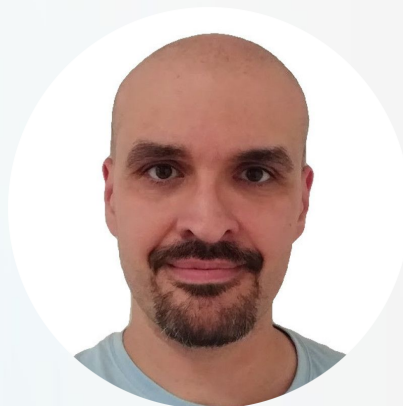


ROOM 2  
05.00 PM

# Kubernetes 201



Giovanni Clément  
Product Unit Director  
[@gioindahouz](#)



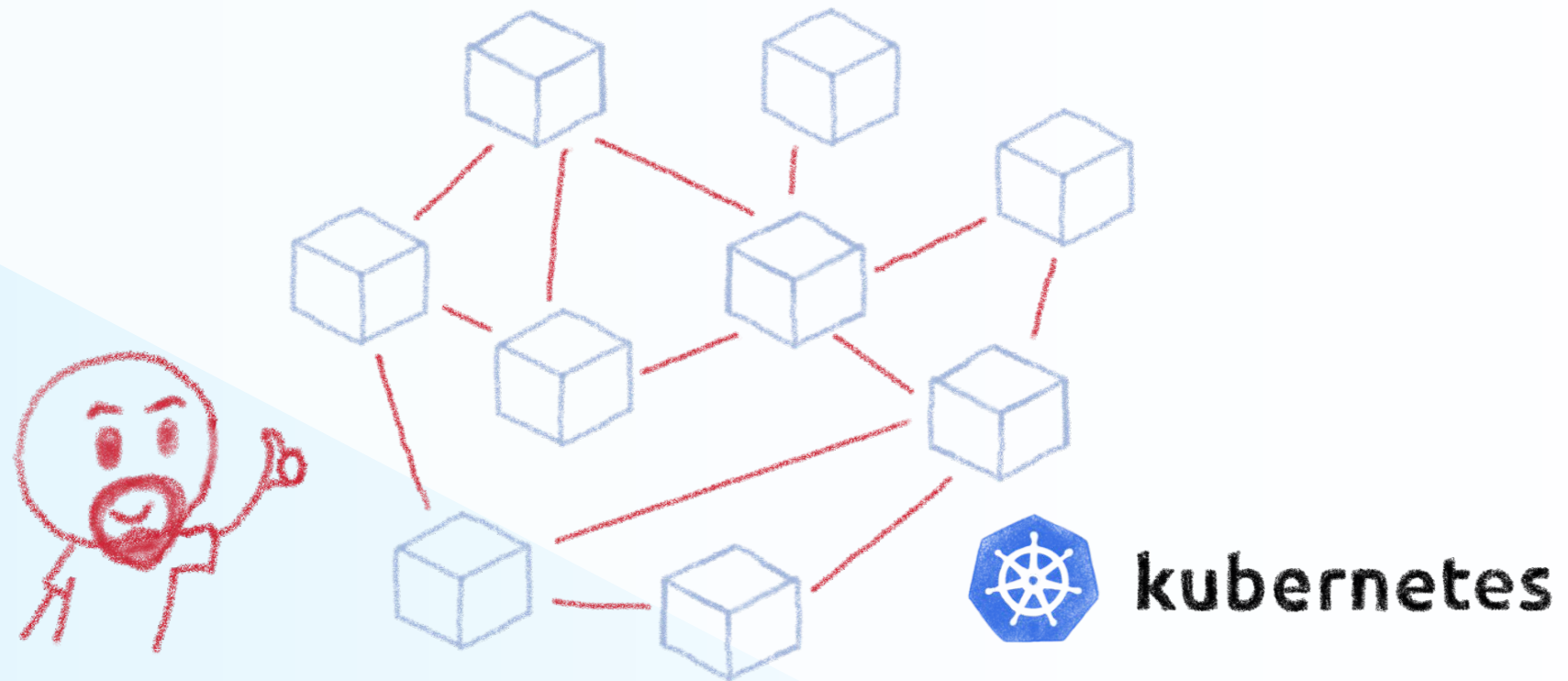
Horacio Gonzalez  
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# Beyond the first deployment



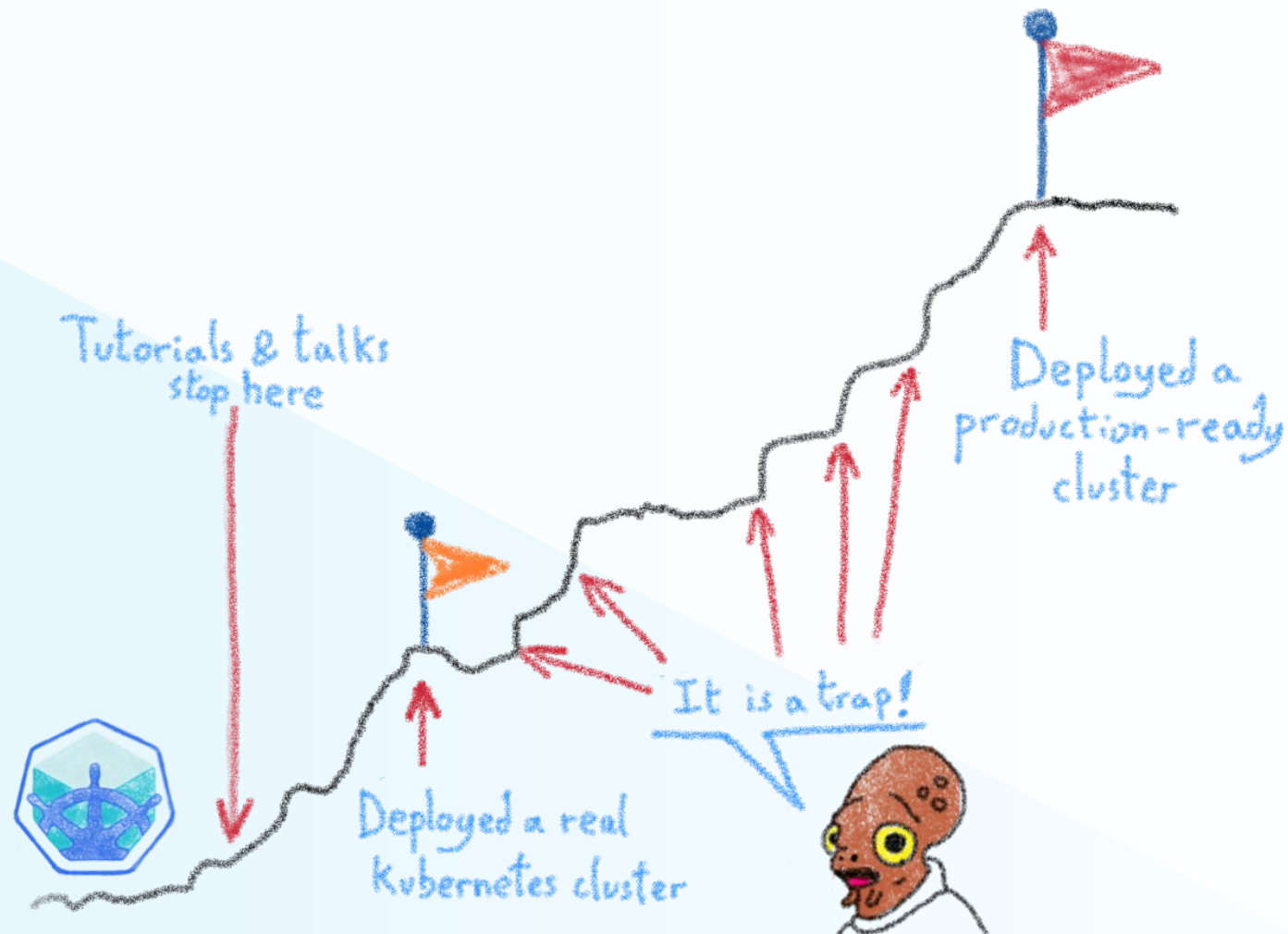
So I have deployed my distributed architecture on K8s,  
everything is good now, isn't it?



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# The long path to production



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# Describing some of those traps



To ease and empower your path to production



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# Security

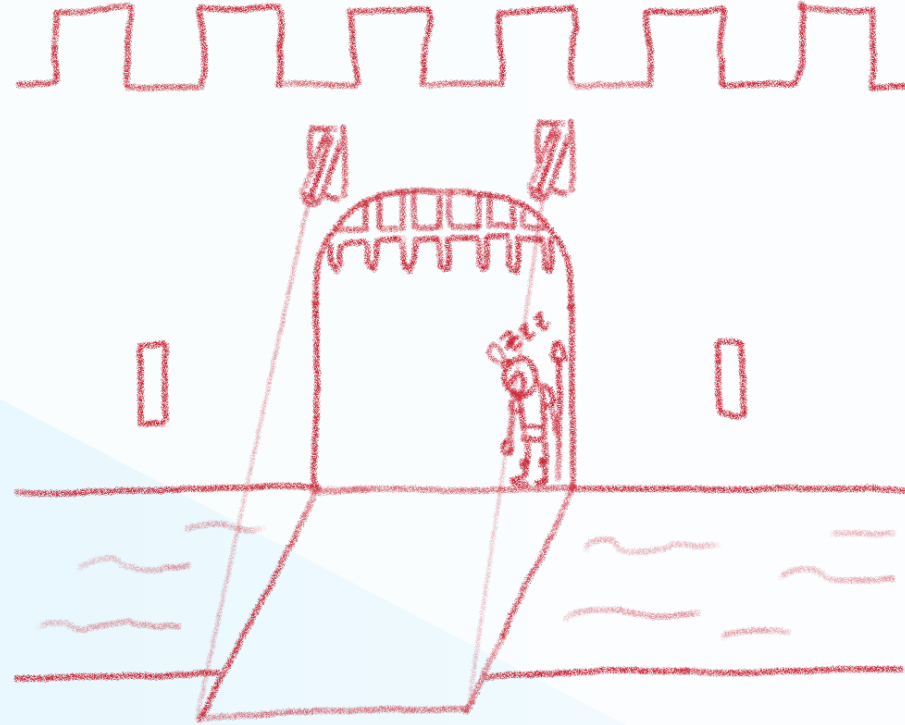
## Hardening your Kubernetes



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# Kubernetes is insecure by design



It's a feature, not a bug

It's up to the K8s admin to secure it according to their needs



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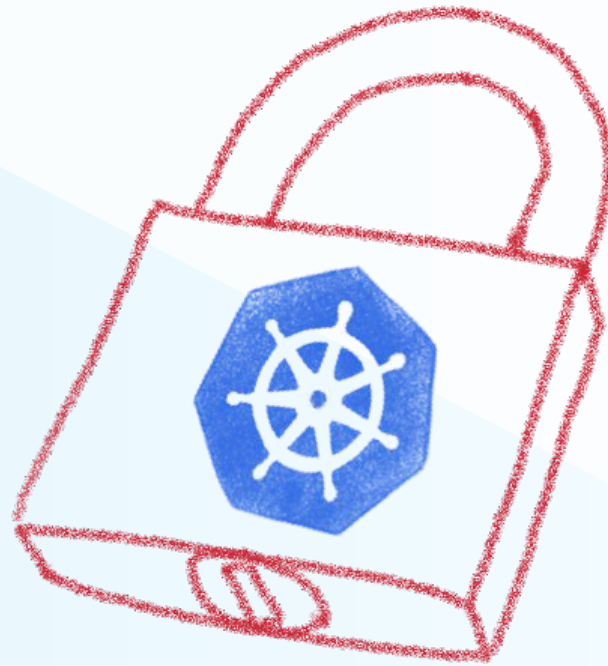
# Not everybody has the same security needs



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# Kubernetes allows to enforce security practices as needed



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# Listing some good practices

- Close open access
- Define and implement RBAC
- Define and implement Network Policies
- Isolate sensitive workloads



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# Close open access



Close all by default, open only the needed ports  
Follow the least privileged principle



