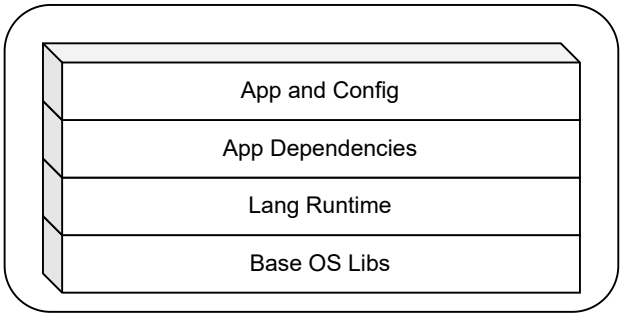
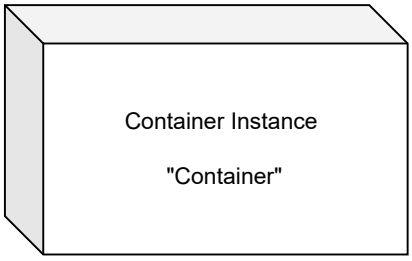
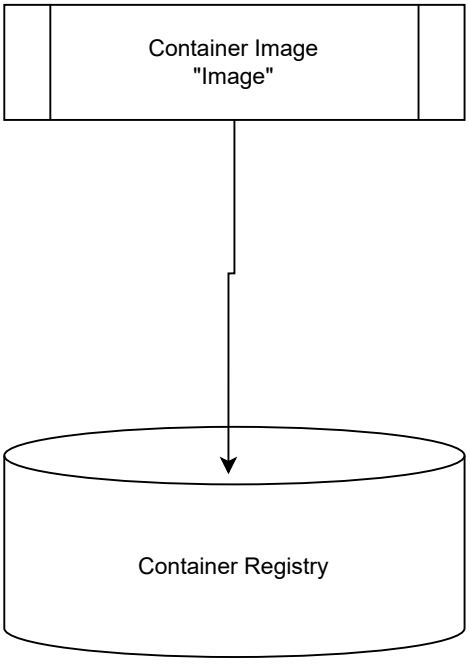
