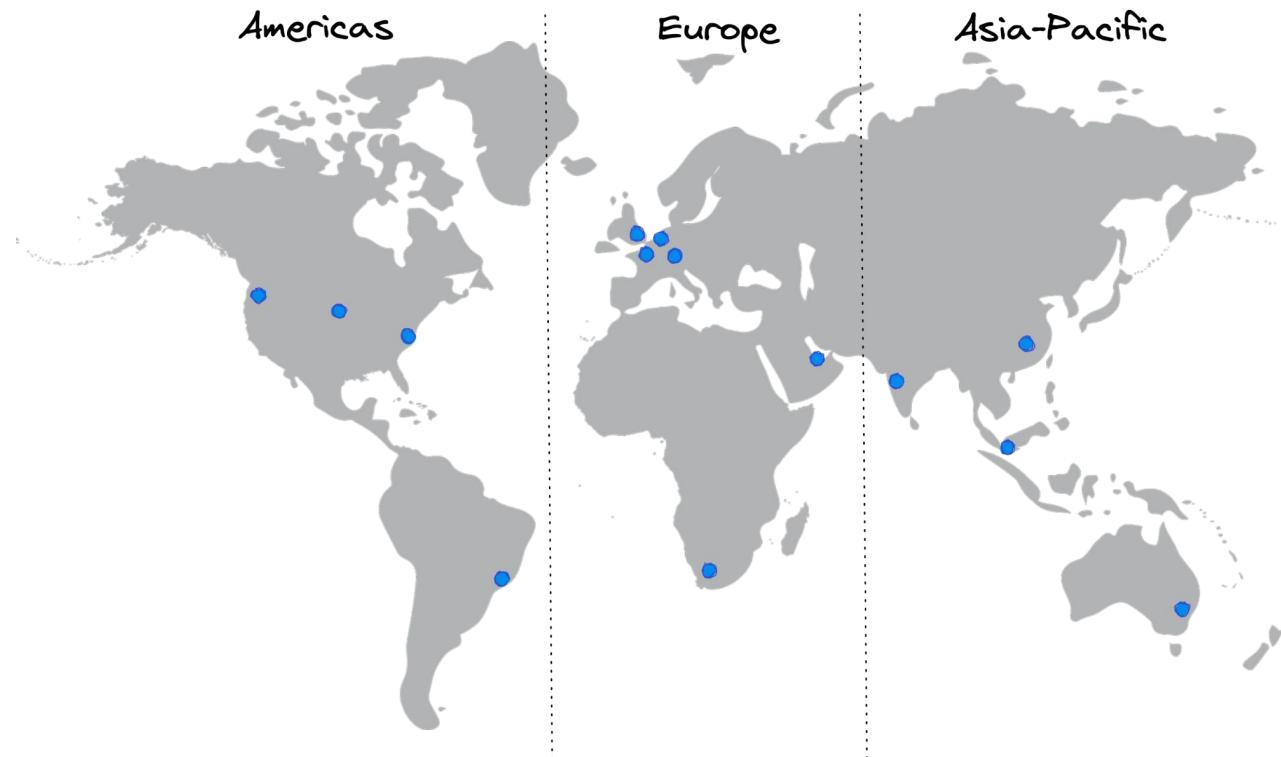
```
git clone https://github.com/lukechilds/lukechilds.com.git  
cd lukechilds.com  
git pull  
git push
```

```
free -l /var/www/html  
tar -zcvf /var/www/html/backup.tgz /var/www/html  
rm -rf /var/www/html/
```