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# Define and implement RBAC

RBAC: Role-Based Access Control



According to your needs

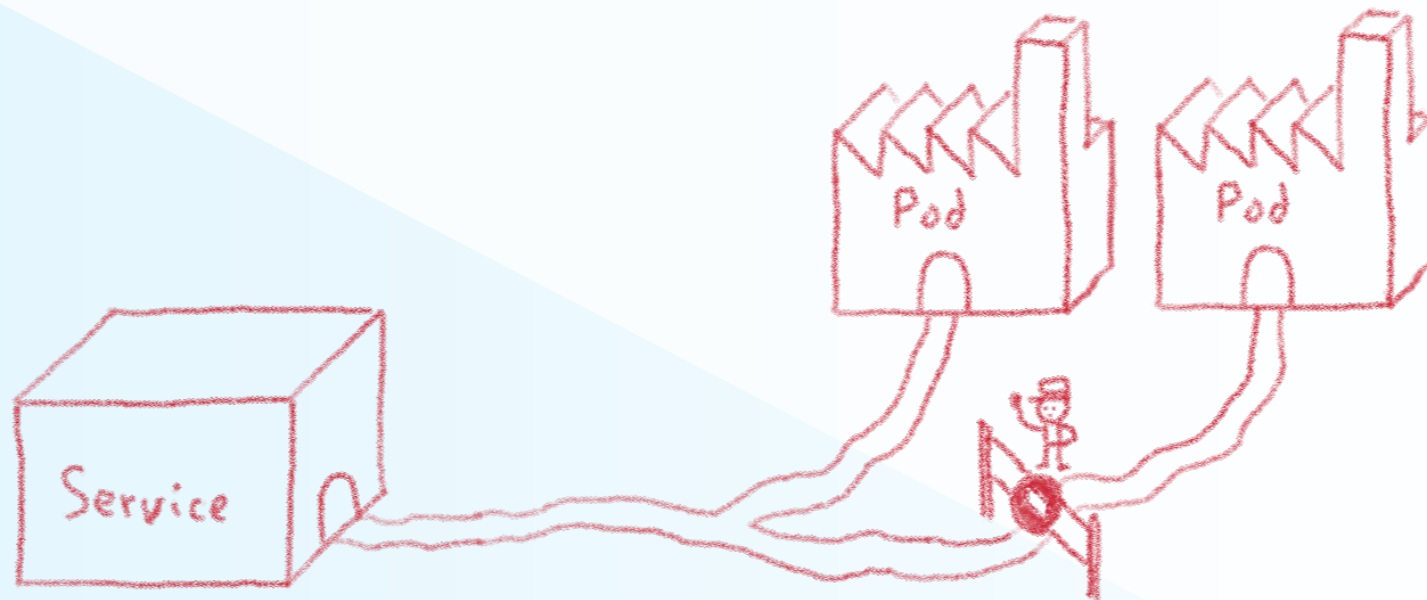


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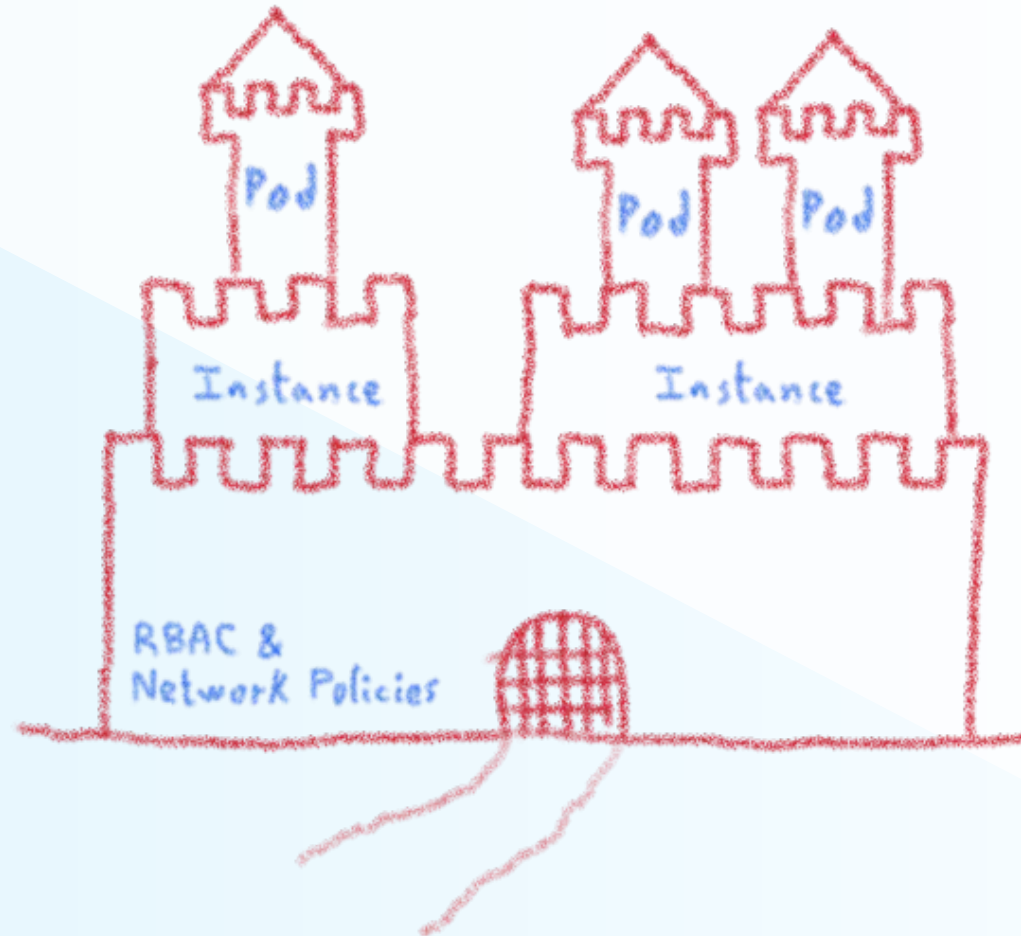
# Define and implement network policies



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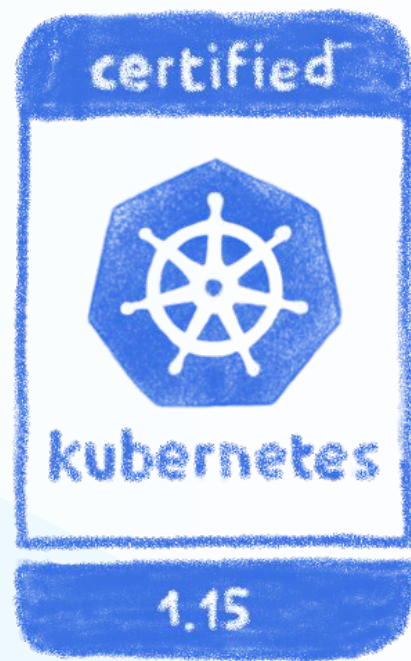
# Use RBAC and Network Policies to isolate your sensitive workload



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# Always keep up to date



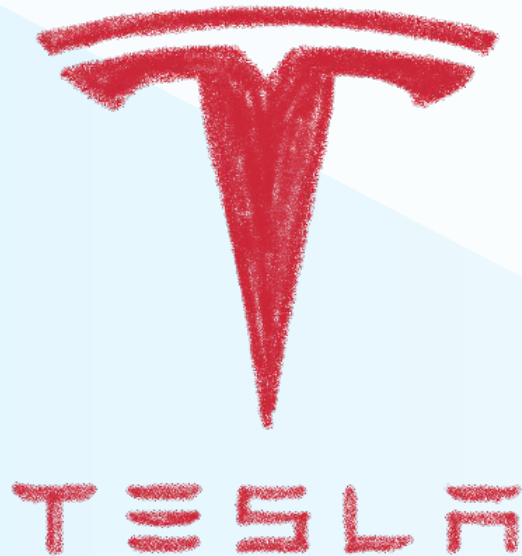
Both Kubernetes and plugins



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# And remember, even the best can get hacked



One of Tesla's cluster got hacked  
via an unprotected K8s API endpoint,  
and was used to mine cryptocurrency...

Remain attentive, don't get too confident



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# Extensibility

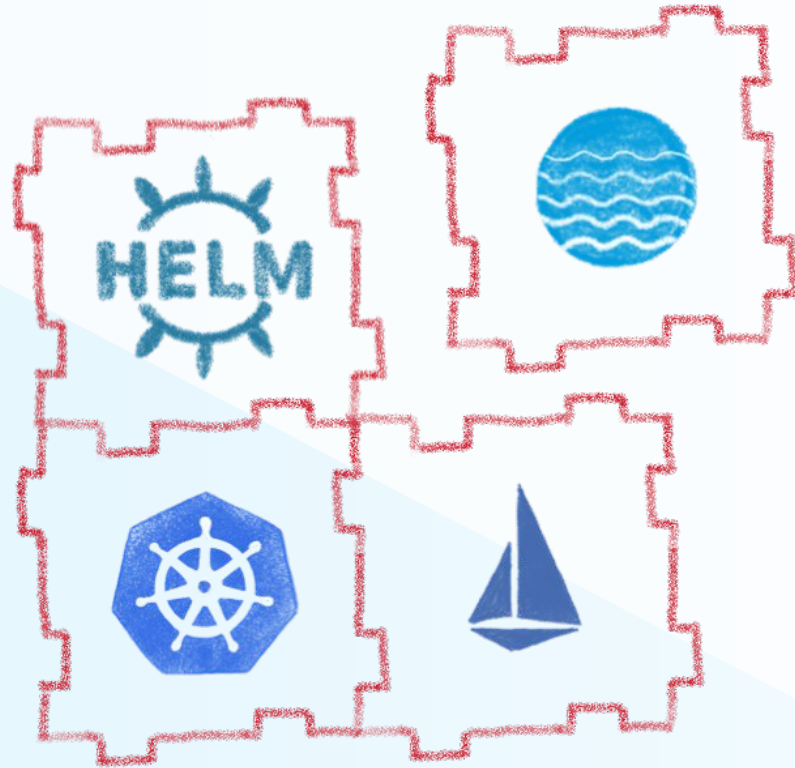
Enhance your Kubernetes



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# Kubernetes is modular



Fully extensible

- Kubernetes API
- Cluster demons
- Controllers
- Custom resources
- ...

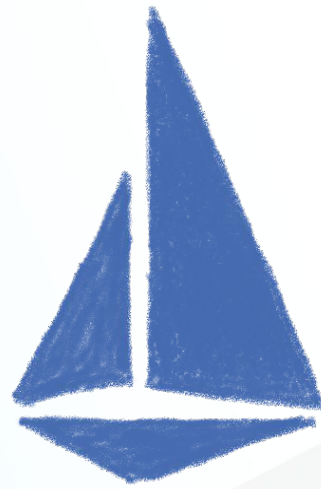
Operators

Let's see how some of those plugins can help you



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# Istio

A service mesh for Kubernetes...  
and much more!

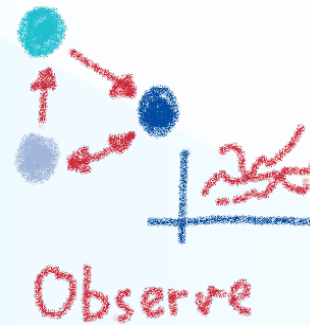
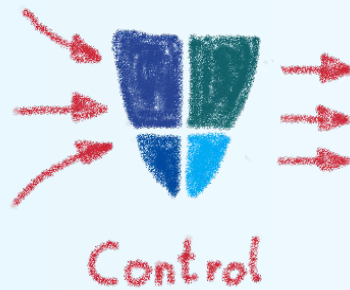
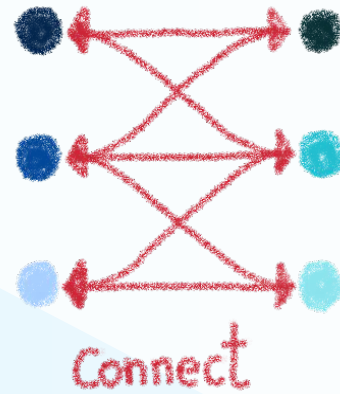
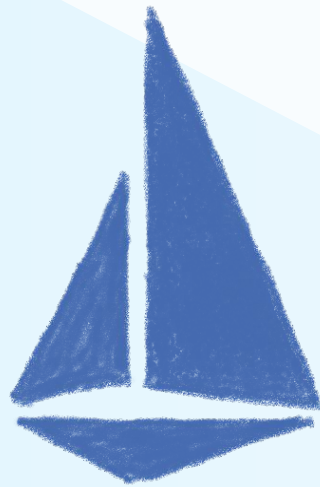


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# Istio: A service mesh but not only



