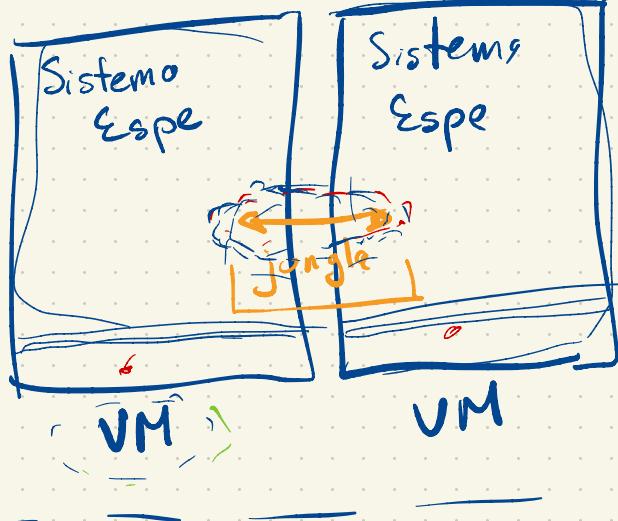


ESPE

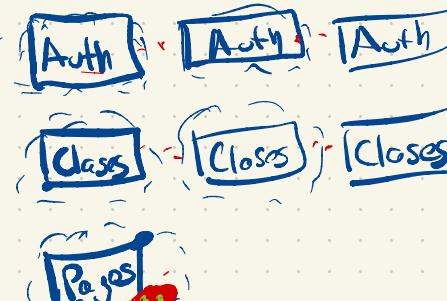
Docker

* Monolito

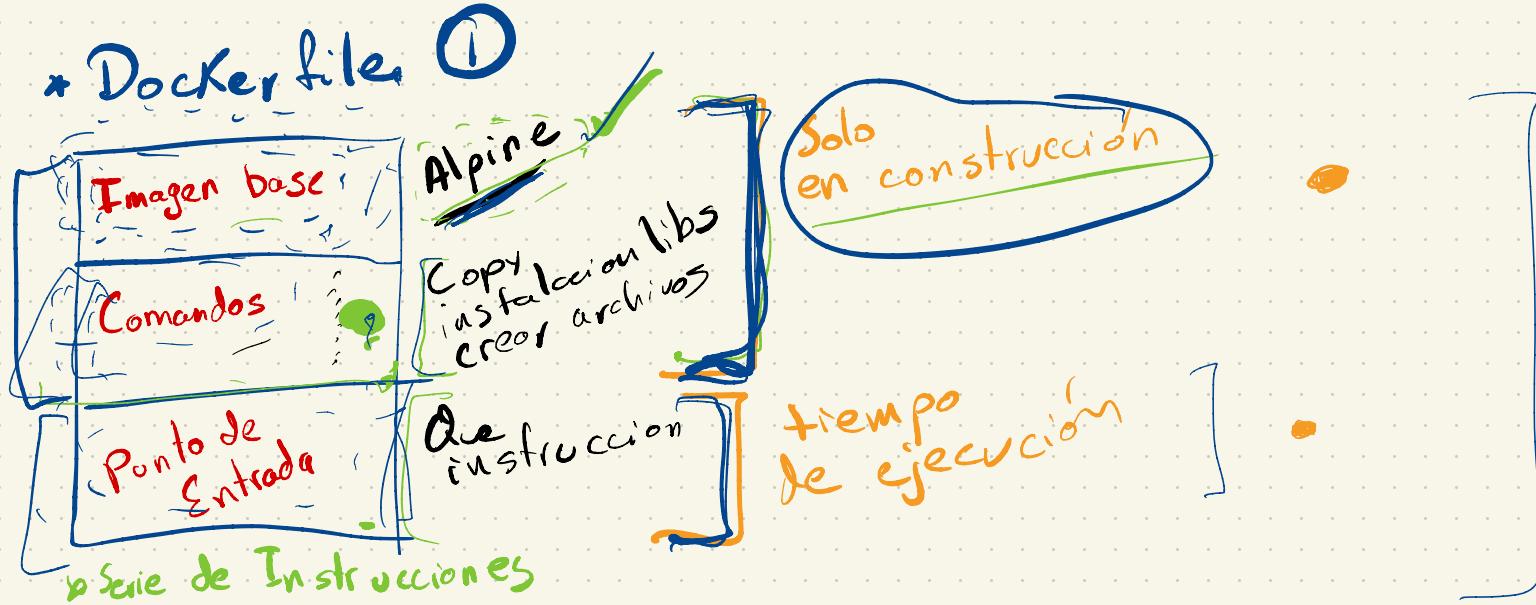


* Microservicios