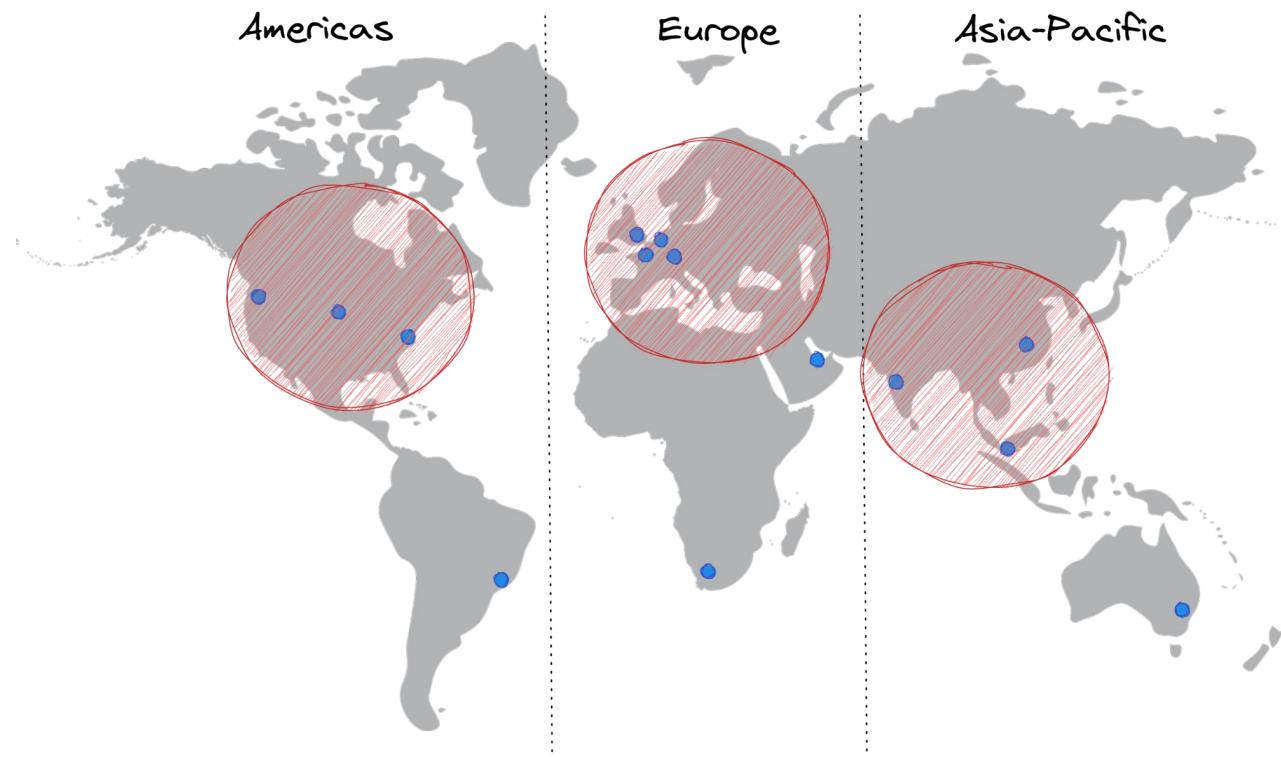
THAT WAS ME, FOR 10+ YEARS



CLOUD COMPUTING AND REGIONS



SRE TEAM (OR OPERATIONS?)



PROS & CONS OF MULTI-REGION SRE TEAM

- "Follow the sun"
- A diverse team with different perspectives
- Sync up - New projects, changes, technical knowledge
- Socializing

MAINTENANCE WINDOWS

- Having proper notification channel(s) for upcoming maintenance activities is crucial
- Users should select their maintenance windows and also manually schedule new updates/upgrades when they need
- Selecting the maintenance window on behalf of the customer is risky (except for the emergency activities)
- Weekend night time would suit best for most customers, but this may not suit everyone (e.g. for a betting company)

RESPONSIBILITIES FOR A MANAGED K8S SERVICE

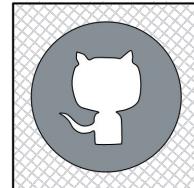
Who is supposed to solve these problems?

- "I deleted a namespace but it's in terminating state for 2 days"
- Did you check the finalizers?