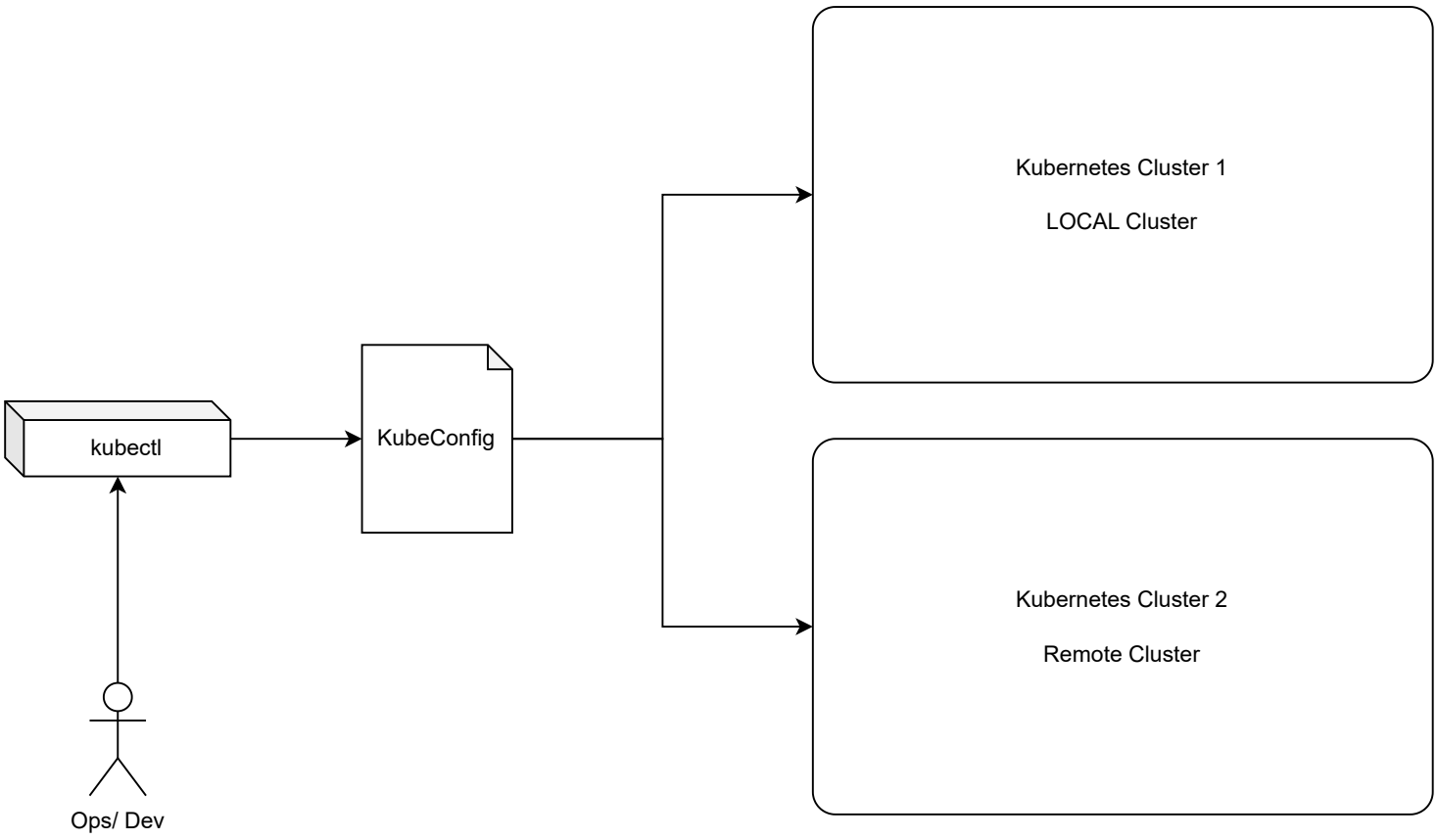
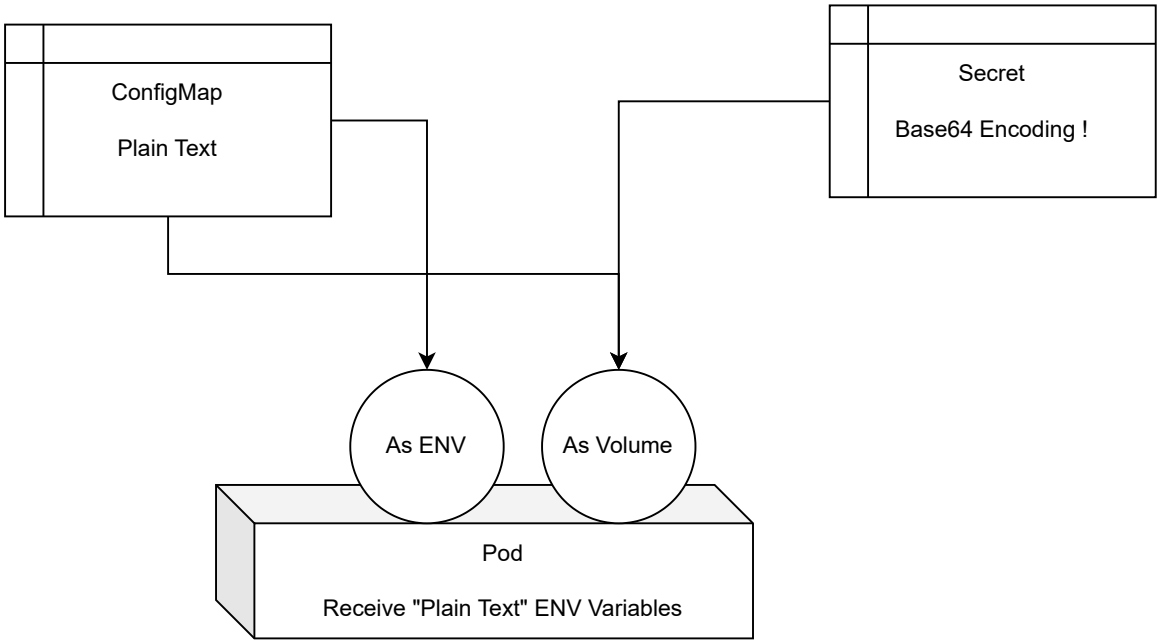
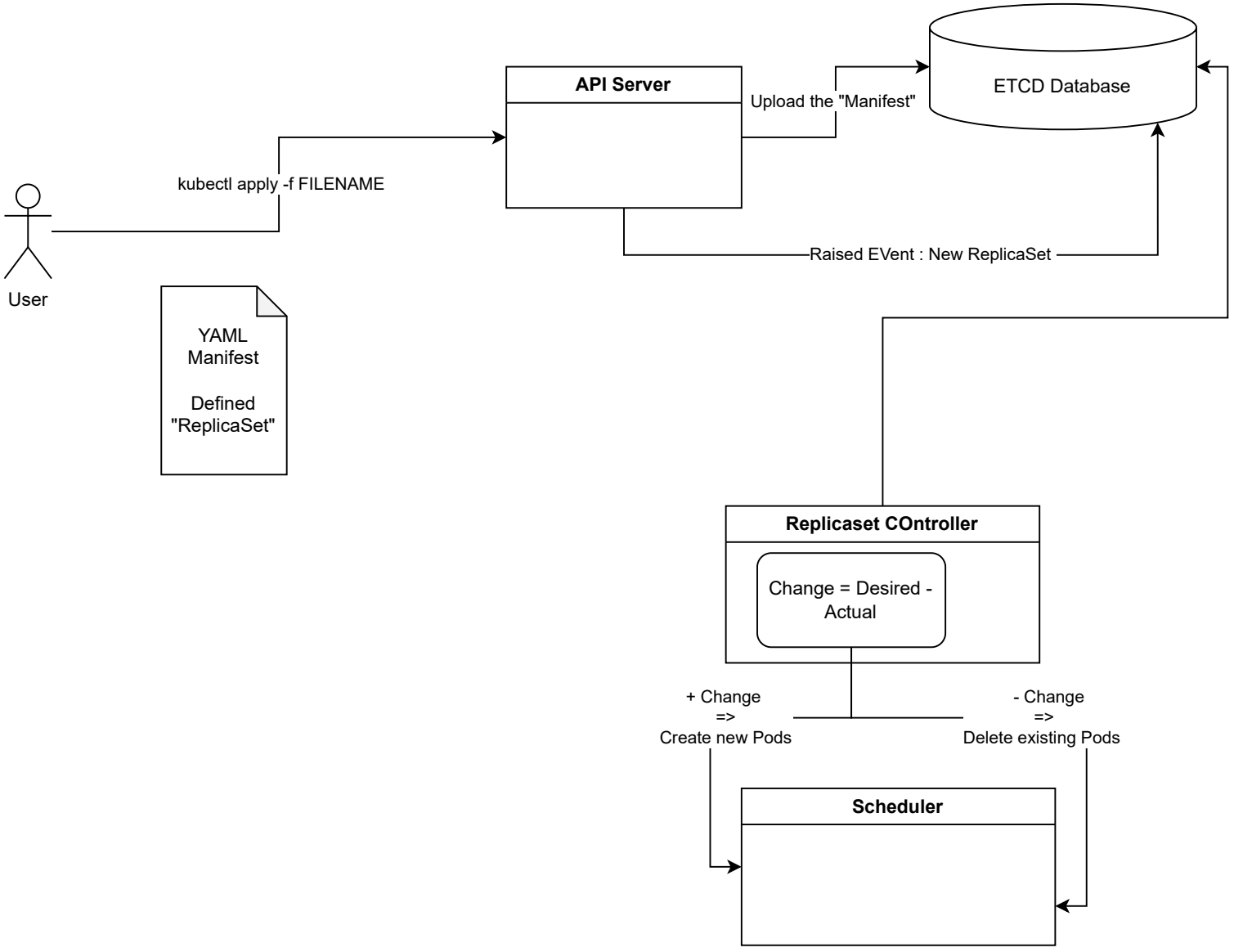