Sistema Espe

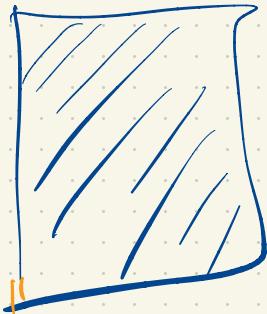


* Docker files ①



Alpine

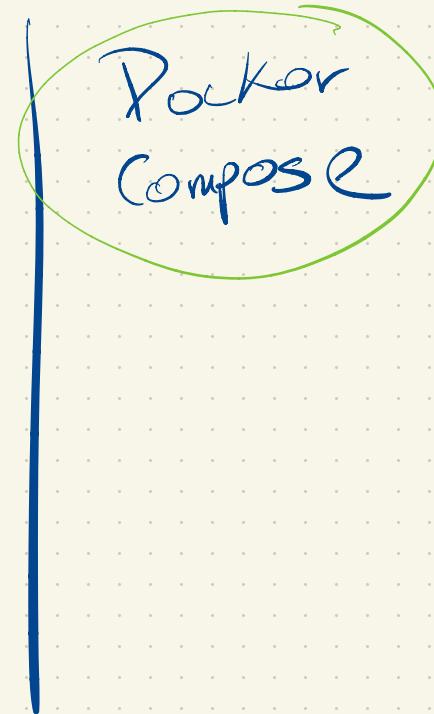
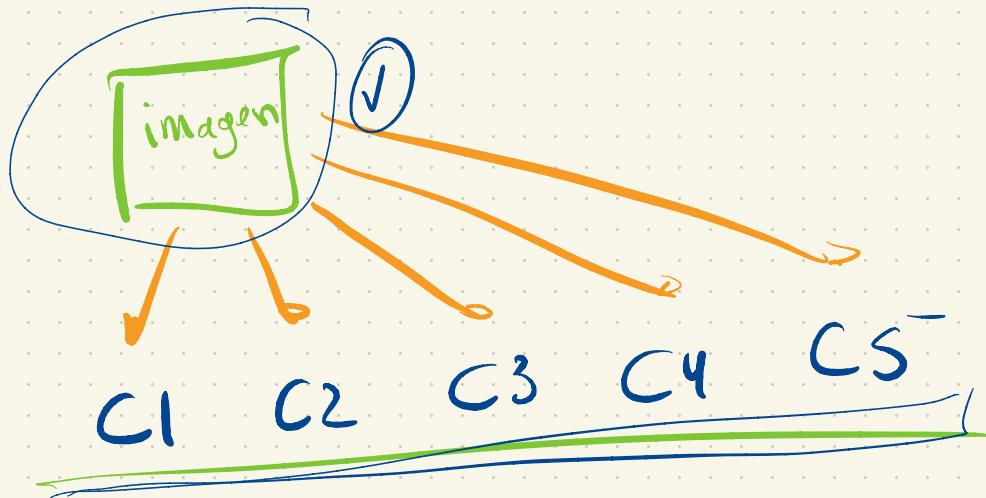
4 Imagen