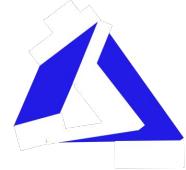
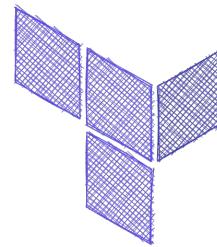
- "Hey, after you upgraded Kubernetes version at the weekend, we lost all data in our PostgreSQL instance"
- You did not use HostPath, did you?

ISSUES WITH 3RD PARTIES

- Hardcoded timeout value in terraform AWS provider caused provisioning failures.
- Quotas on the cloud provider side --> (Day 0 issue).
Quota: 5 VPC per region, effectively 4 clusters per region due to default VPC.



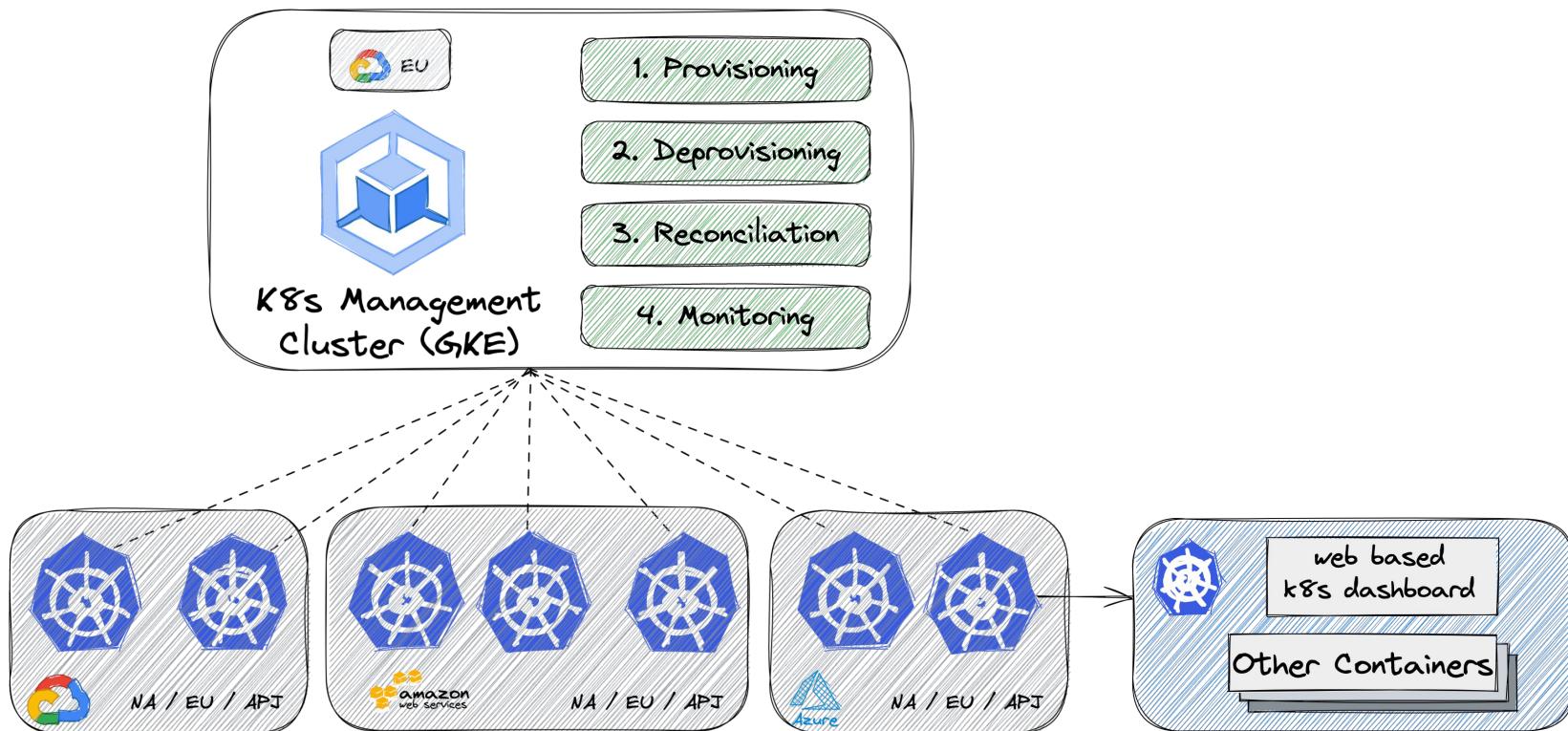
GitHub



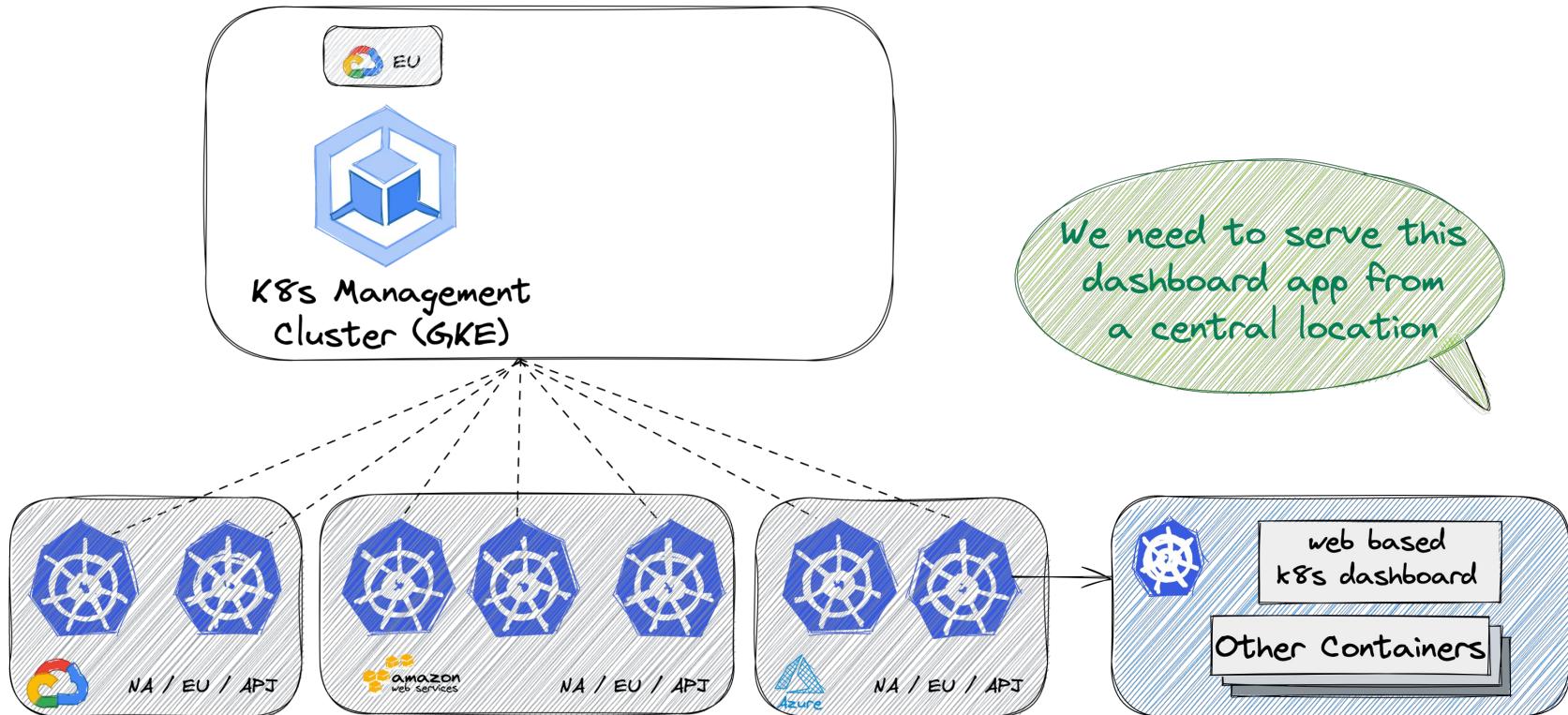
FREE TIER, TRIAL CLUSTERS, ...