App and Config
App Dependencies
Lang Runtime
Base OS Libs

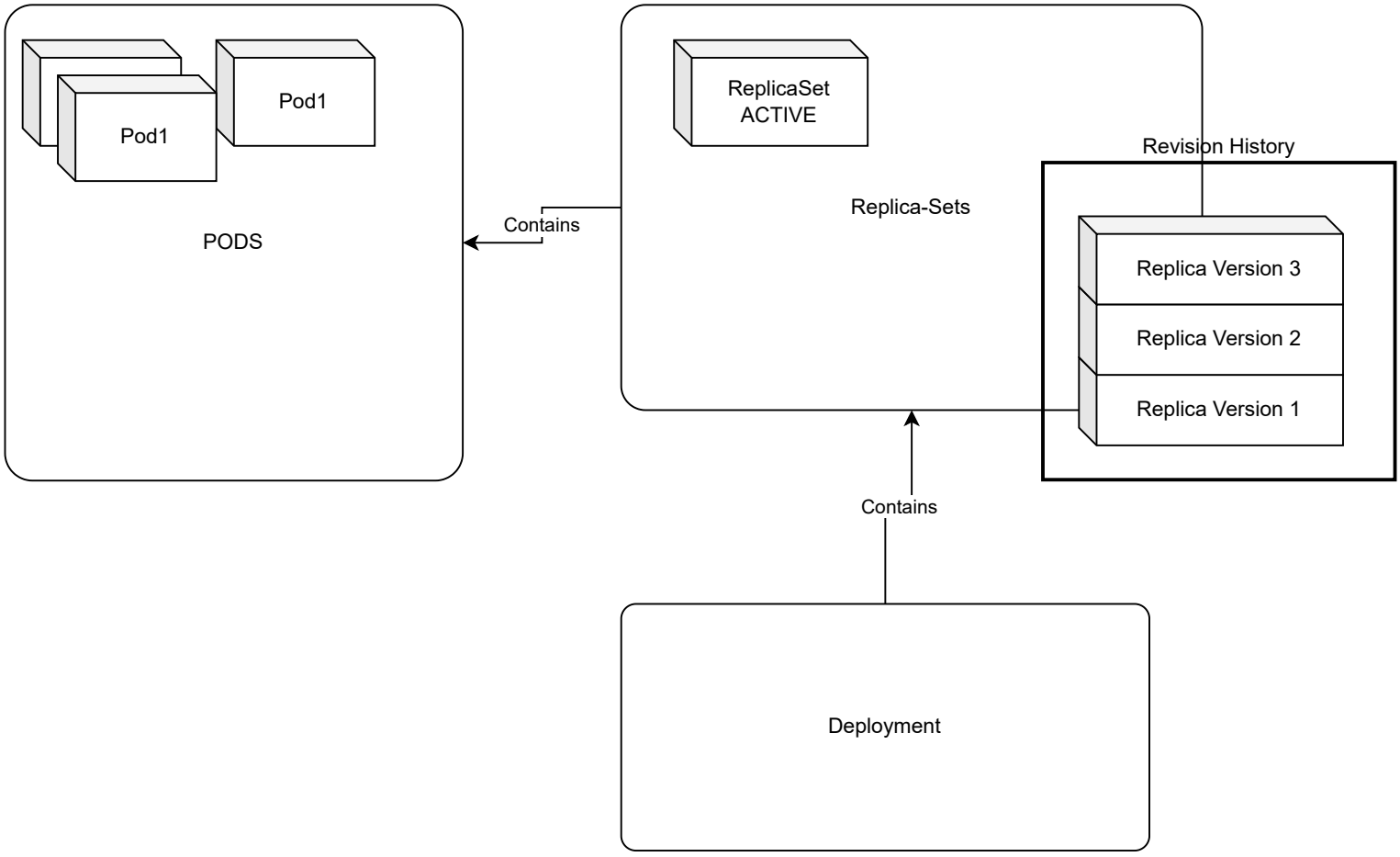

Container Instance
"Container"