Docker build

- * Inmutable
- * Corre en Punto de Entrada
- * Agnóstica al ambiente

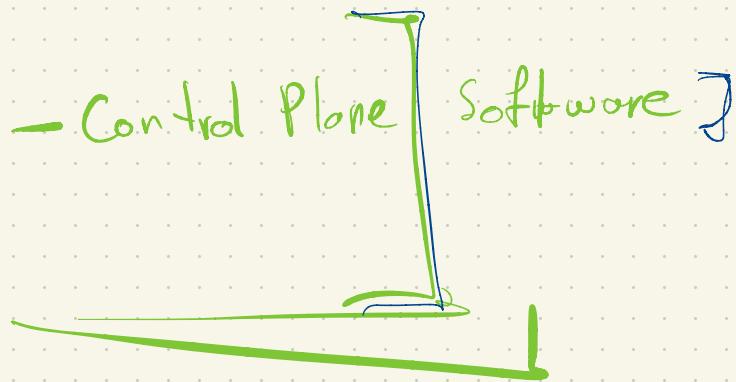
* Contenedor



Kubernetes: K8s

Maneja la orquestación de Contenedores
→ a gran escala

→ Pod
→ Nodos
→ Clústeo



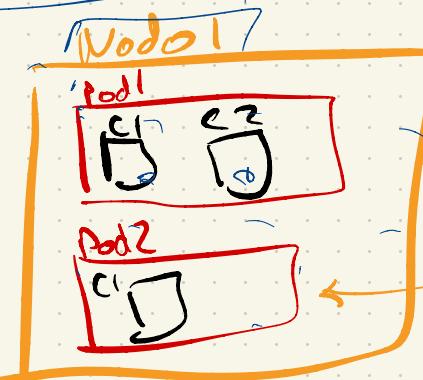
Serverless, 0.0001 / Firebase

- Pod = Conjunto de Contenedores

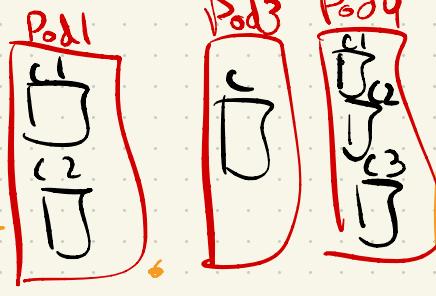
- Nodo = Maquina VM / Fierro

- Cluster = Reunion Nodos

Cluster



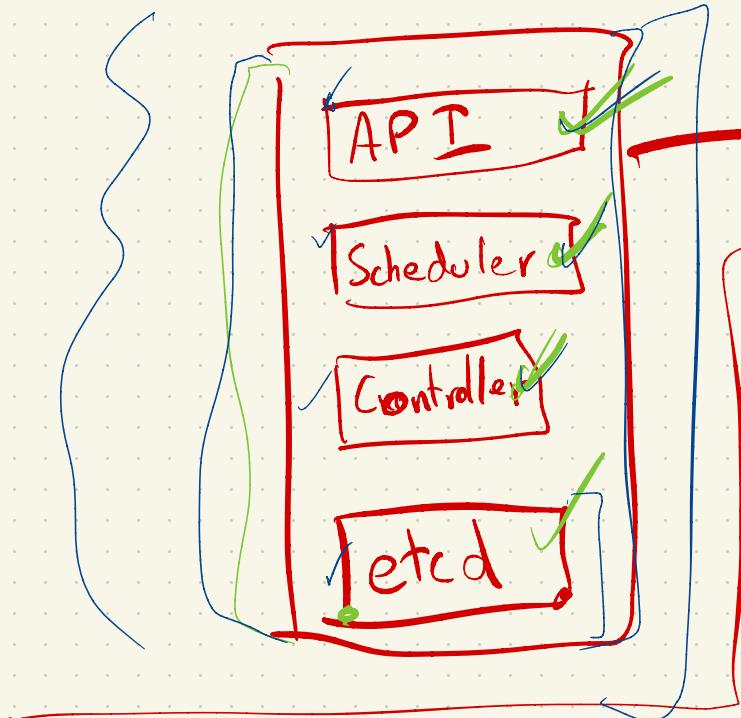
Nodo 2



Kubernetes

CNI

* Control Plane



* On Premise

* Nodos Master

* Nodos Worker

* Nube

* Nodos Worker

PaaS

Out of the box

Control Plane

- ↳ DNS ✓
- ↳ Balanced Corga ✓
- ↳ Health ✓
- ↳ HPA ↳
 - 2 pods $\geq 80\%$ CPU
 - 1st pod