- Monitoring, monitoring, monitoring, ...
You need a central monitoring system for all tiers!
- You need to balance the effort spent on the free tier with others. User experience is important but not more than production!
- Be careful with crypto miners! (monitor CPU usage)

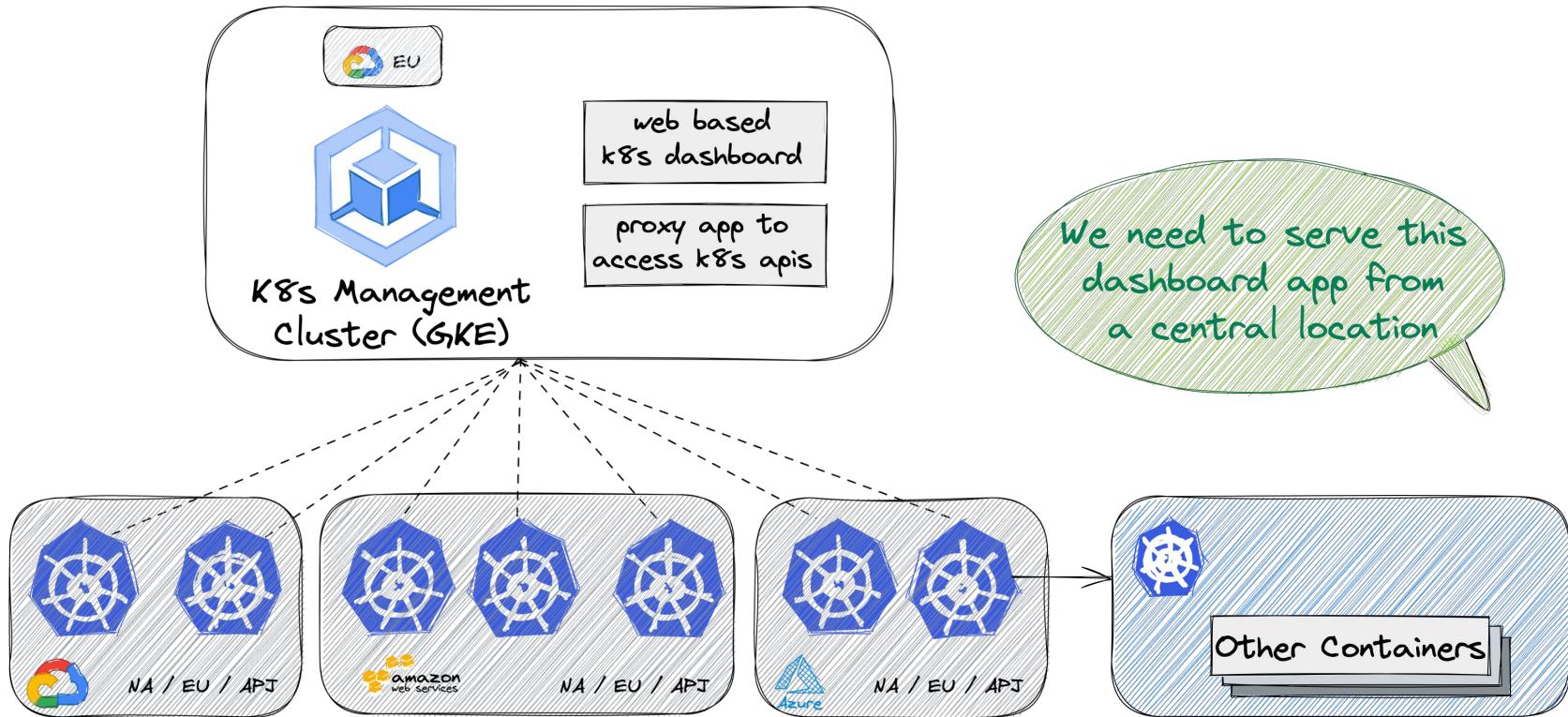
CONSIDERING OTHER CLOUD SERVICES



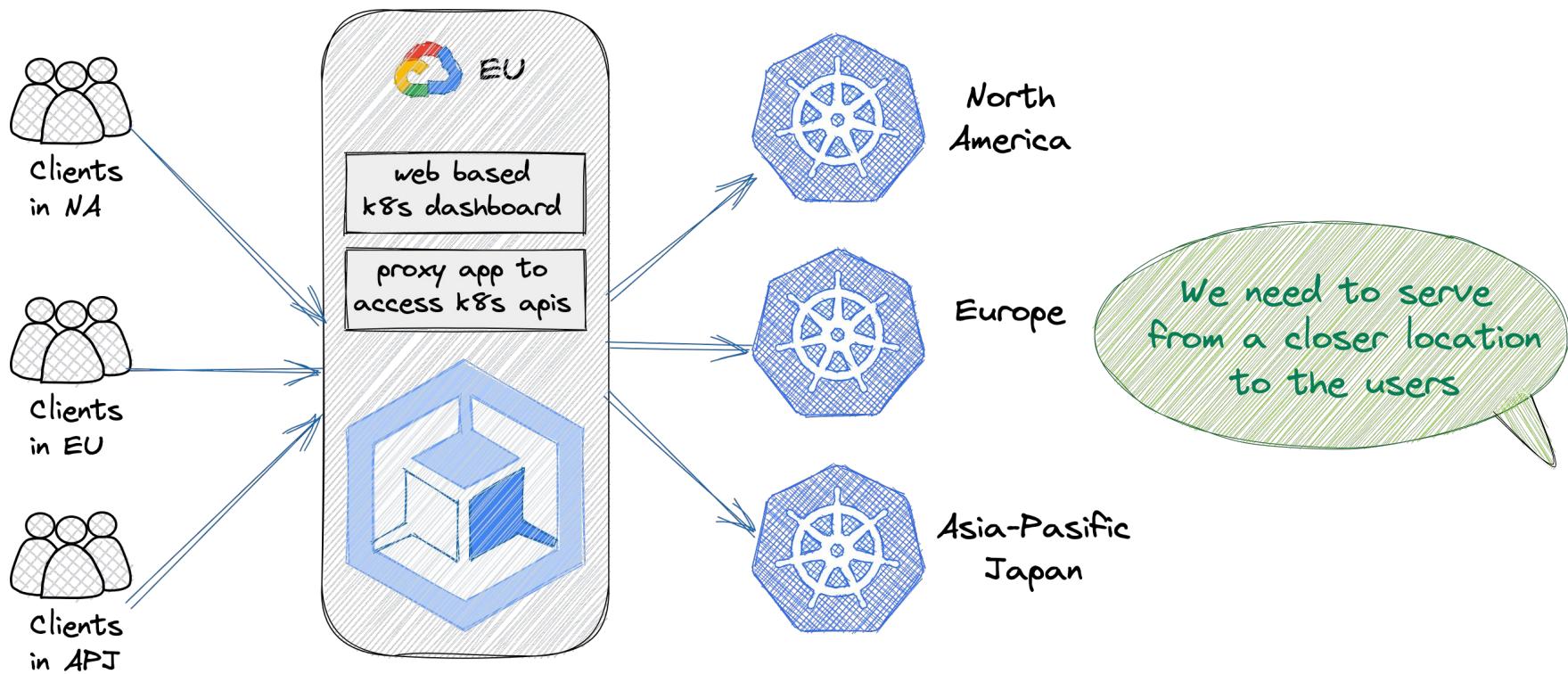
A NEW REQUIREMENT