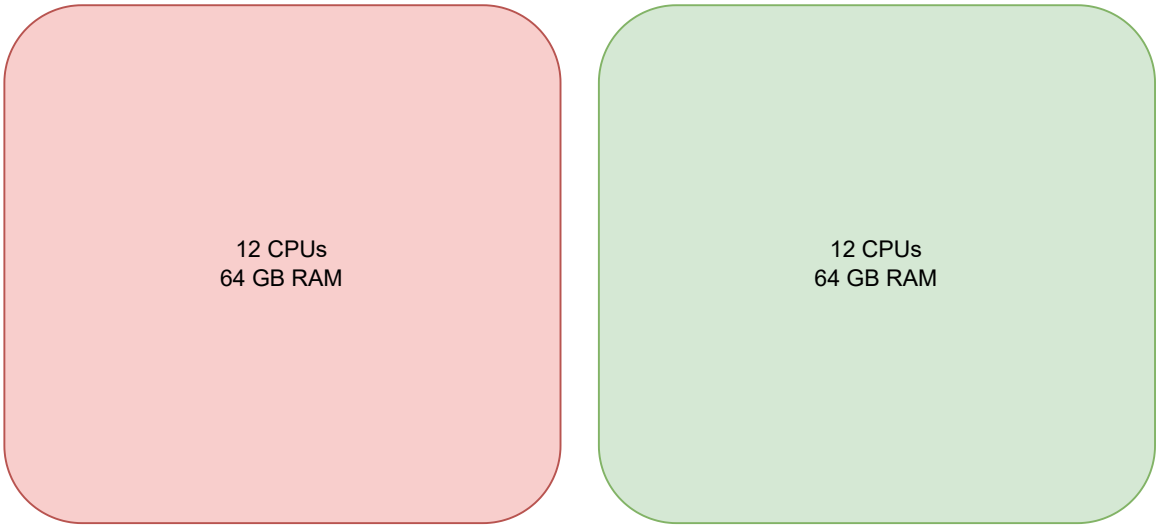

Container Image
"Image"
Container Registry

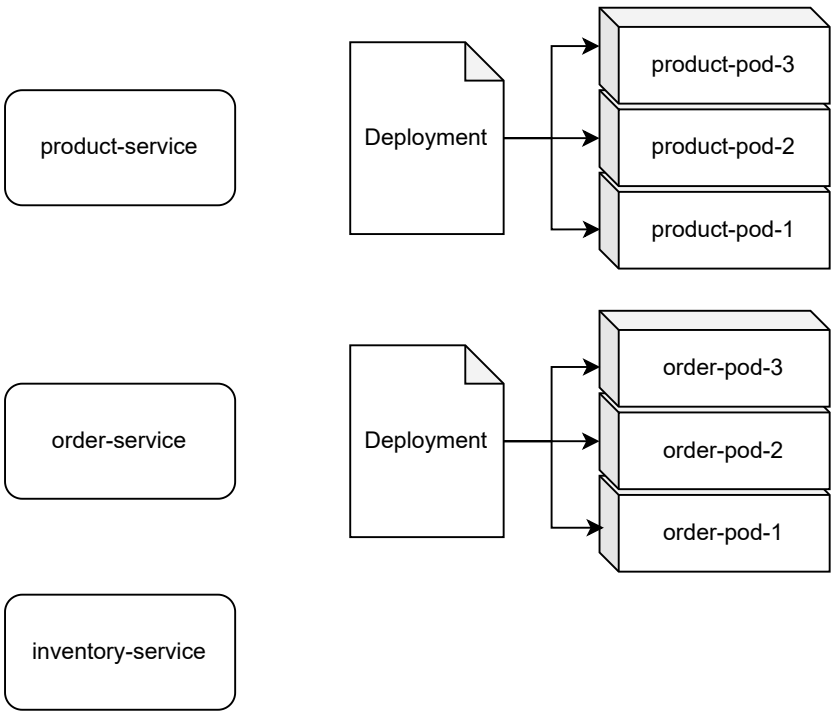

Kubernetes Cluster 1
LOCAL Cluster
kubectl
KubeConfig
Kubernetes Cluster 2
Remote Cluster
Ops/ Dev

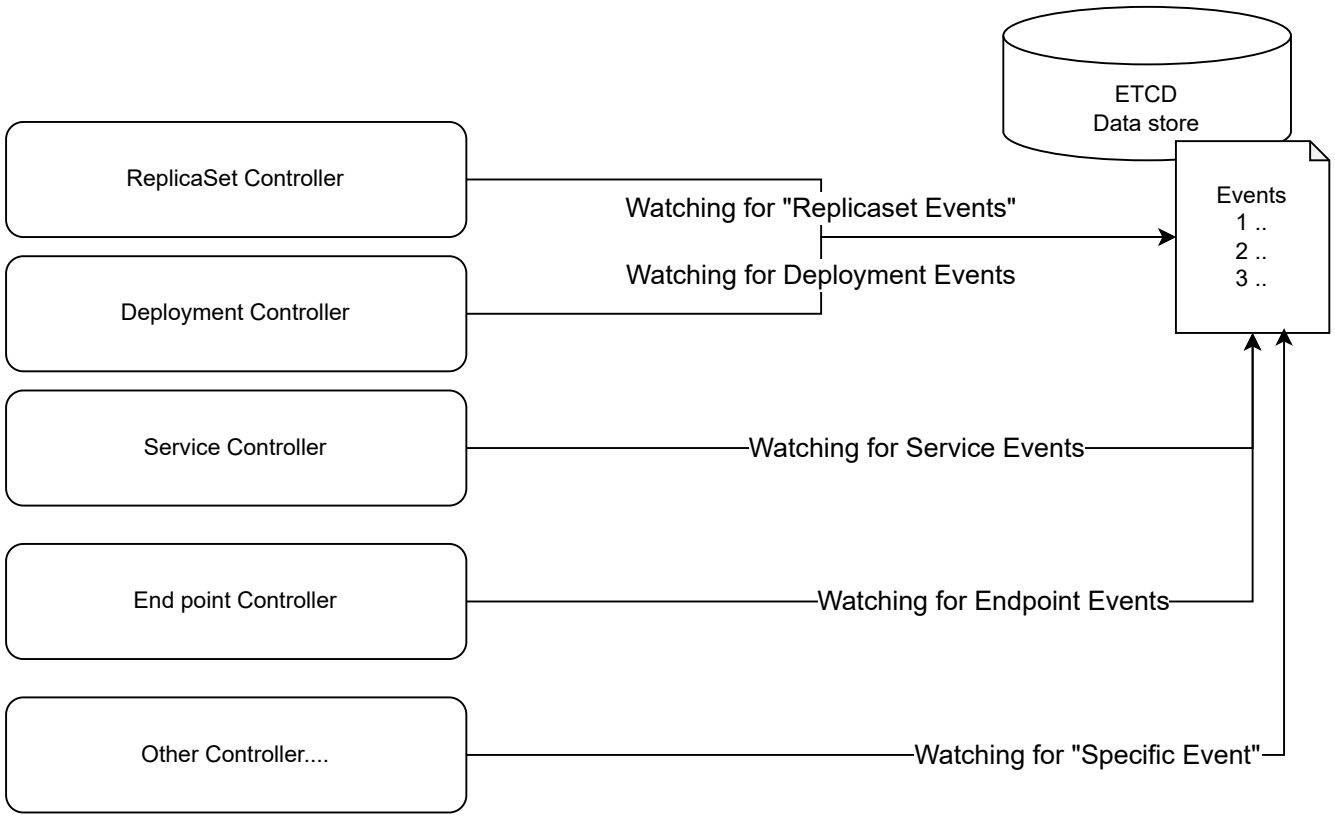

ConfigMap
Plain Text
Secret
Base64 Encoding !
As ENV
As Volume
Pod
Receive "Plain Text" ENV Variables