Extras

Todo

Operator

BDD

MA

Escalations

Backups ✓

YAML

(text) versionable

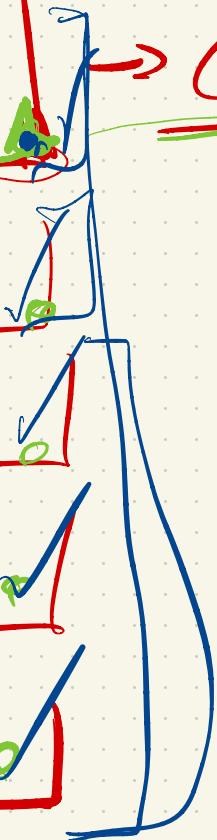
MicroK8S → Canonical ✓

k3s ✓

EKS ✓

GKE ✓

AKS ✓

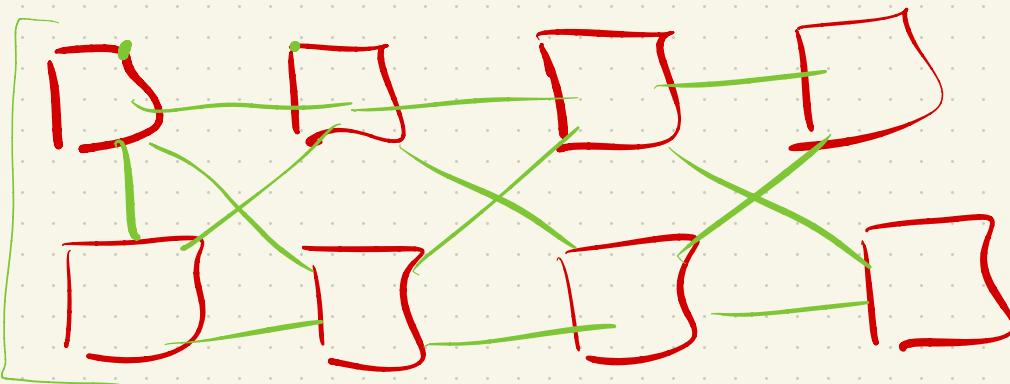


ISTIO

/ Linkerd

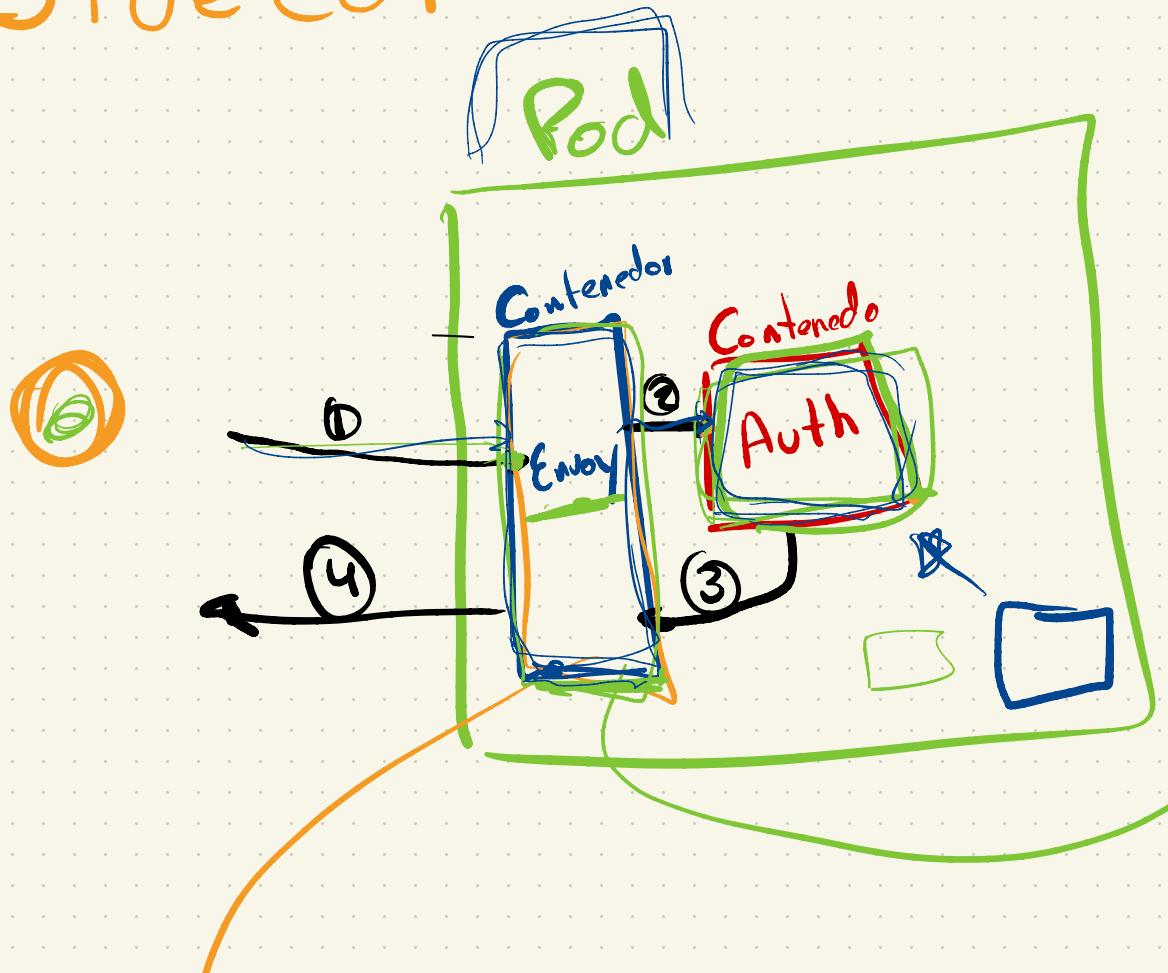
Malla de Servicios

Pod



Conceptos

Sidecar



Linkerd
glue