Rolling upgrades

A/B Testing

Canary Testing

Edge traffic management

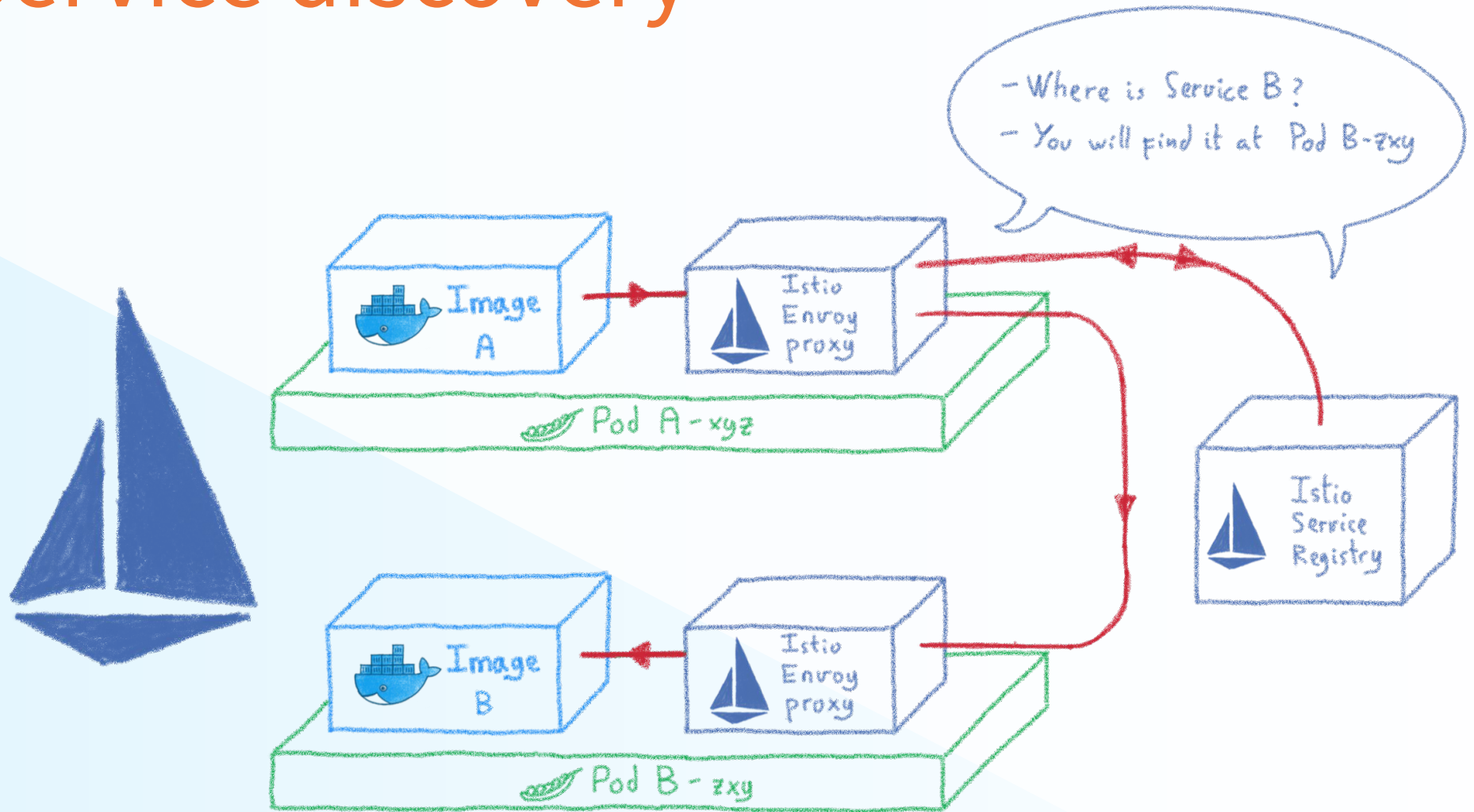
Multicloud service mesh



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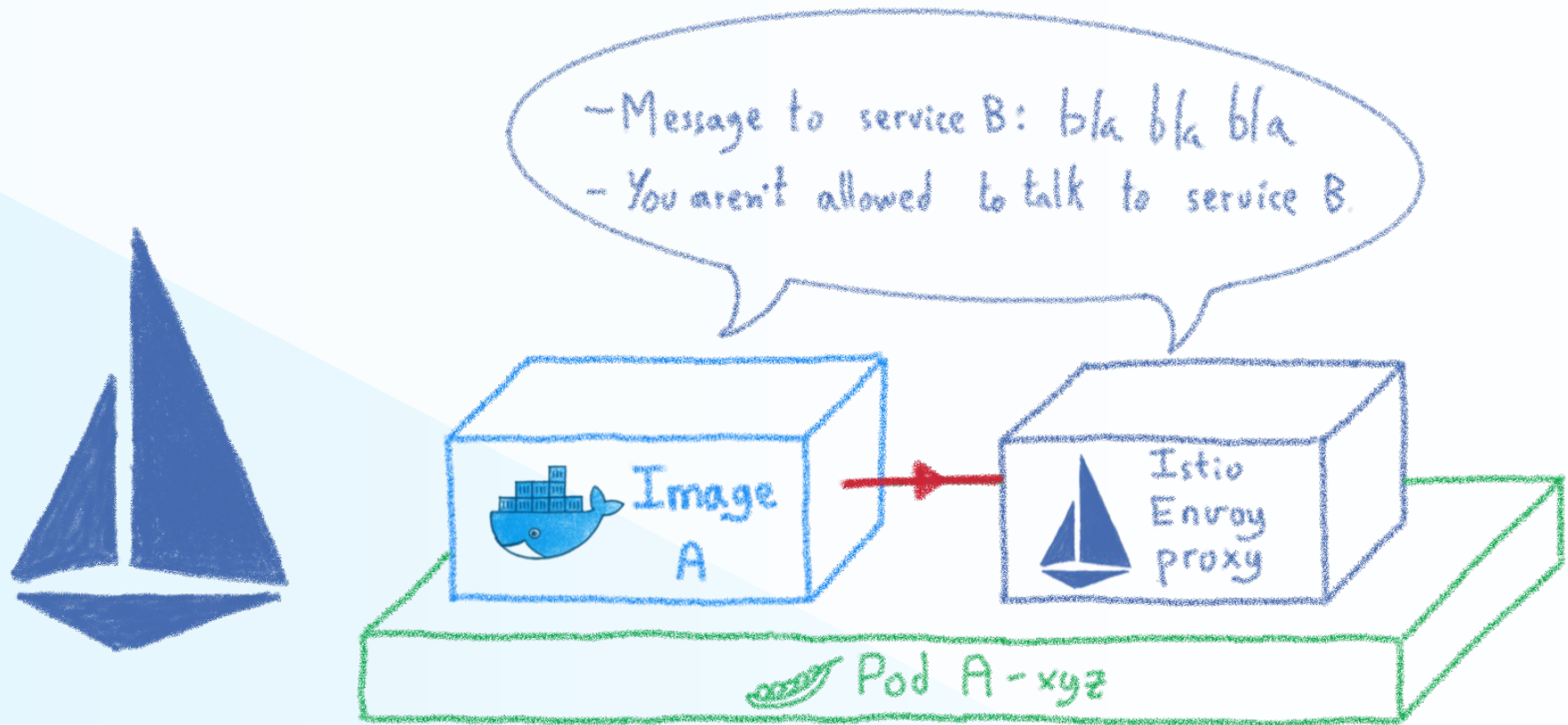
# Service discovery



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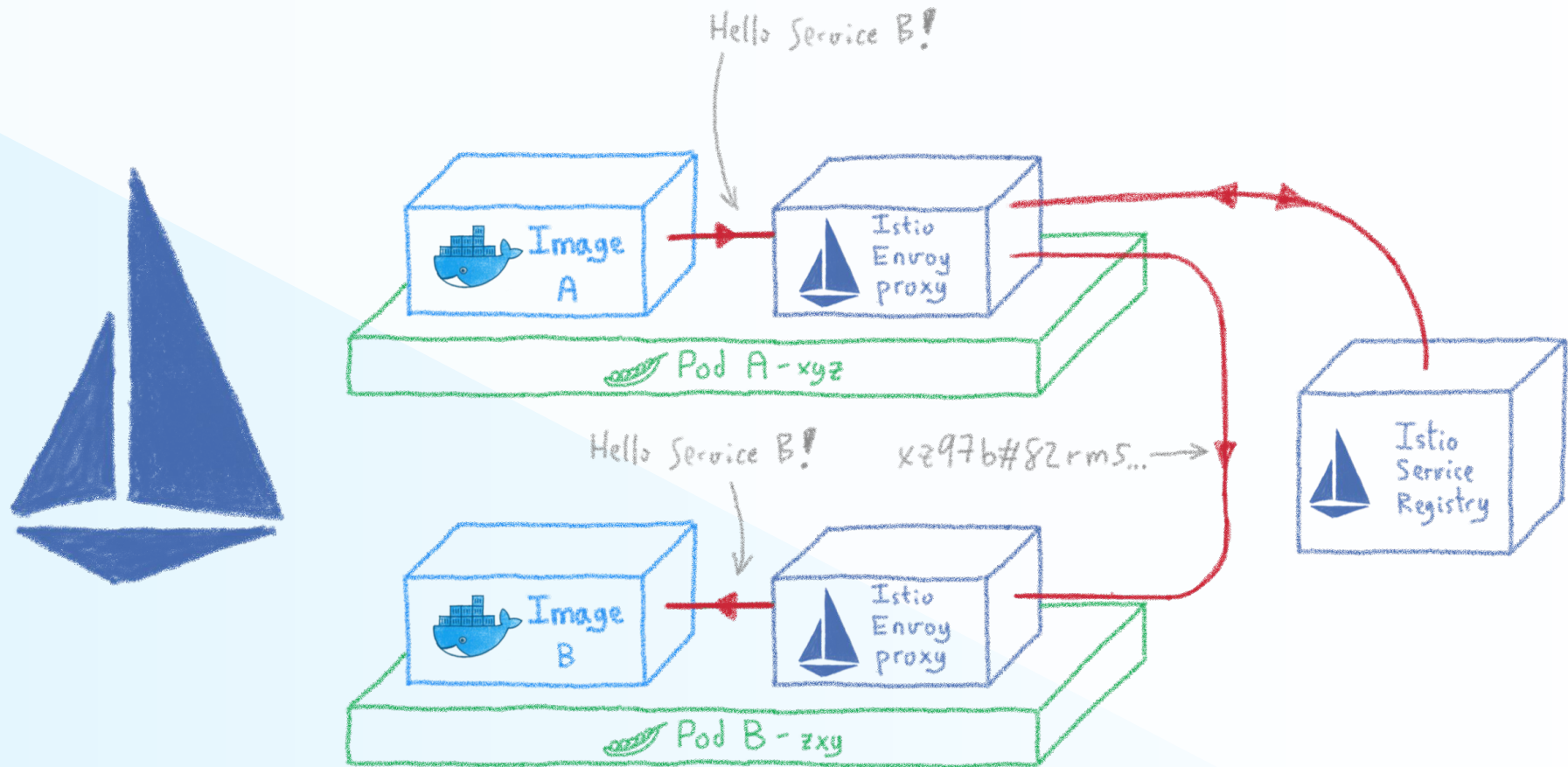
# Traffic control