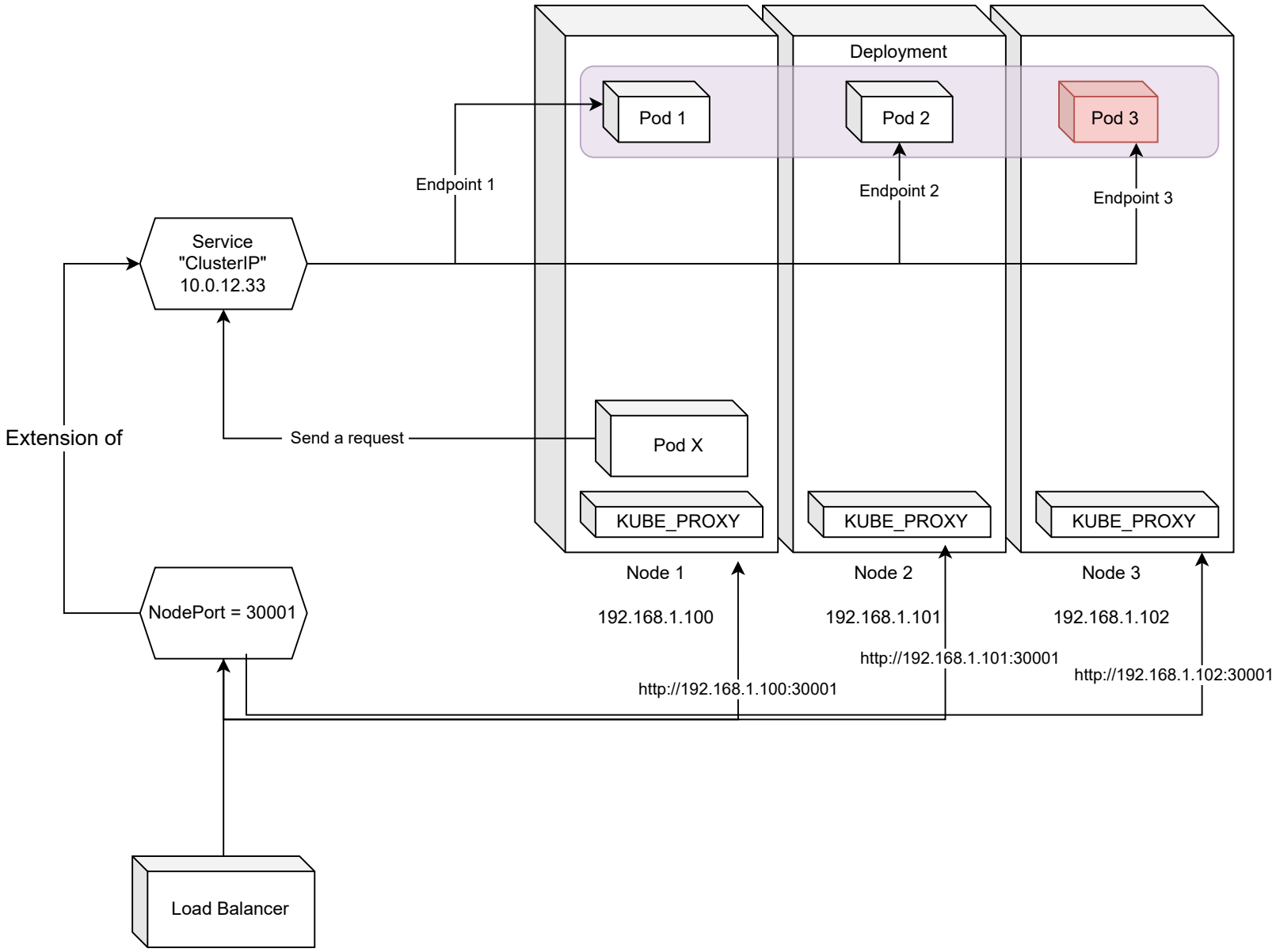

API Server
ETCD Database
Upload the "Manifest"
kubectl apply -f FILENAME
User
Raised EVent : New ReplicaSet
YAML
Manifest
Defined
"ReplicaSet"
Replicaset COntroller
Change = Desired -
Actual
+ Change
=>
Create new Pods
- Change
=>
Delete existing Pods
Scheduler

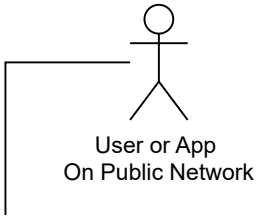

Pod1
Pod1
PODS
Contains
ReplicaSet
ACTIVE
Replica-Sets
Revision History
Replica Version 3
Replica Version 2
Replica Version 1
Contains
Deployment