Métricos → tiempos Respuesta
% fallos

Logs → Quién o Como se conecta

Políticas reinicio

Políticas Seguridad

Políticas encripción

Node

Front Door

CDN

TWN

FW

API GW

APIM

K8S

On-premise

CDN

WAF

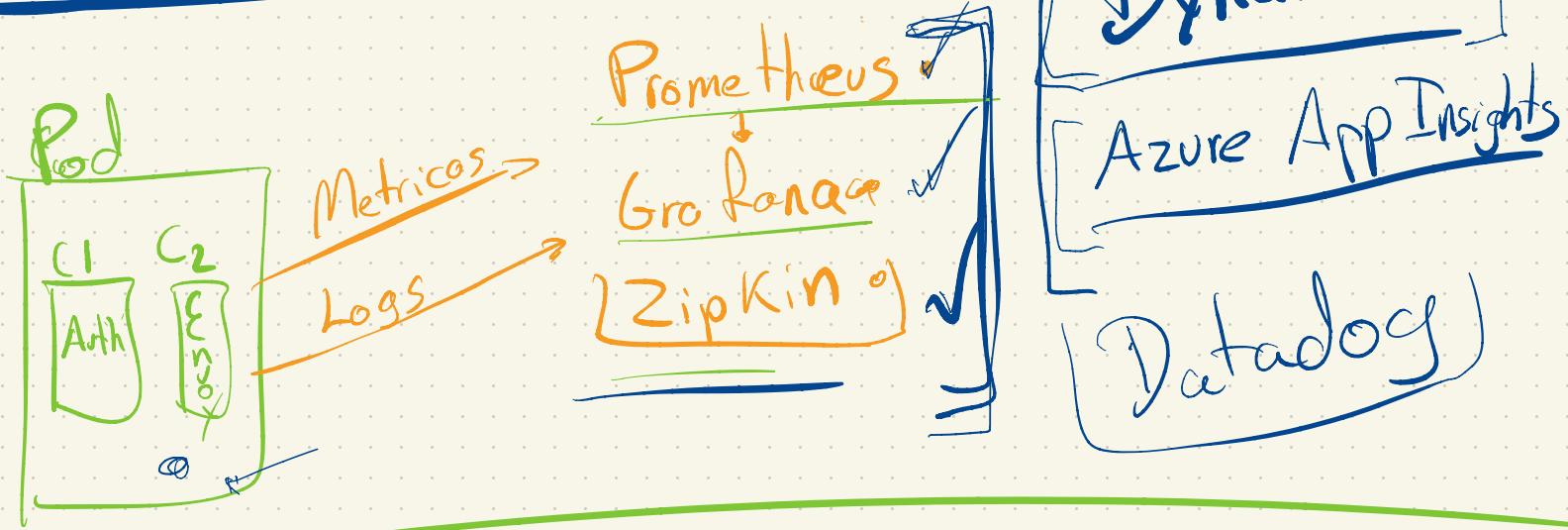
Proxy Reverse

FW

FW

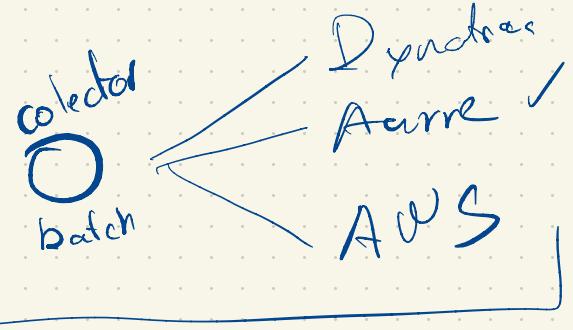
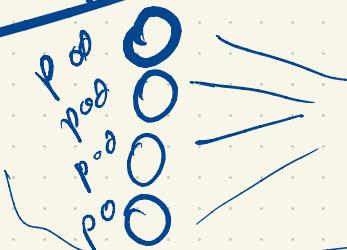
K8S