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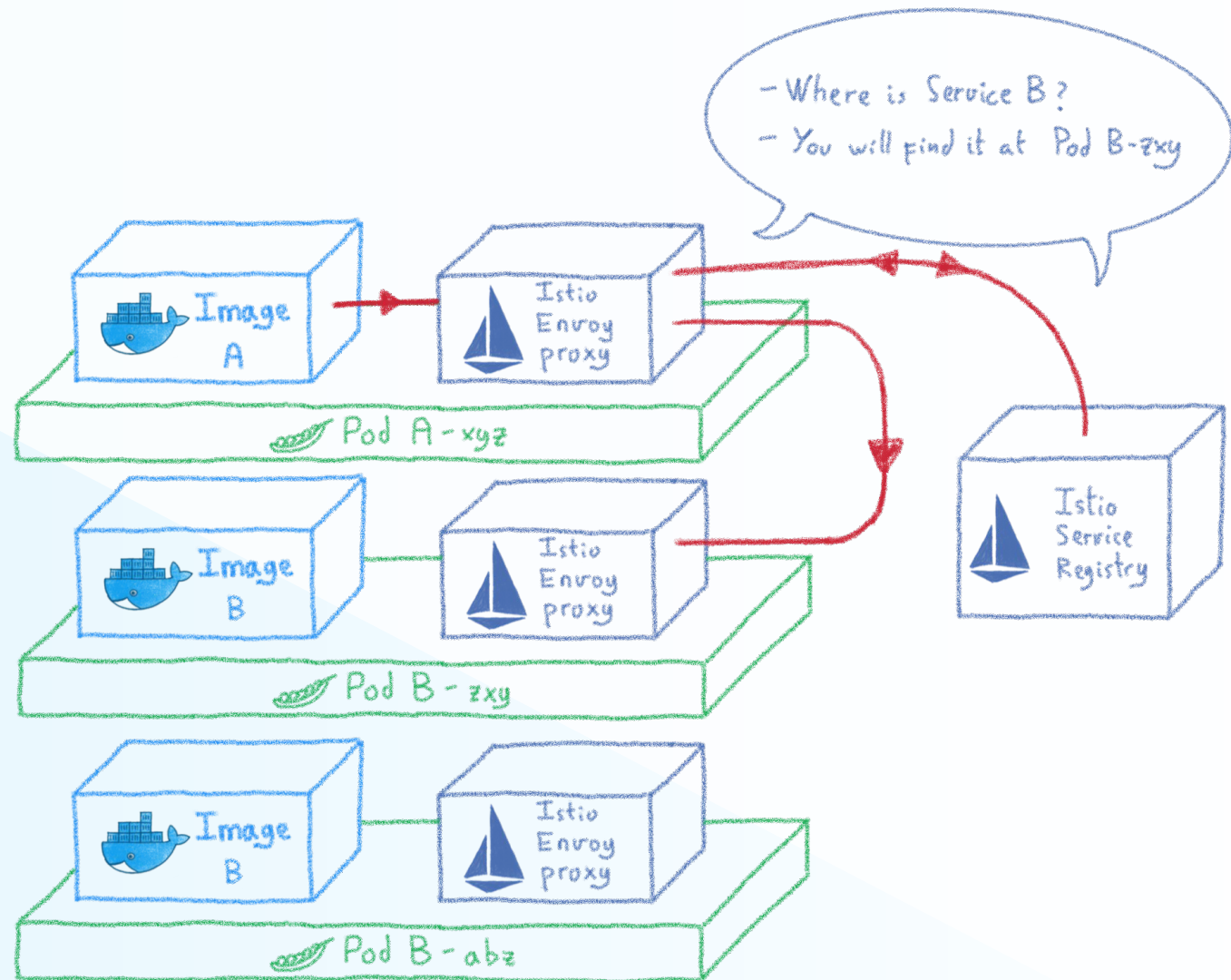
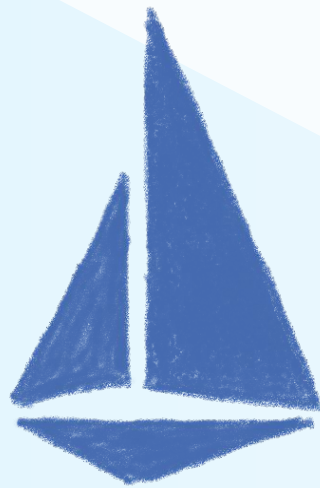
# Encrypting internal communications



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# Routing and load balancing

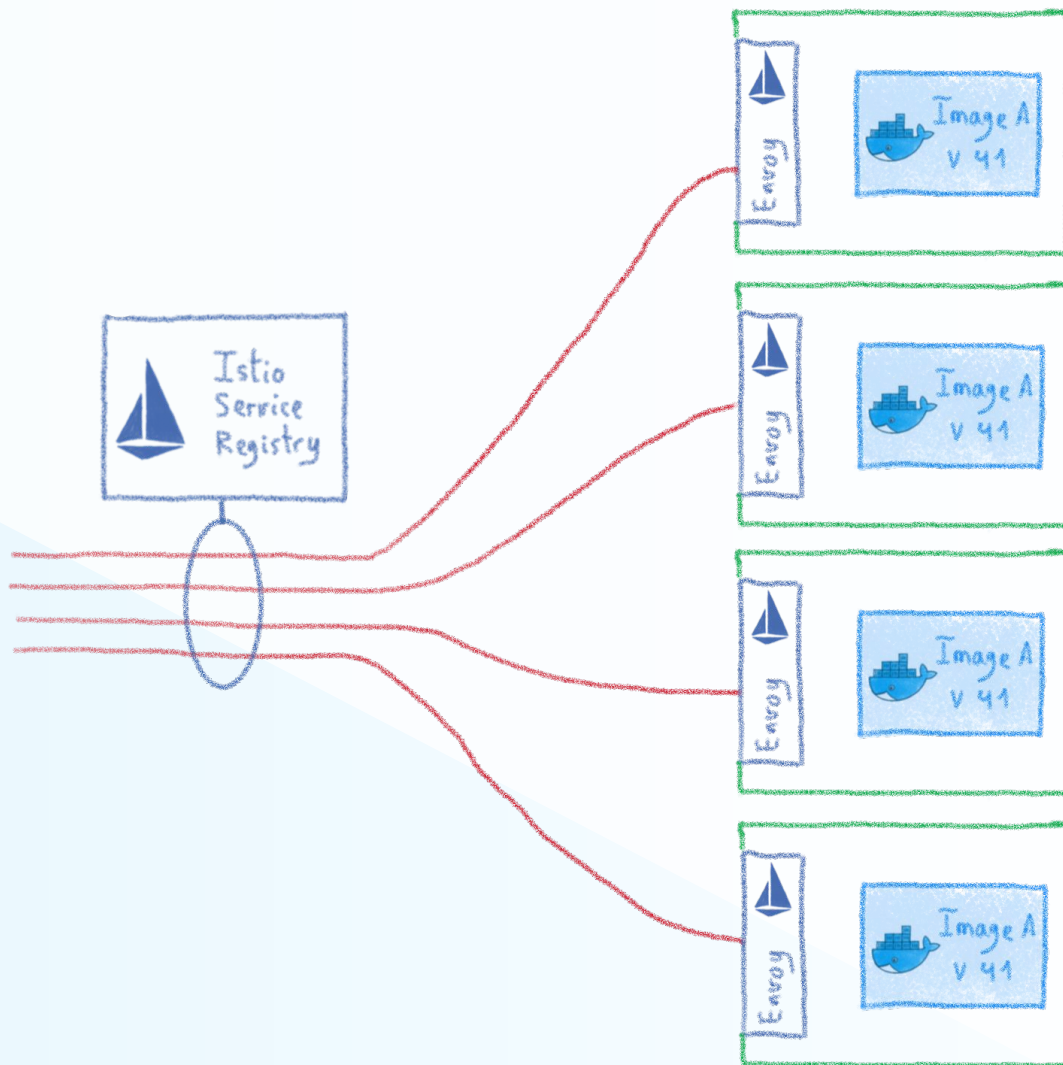
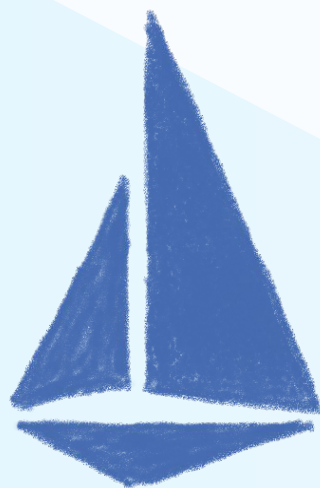


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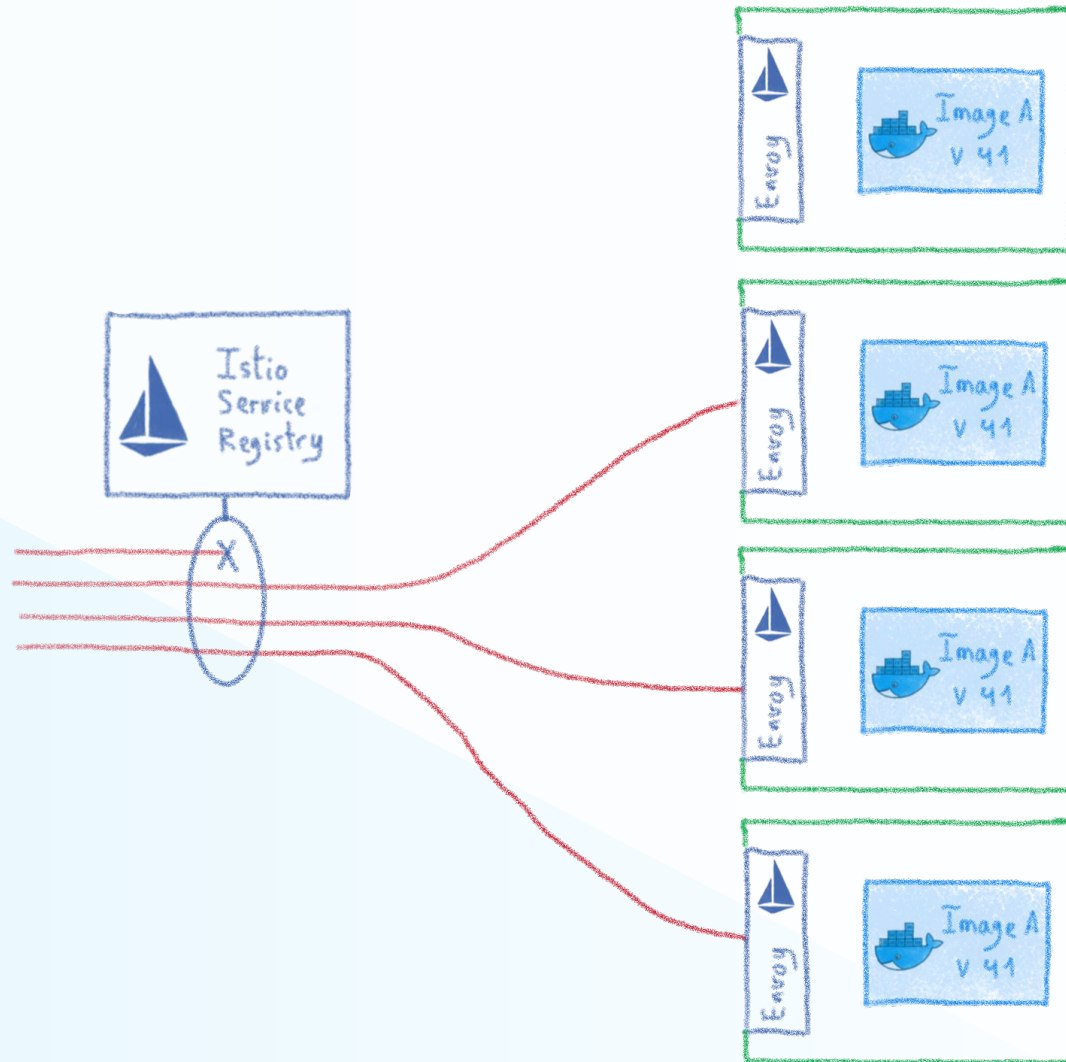
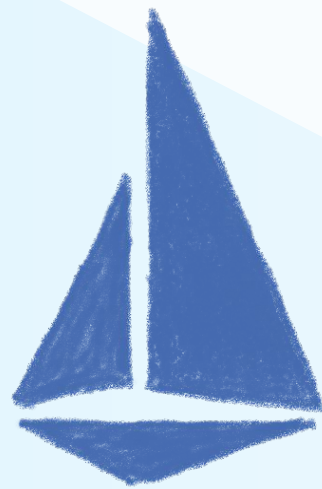
# Rolling upgrades