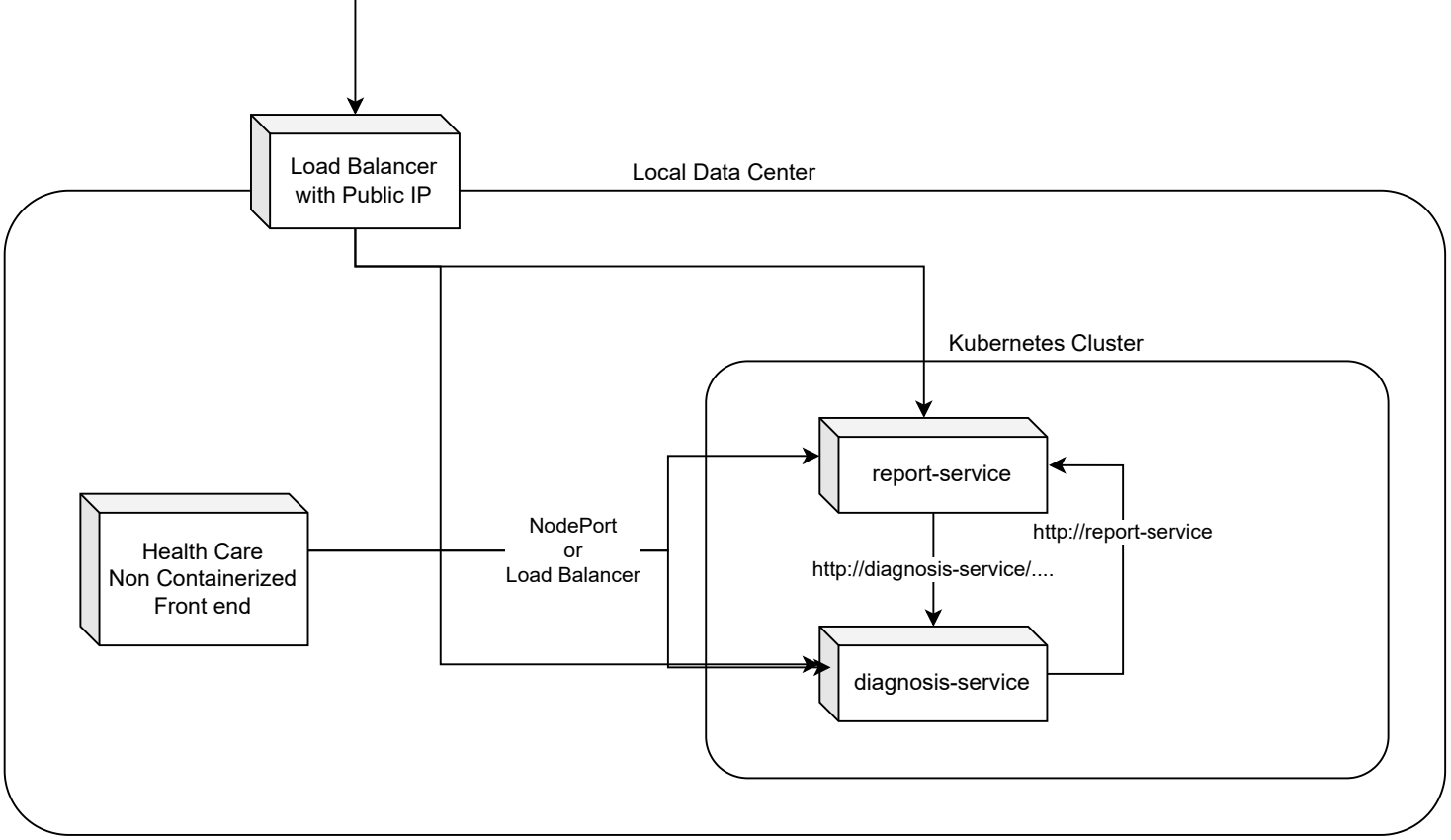

12 CPUs
64 GB RAM
12 CPUs
64 GB RAM

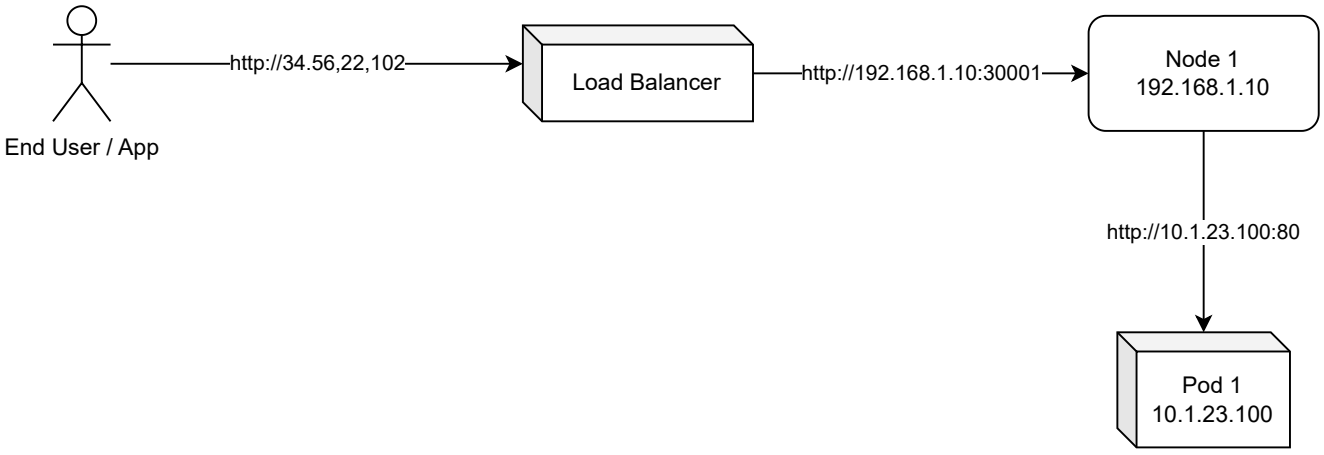

product-service
Deployment
product-pod-3
product-pod-2
product-pod-1
order-service
Deployment
order-pod-3
order-pod-2
order-pod-1
inventory-service

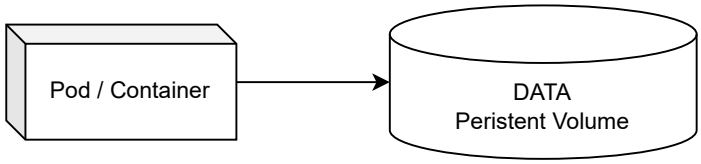

ETCD
Data store
Events
1 ..
2 ..
3 ..
ReplicaSet Controller
Deployment Controller
Service Controller
End point Controller
Other Controller....
Watching for "Replicaset Events"
Watching for Deployment Events
Watching for Service Events
Watching for Endpoint Events
Watching for "Specific Event"

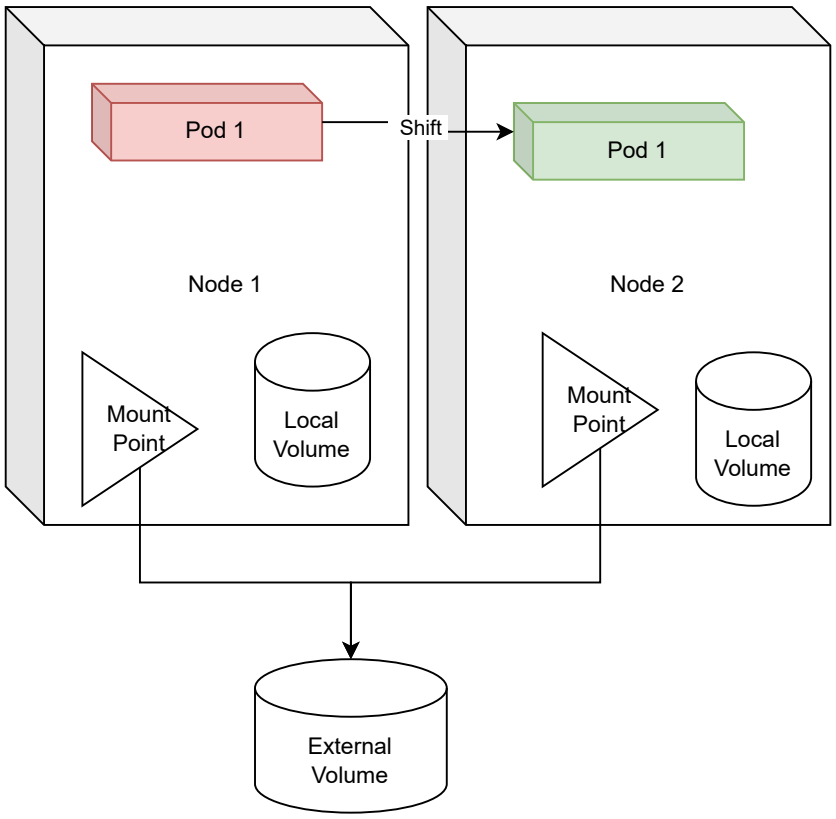

Deployment
Pod 1
Pod 2
Pod 3
Endpoint 1
Endpoint 2
Endpoint 3
Service
"ClusterIP"
10.0.12.33
Extension of
Send a request
Pod X
KUBE_PROXY
KUBE_PROXY
KUBE_PROXY
Node 1
192.168.1.100
Node 2
192.168.1.101
Node 3
192.168.1.102
NodePort = 30001
http://192.168.1.100:30001
http://192.168.1.101:30001
http://192.168.1.102:30001
Load Balancer