Observabilidad

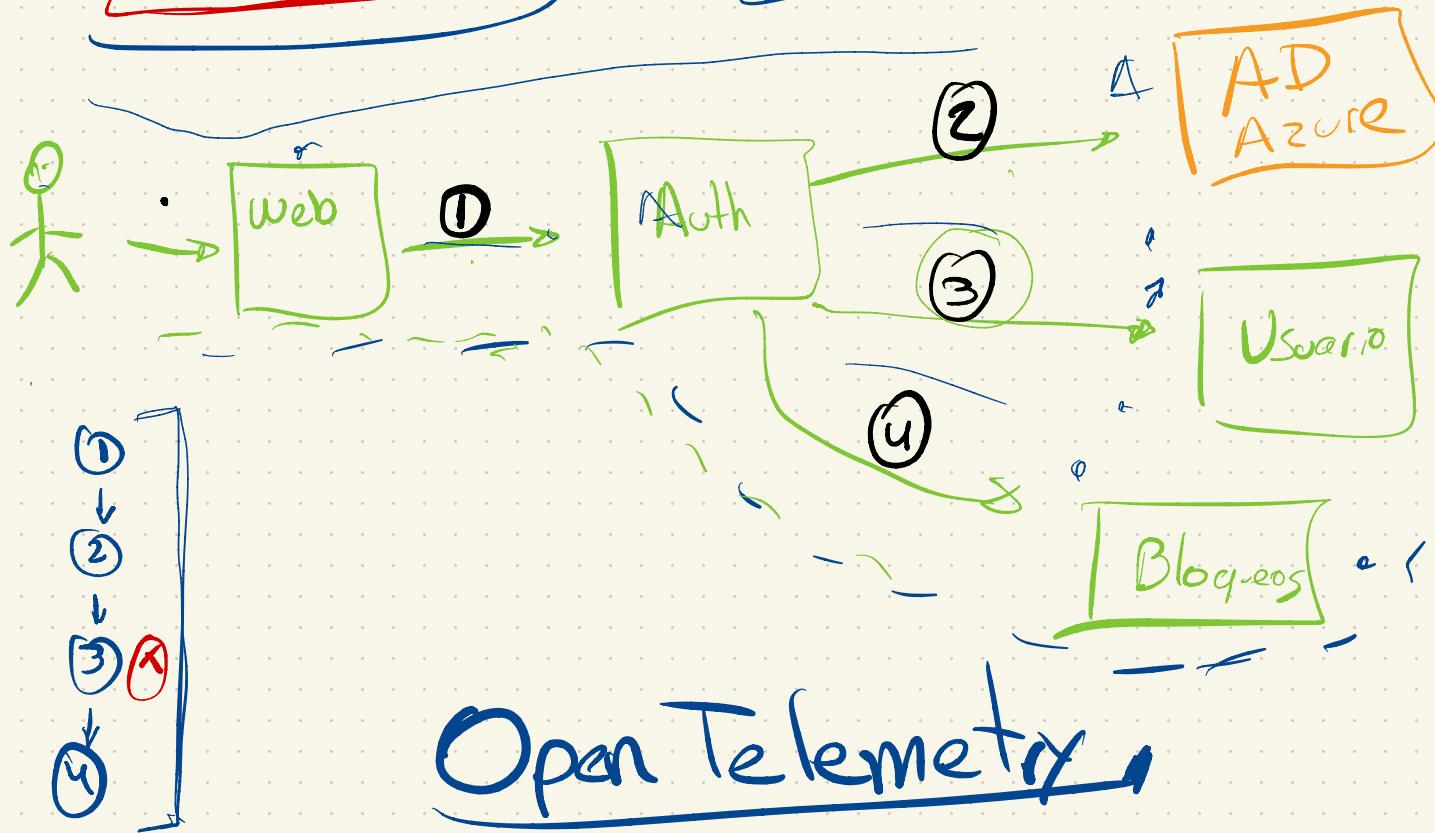


Open telemetry

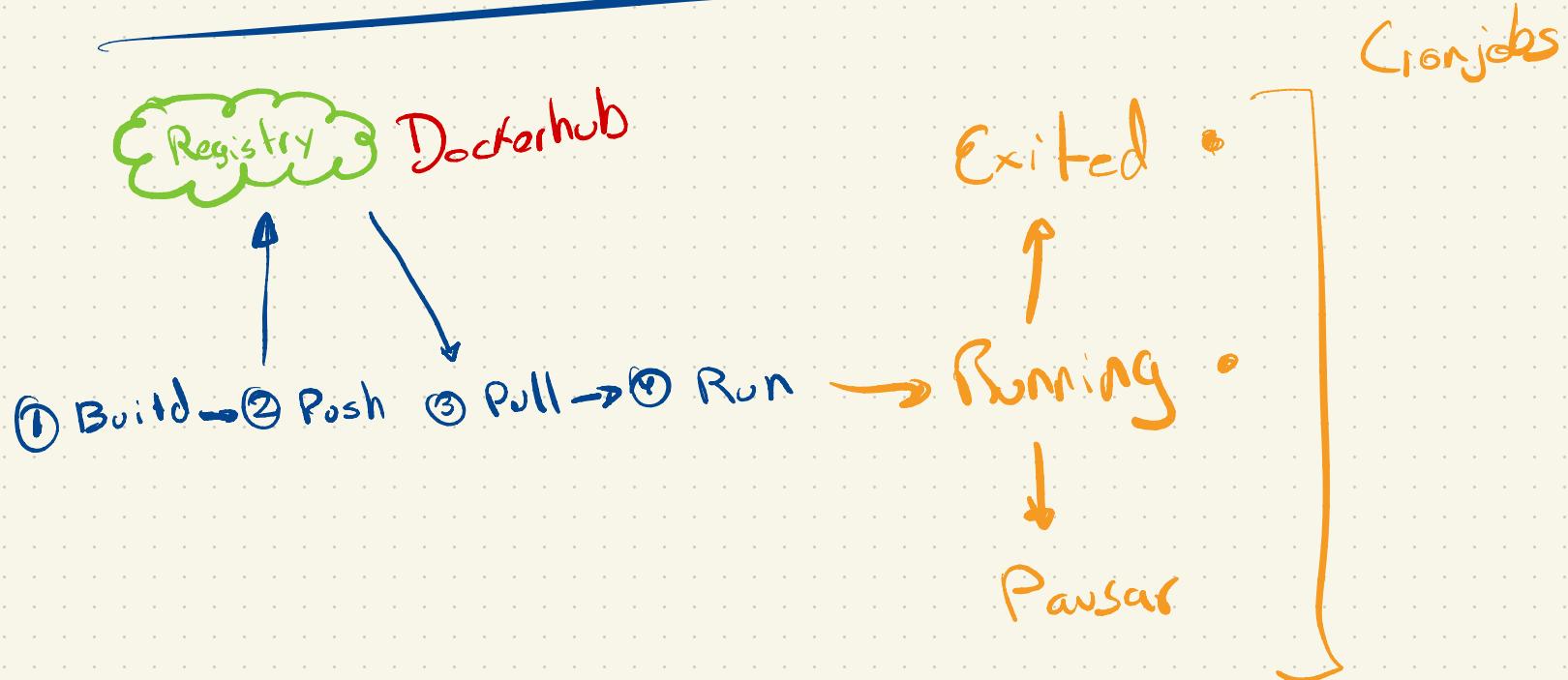
Métricas
Logs
Traces



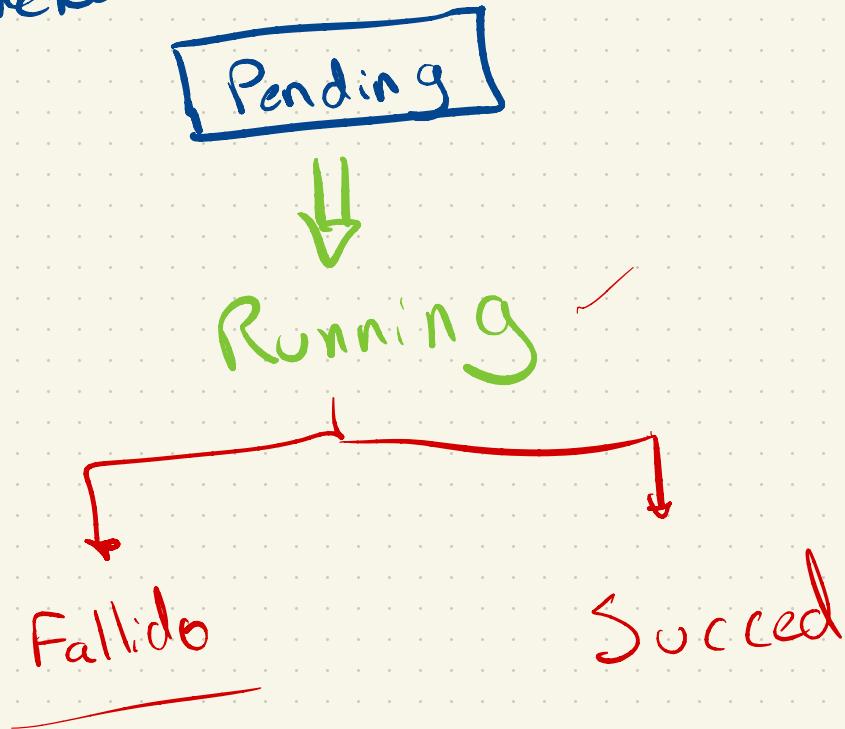
Trazos - Spans



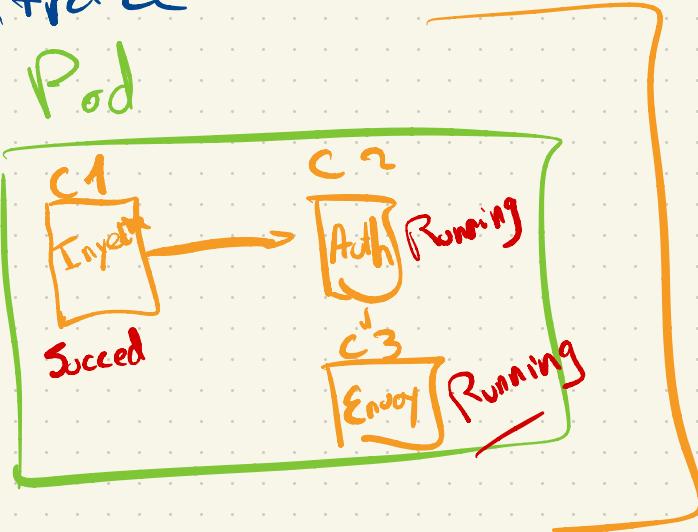
Ciclo Vida Contenedor



C vida Kubernetes



Ej: Dynatrace
Pod



Kuber notes

→ Startup Probe

get Request /salud
5 veces
4 veces → 200
cada 10seg