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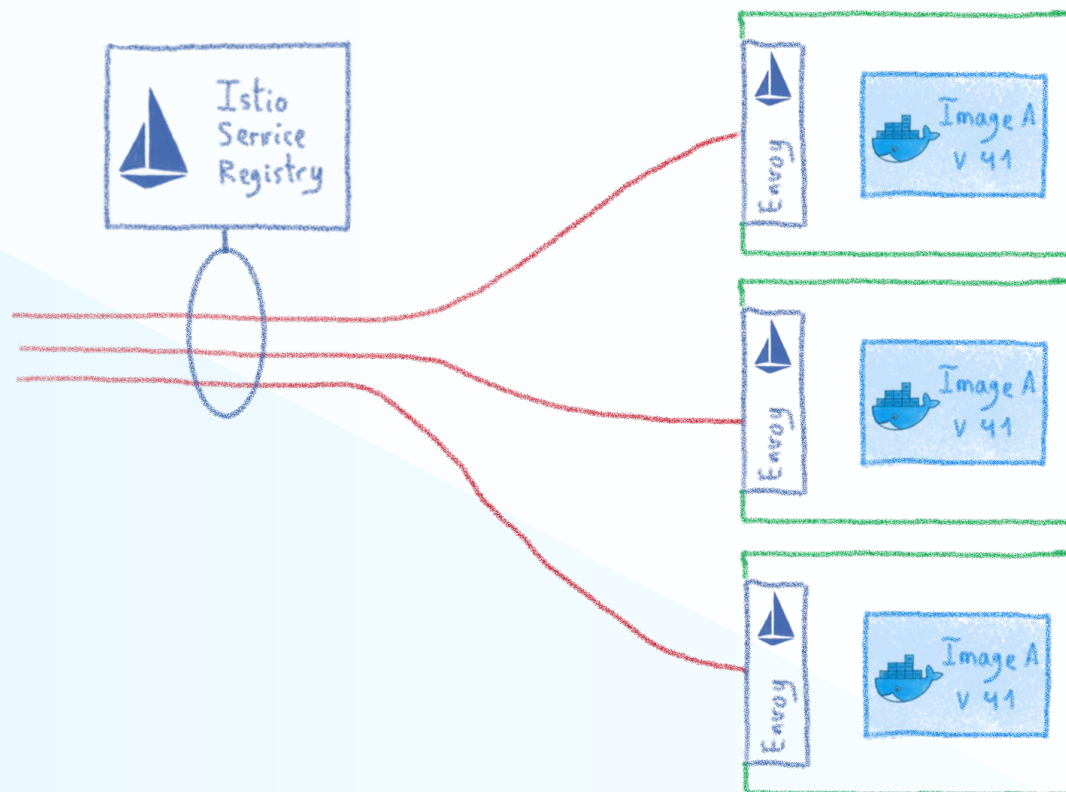
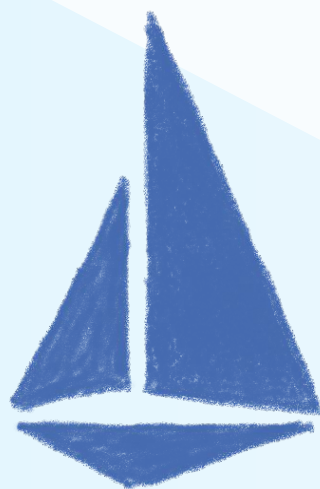