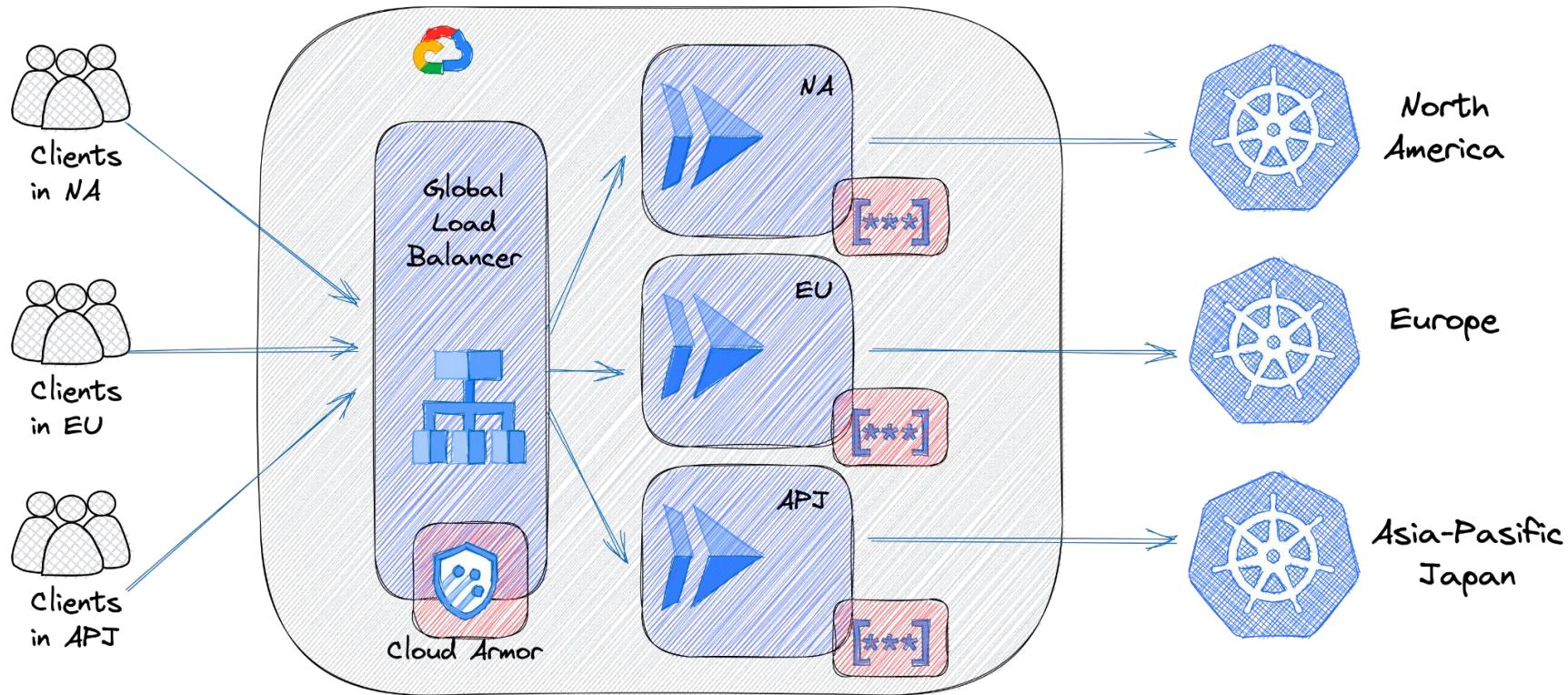
A NEW REQUIREMENT



YET ANOTHER REQUIREMENT



MOVE FROM K8S TO SERVERLESS



QUESTIONS?

THANK YOU!



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