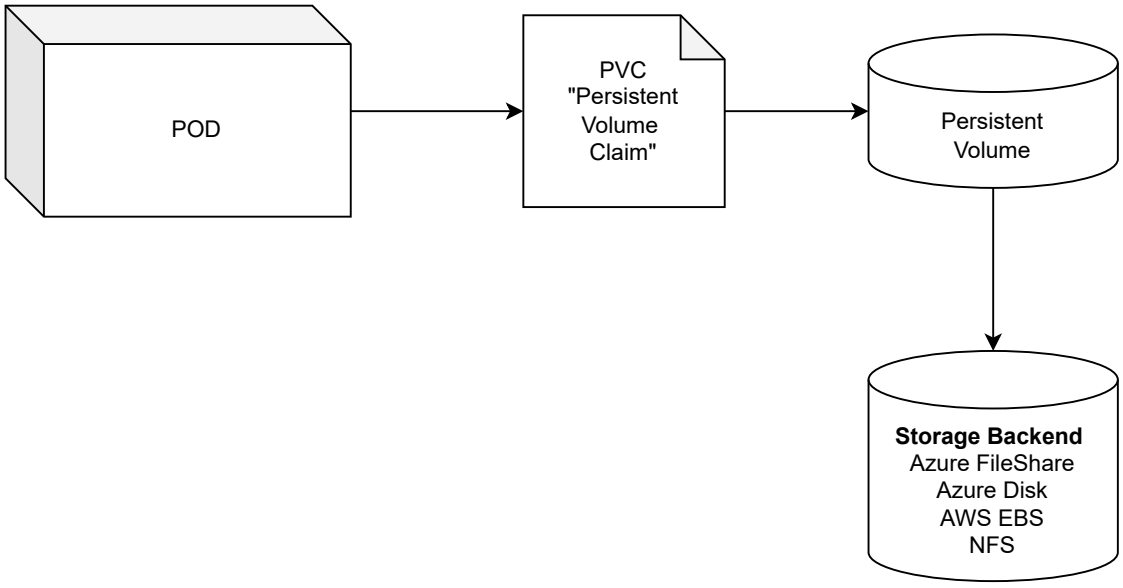

User or App
On Public Network

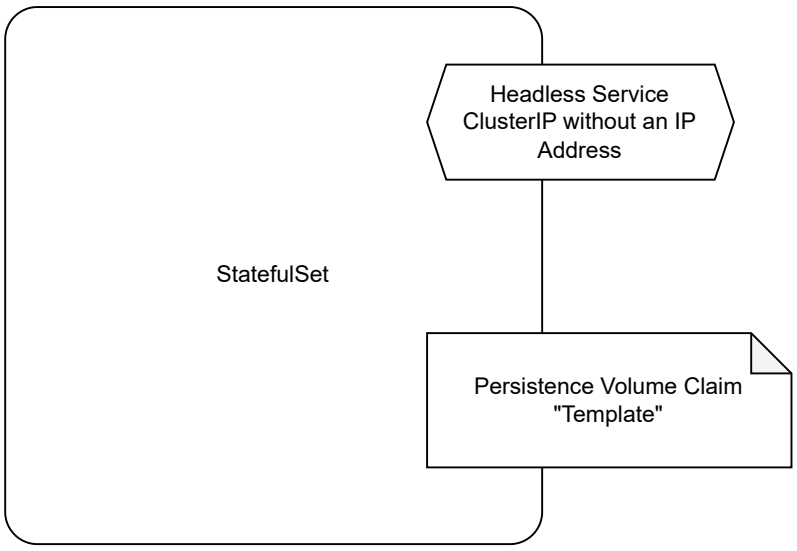

Load Balancer
with Public IP
Local Data Center
Kubernetes Cluster
report-service
Health Care
Non Containerized
Front end
NodePort
or
Load Balancer
http://report-service
http://diagnosis-service/....
diagnosis-service

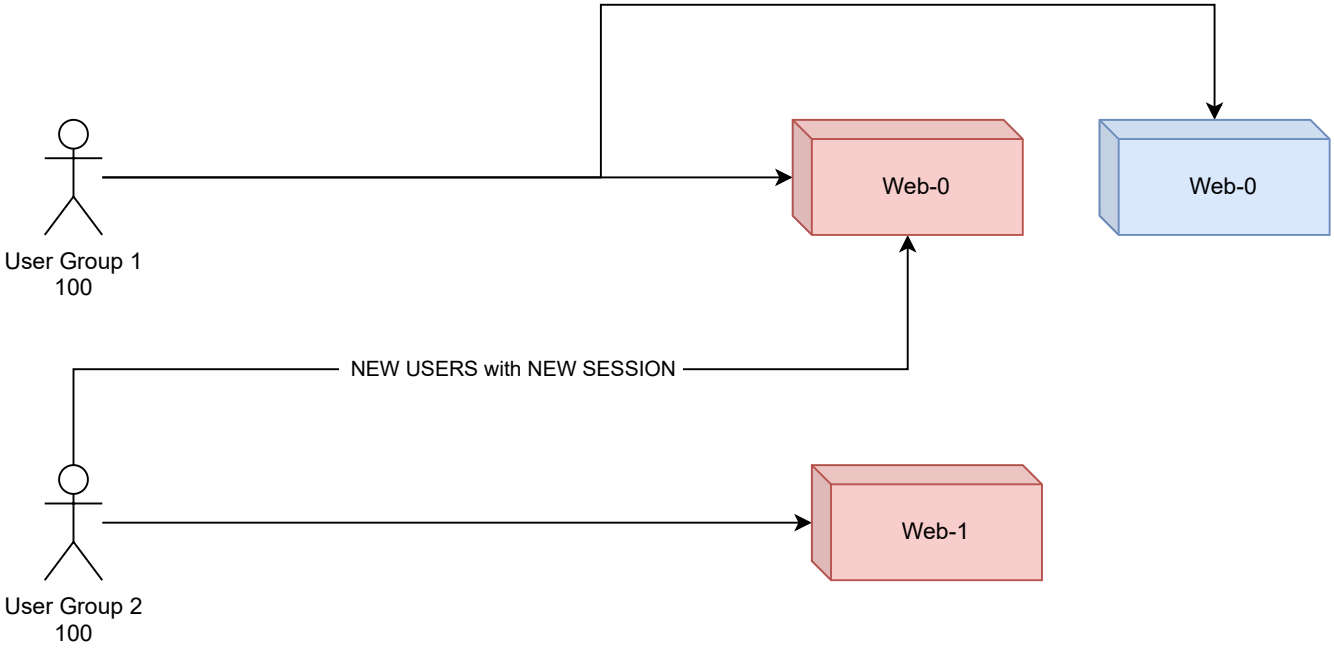

End User / App
http://34.56,22,102
Load Balancer
http://192.168.1.10:30001
Node 1
192.168.1.10
http://10.1.23.100:80
Pod 1
10.1.23.100