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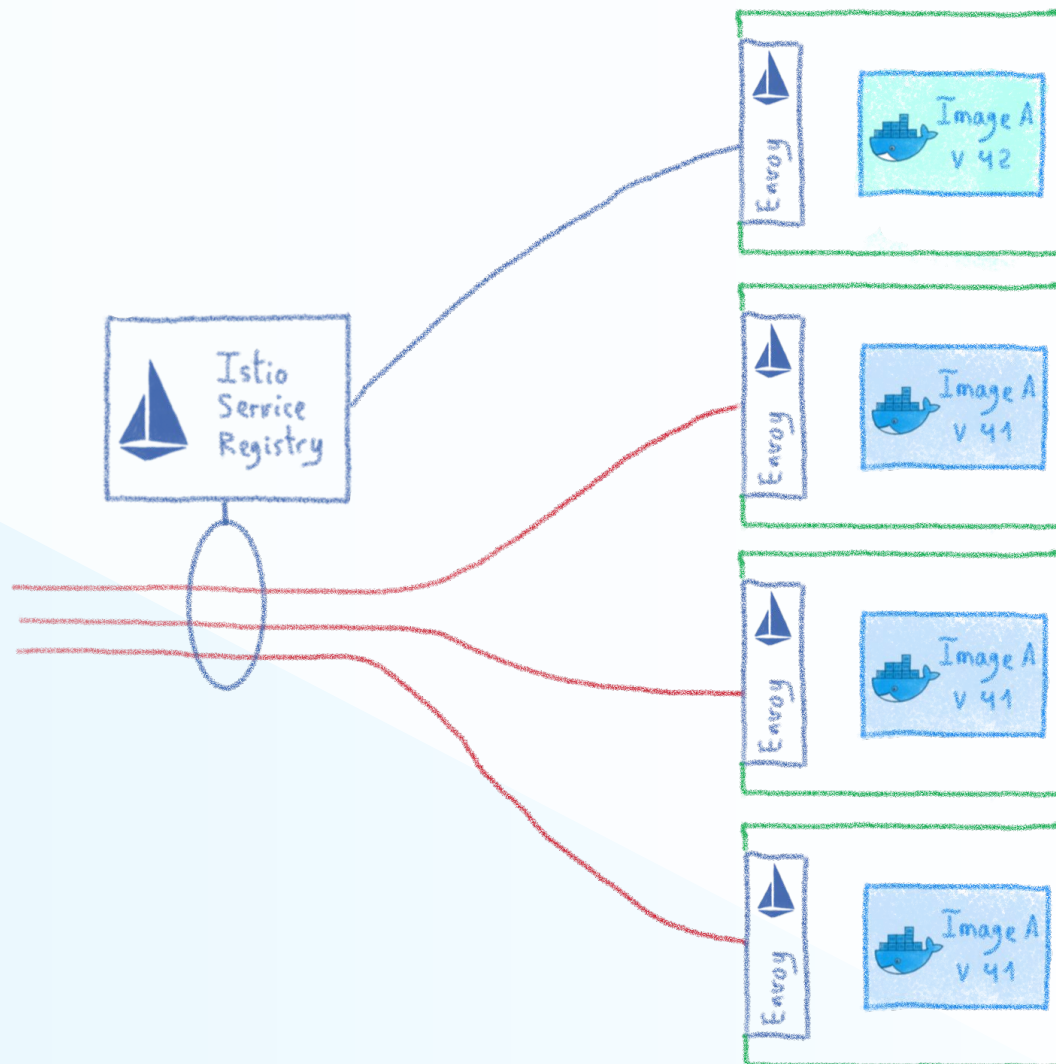
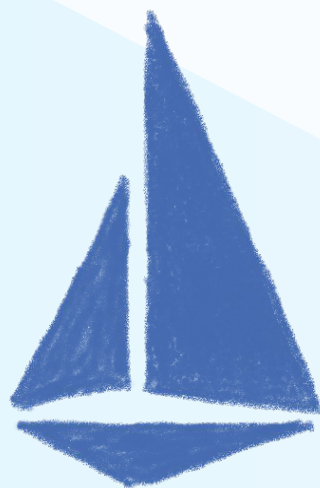
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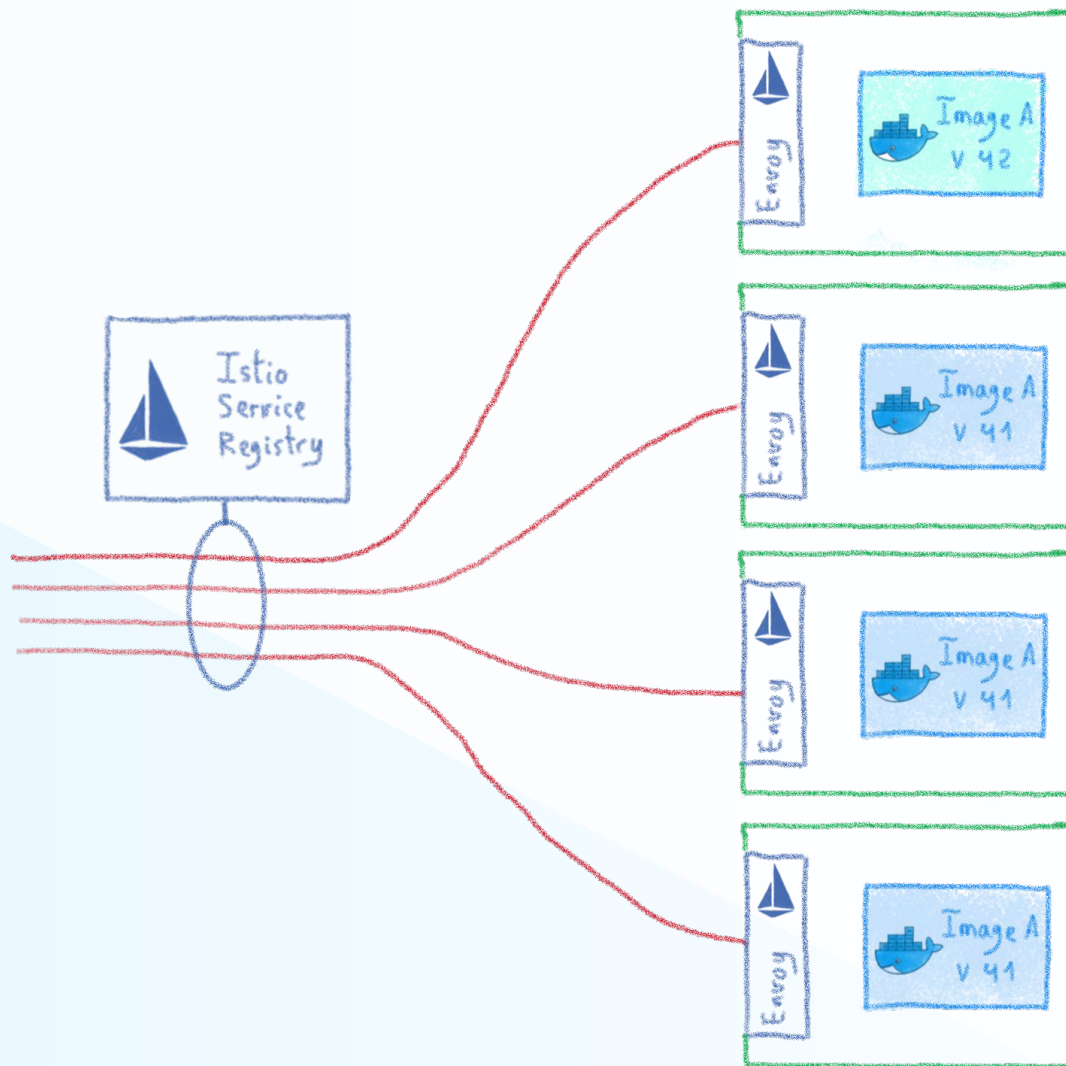
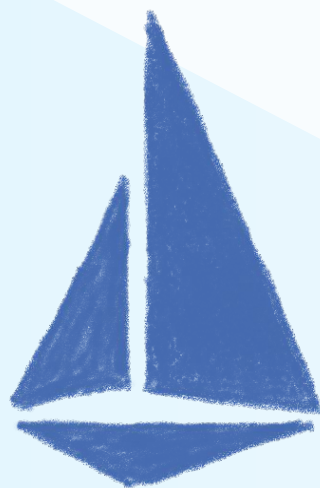
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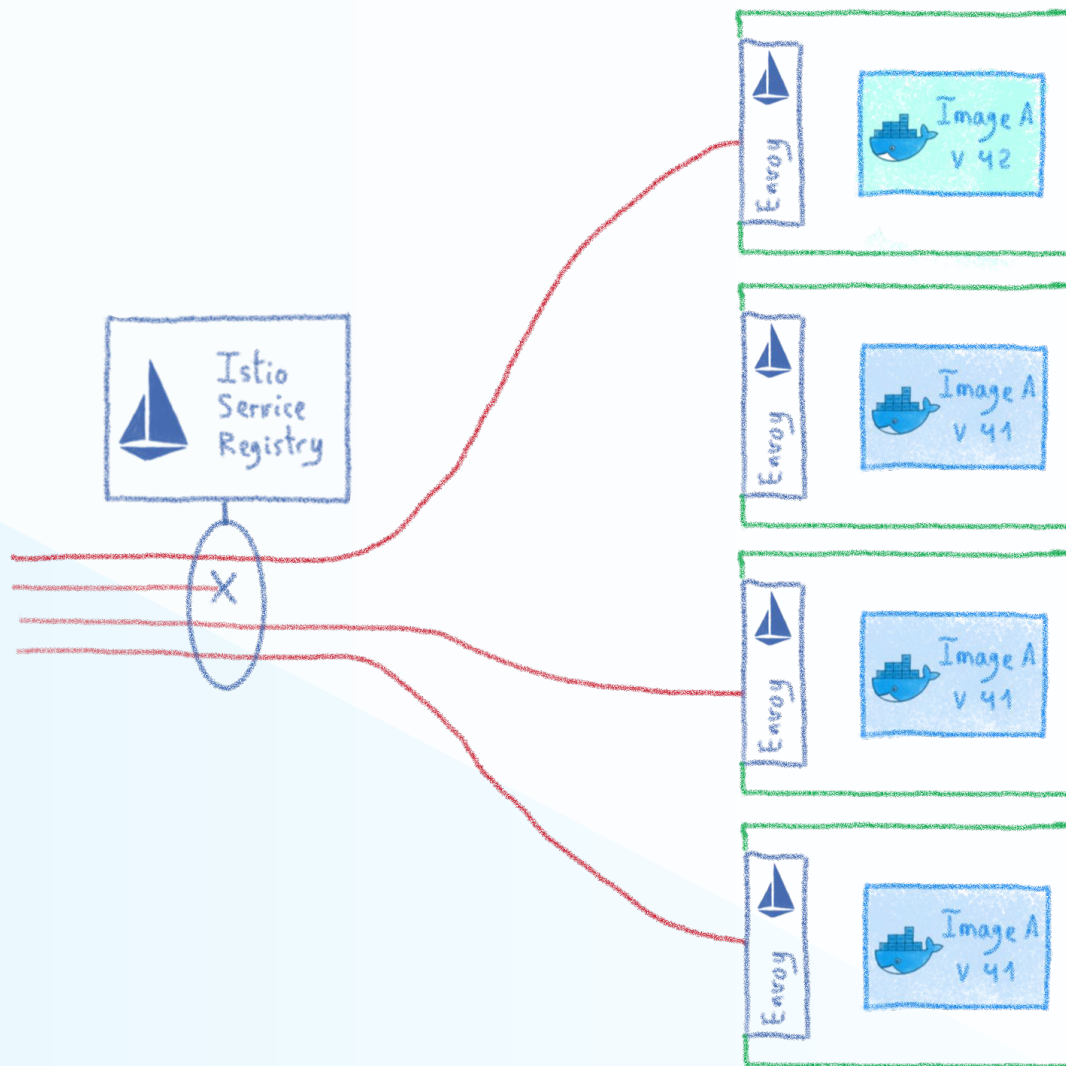
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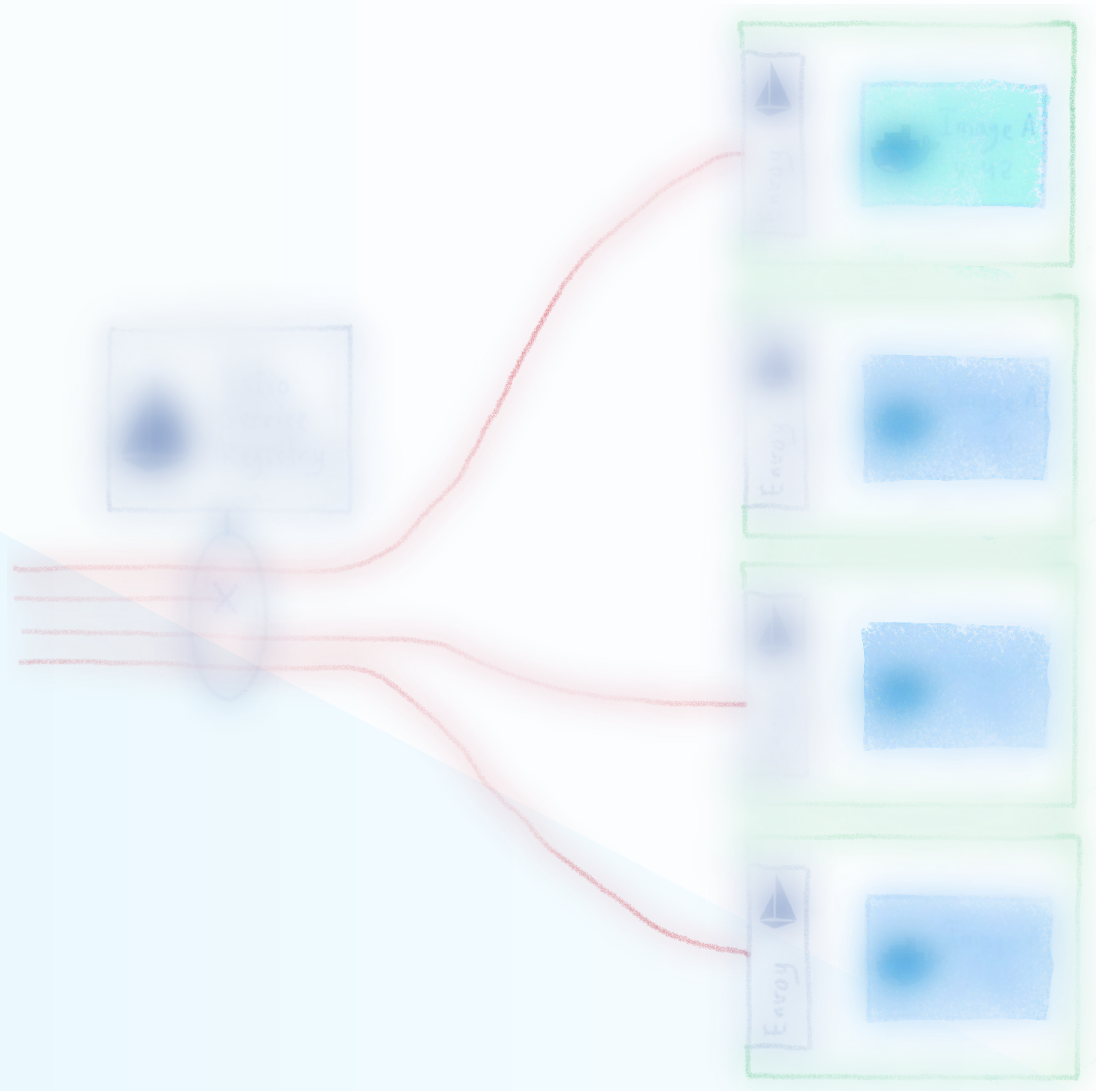
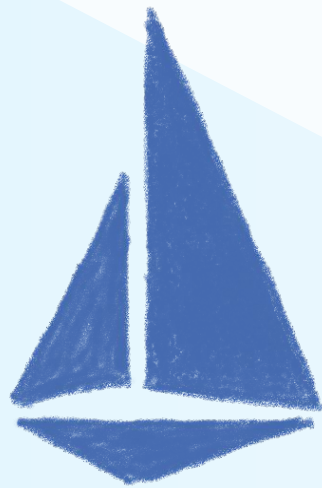
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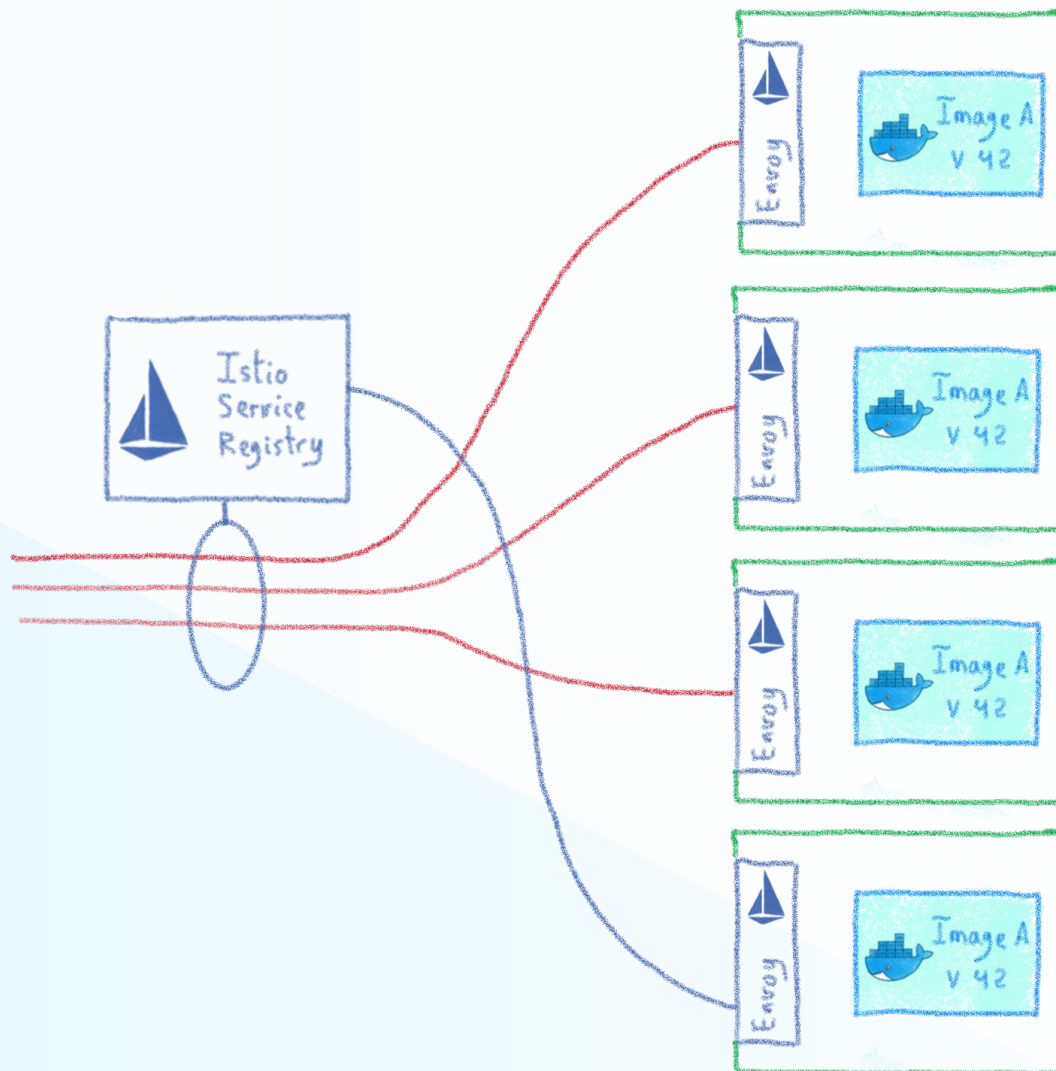
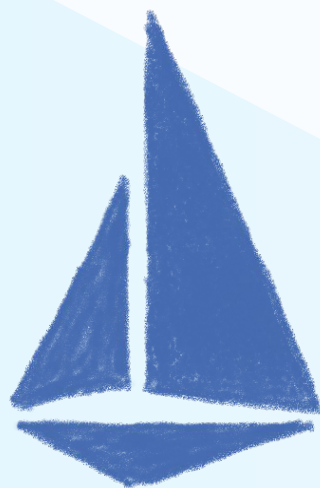