Crea un nuevo Pod

→ Liveness Probe

get Request /salud

2 request

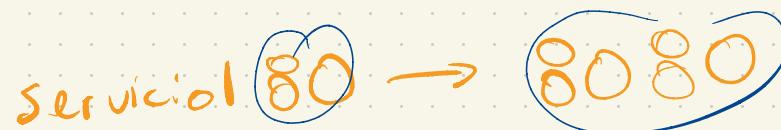
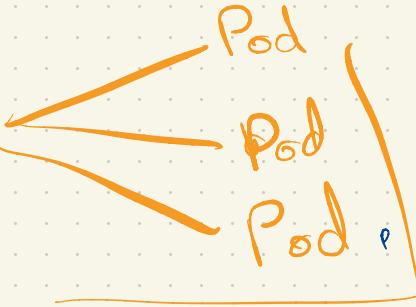
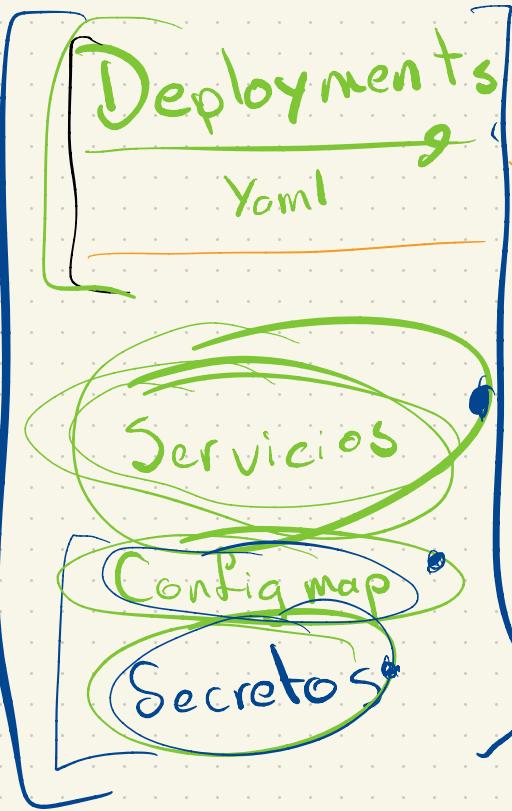
coda 5 segundos

200

Crea Pod Nuevo

Objetos de Kubernetes

YAML



Clave Valor → Variables Entorno

Clave Valor → Variables Entorno

Uso Recursos en K8S

VM

2CPUS

4GB RAM

K8S

1 Pod

0.1 CPU

0.25 GB RAM