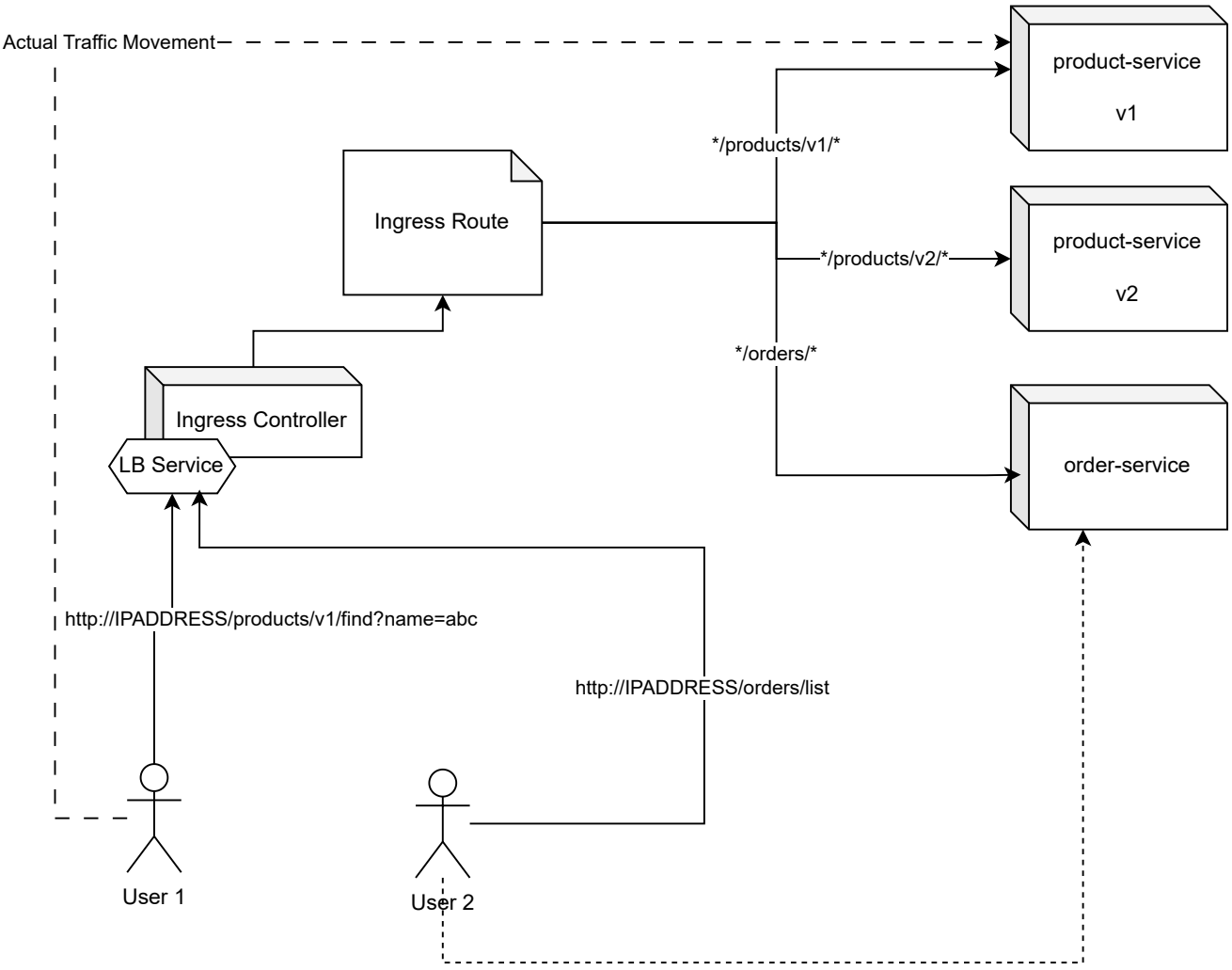

Pod / Container
DATA
Peristent Volume

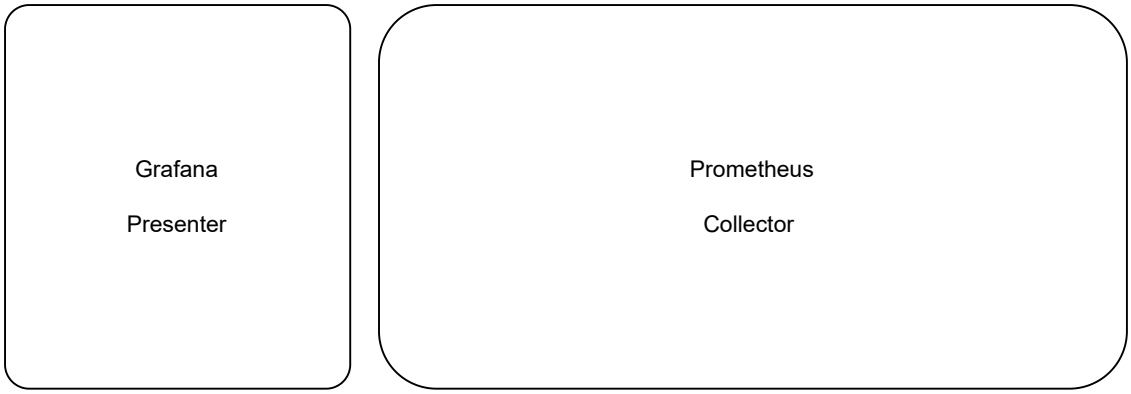

Pod 1
Shift
Pod 1
Node 1
Node 2
Mount Point
Local Volume
Mount Point
Local Volume
External Volume


POD
PVC
"Persistent
Volume
Claim"
Persistent
Volume
Storage Backend
Azure FileShare
Azure Disk
AWS EBS
NFS


Headless Service
ClusterIP without an IP
Address
StatefulSet
Persistence Volume Claim
"Template"


Web-0
Web-0
User Group 1
100
NEW USERS with NEW SESSION
Web-1
User Group 2
100


Actual Traffic Movement
product-service
v1
/products/v1/
Ingress Route
product-service
v2
/products/v2/
/orders/
Ingress Controller
LB Service
order-service
http://IPADDRESS/products/v1/find?name=abc
http://IPADDRESS/orders/list
User 1
User 2


Grafana
Presenter
Prometheus
Collector