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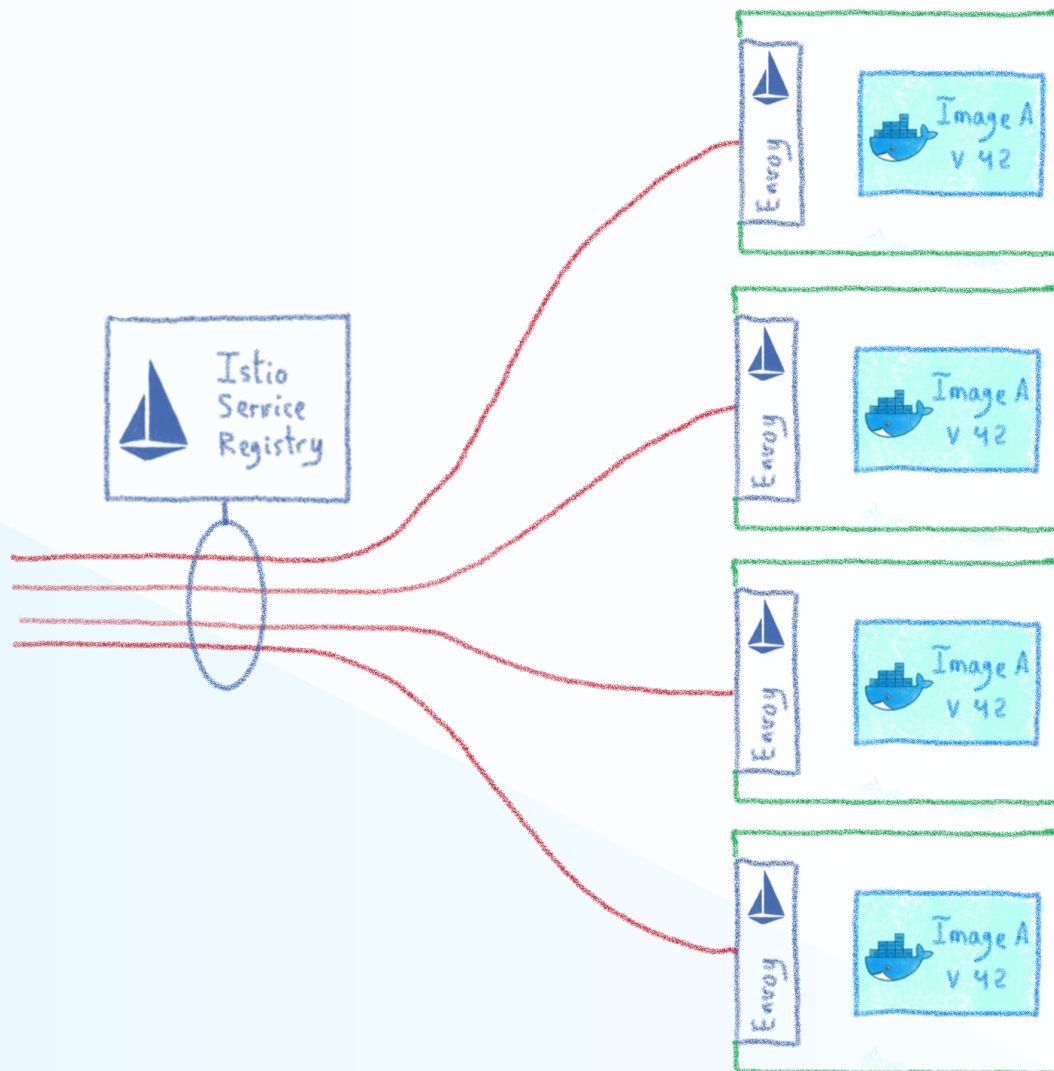
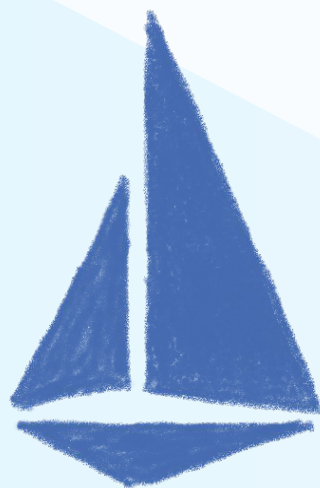
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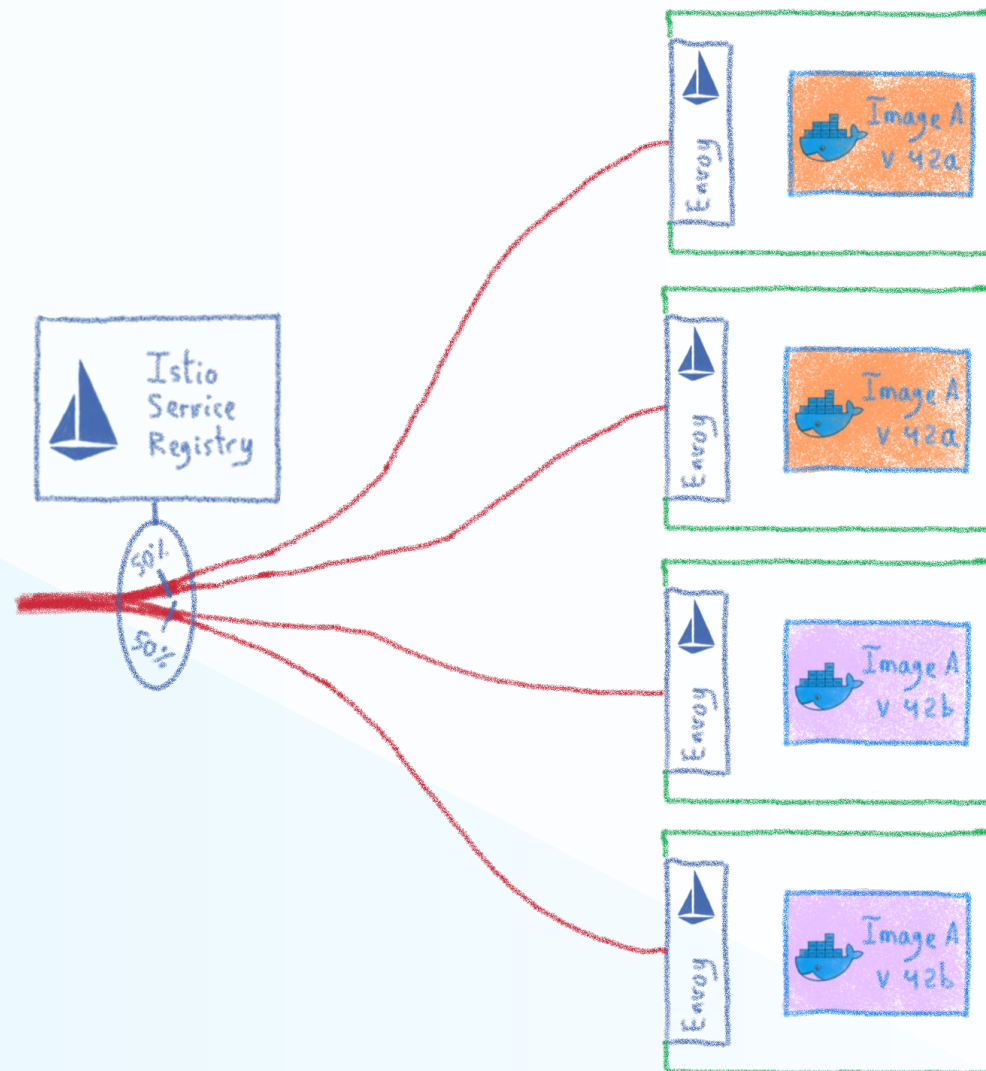
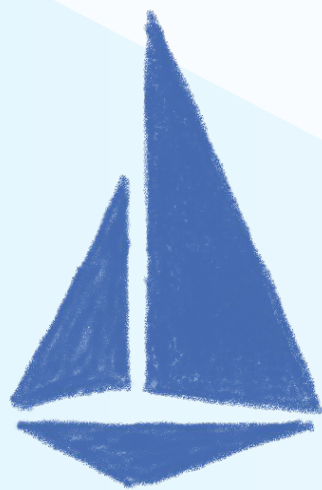


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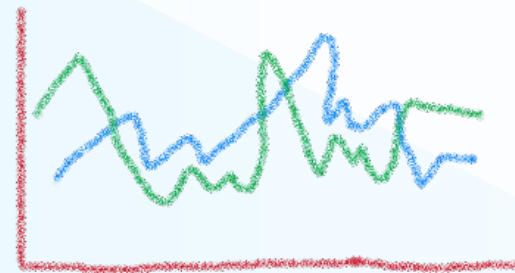
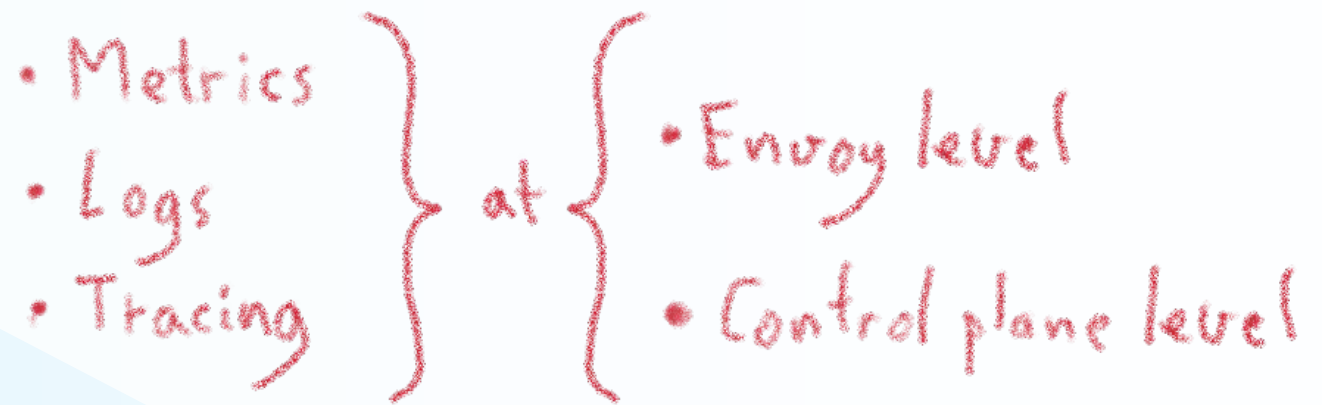
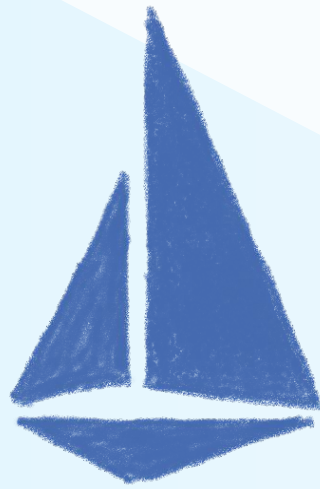
# A/B testing