2 CPU

4 GB Ram

Request

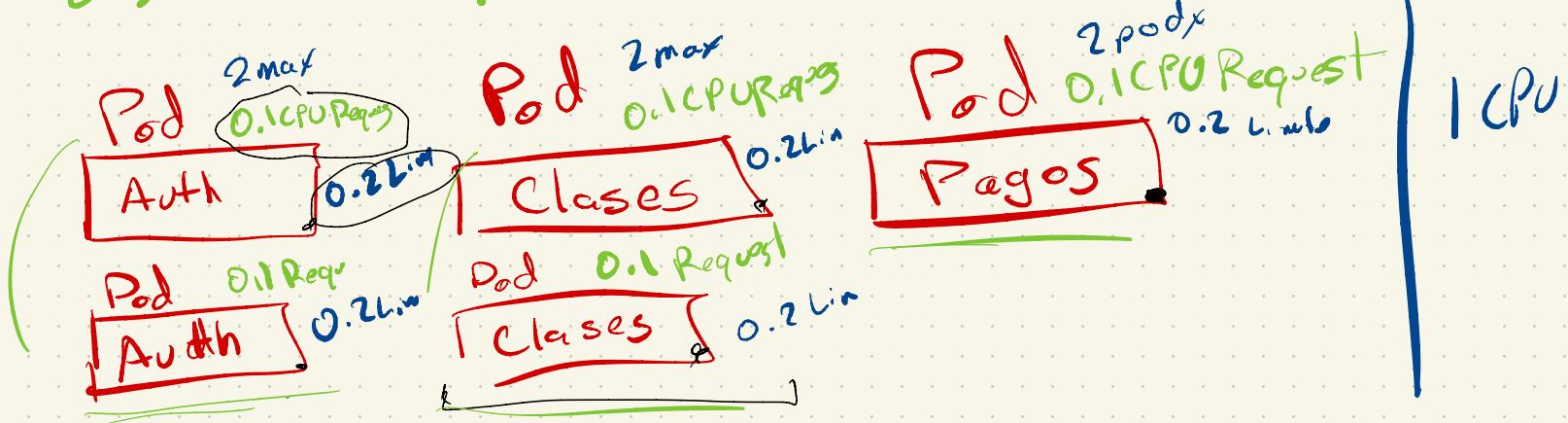
→ Cuanto CPU o Ram
le pido a K8s que
me asegure siempre

Limit

→ Cuanto CPU o Ram
le permito al pod que
consume extra



Sistema ESPE



Request total de 0.5 cpus

Límite total de 1 cpu



Deploy met →

↳ min Pods: 2 pods

max Pods: 10 pods

↳ $30 \text{ sec} > 80\% \text{ CPU}$

↳ 2 pod
3 —

Cluster - Autoscales

Kedai