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# Monitoring your cluster



Dashboards



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# Velero

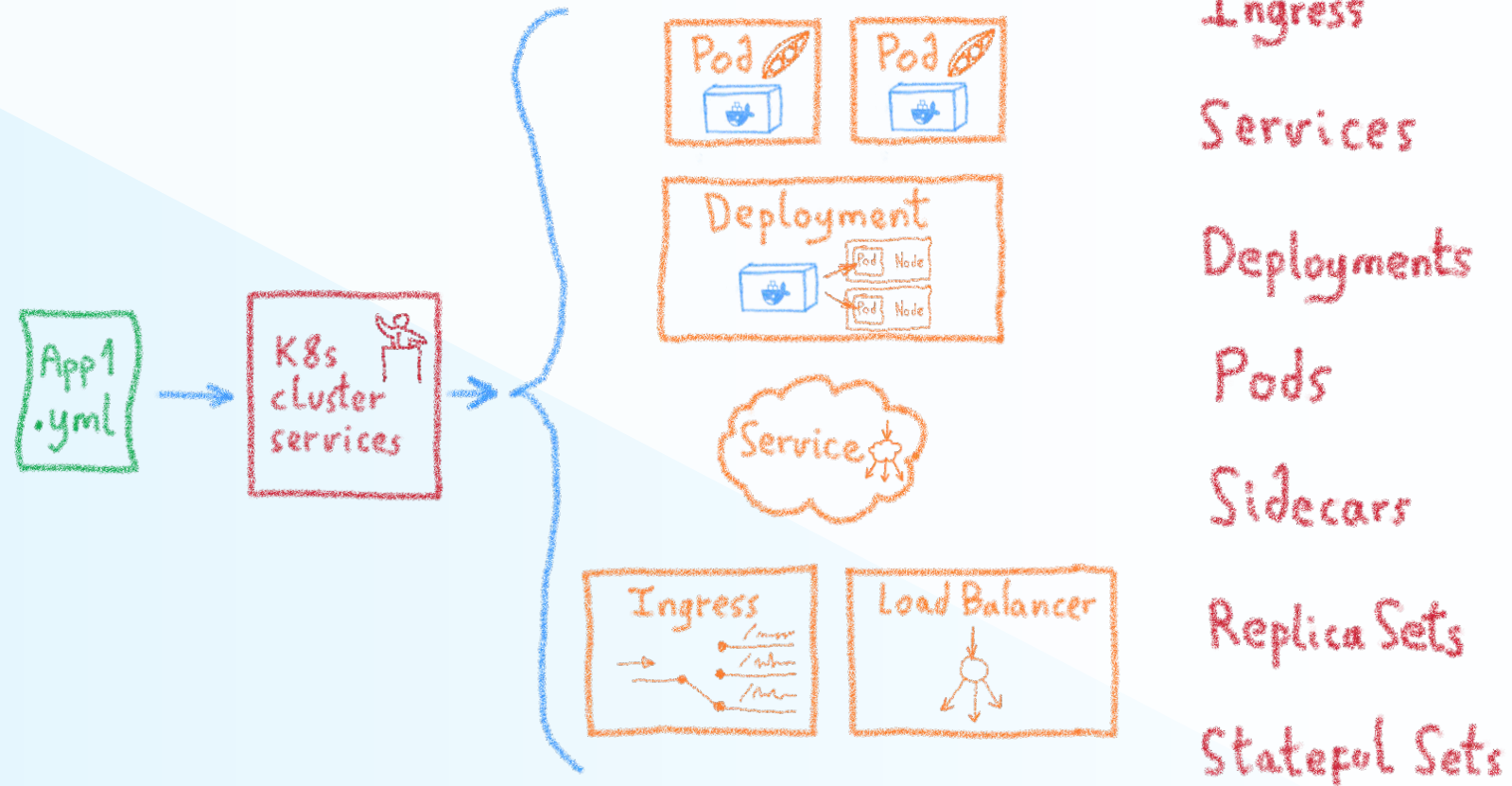
## Backing up your Kubernetes



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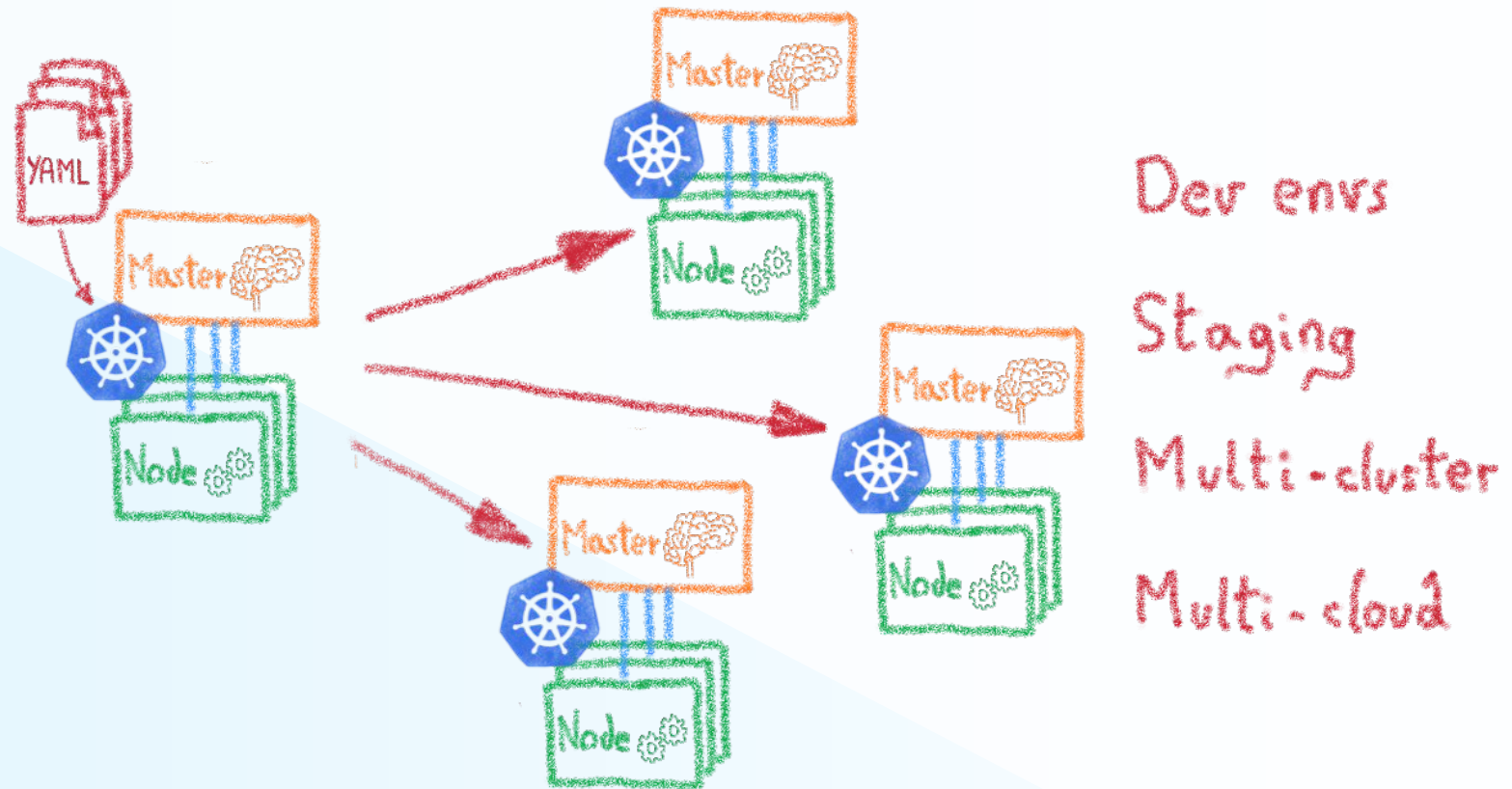
# Kubernetes: Desired State Management



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# YAML files allows to clone a cluster

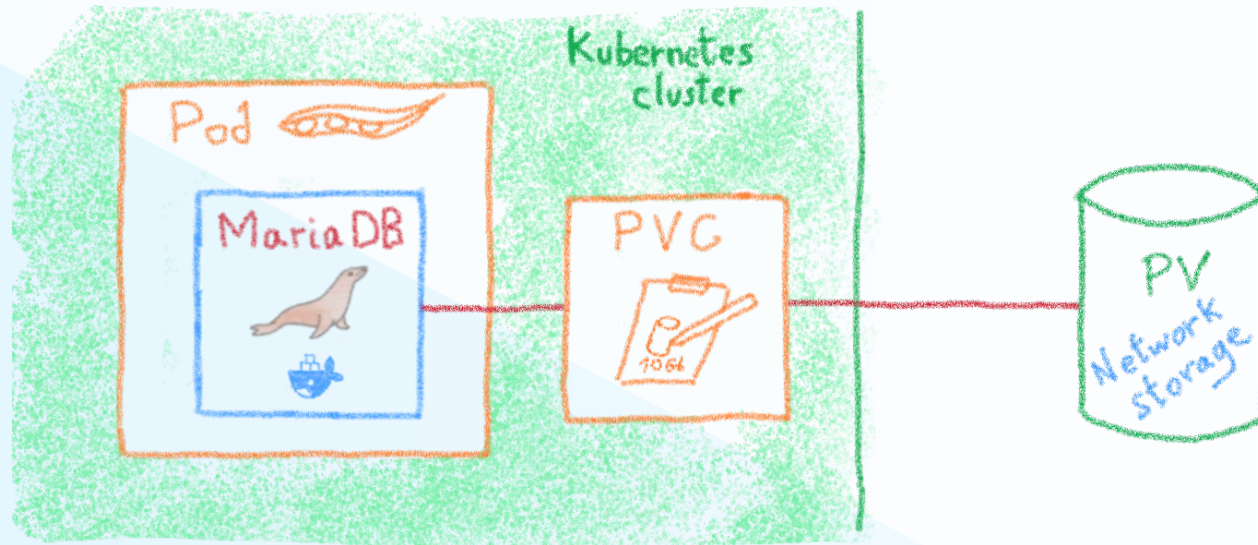


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# But what about the data?



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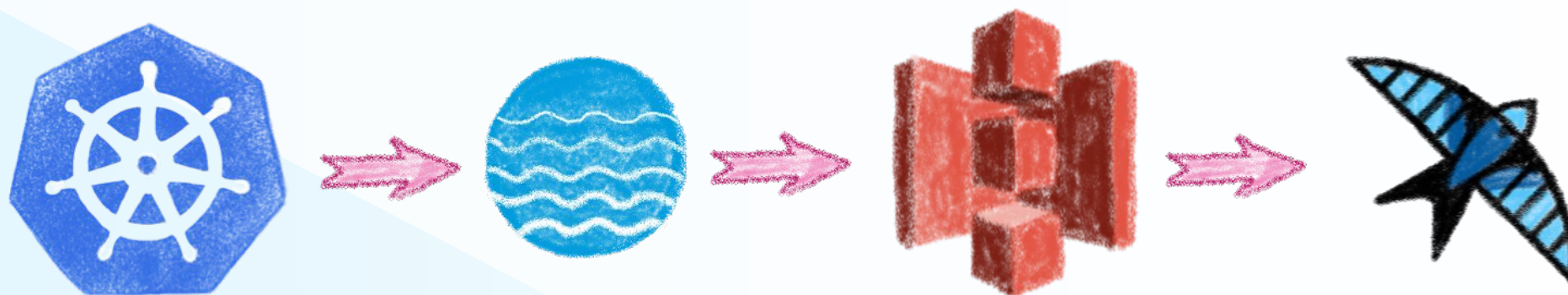
Backup and migrate Kubernetes applications  
and their persistent volumes



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# S3 based backup



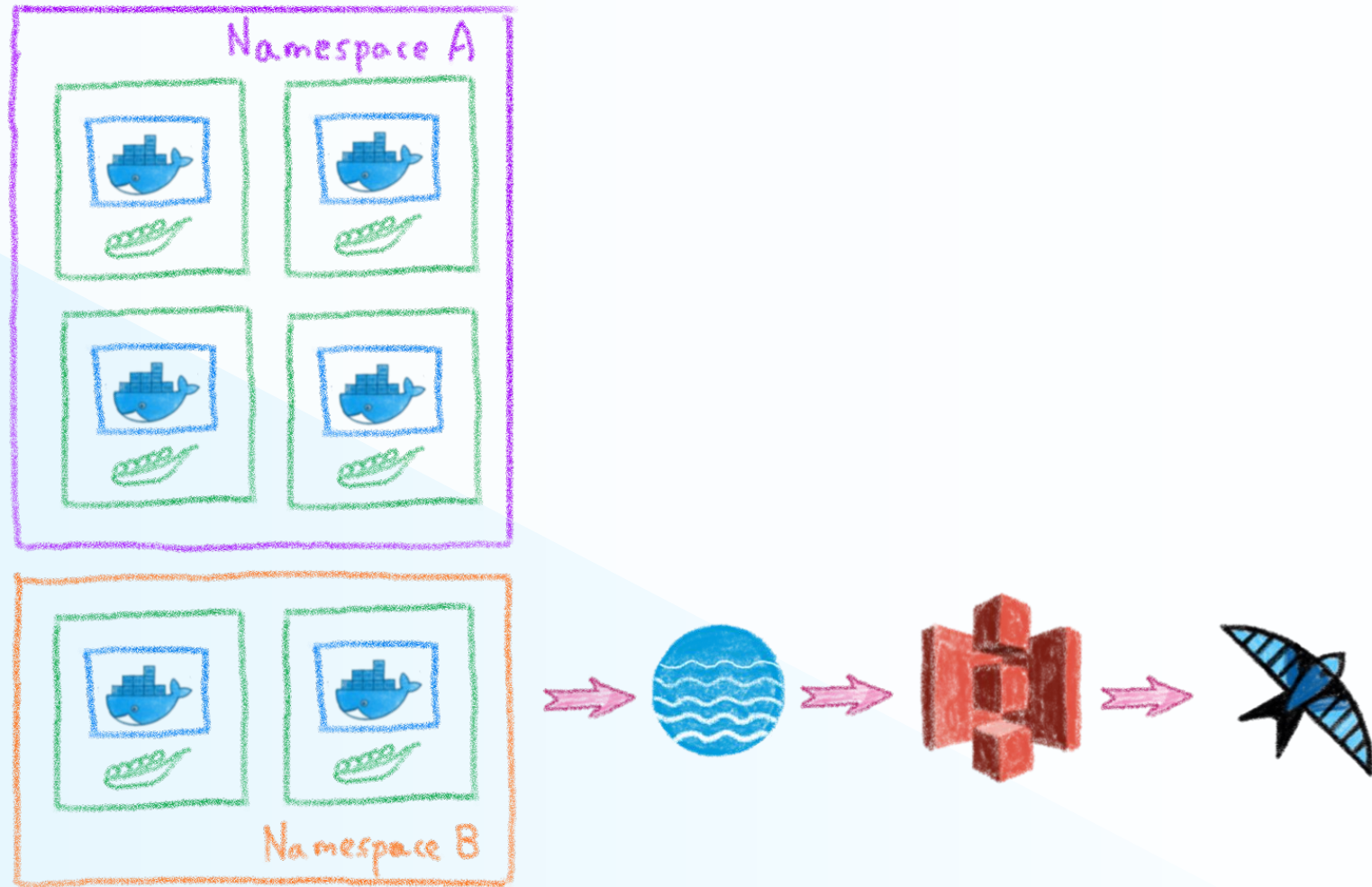
On any S3 protocol compatible store



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# Backup all or part of a cluster



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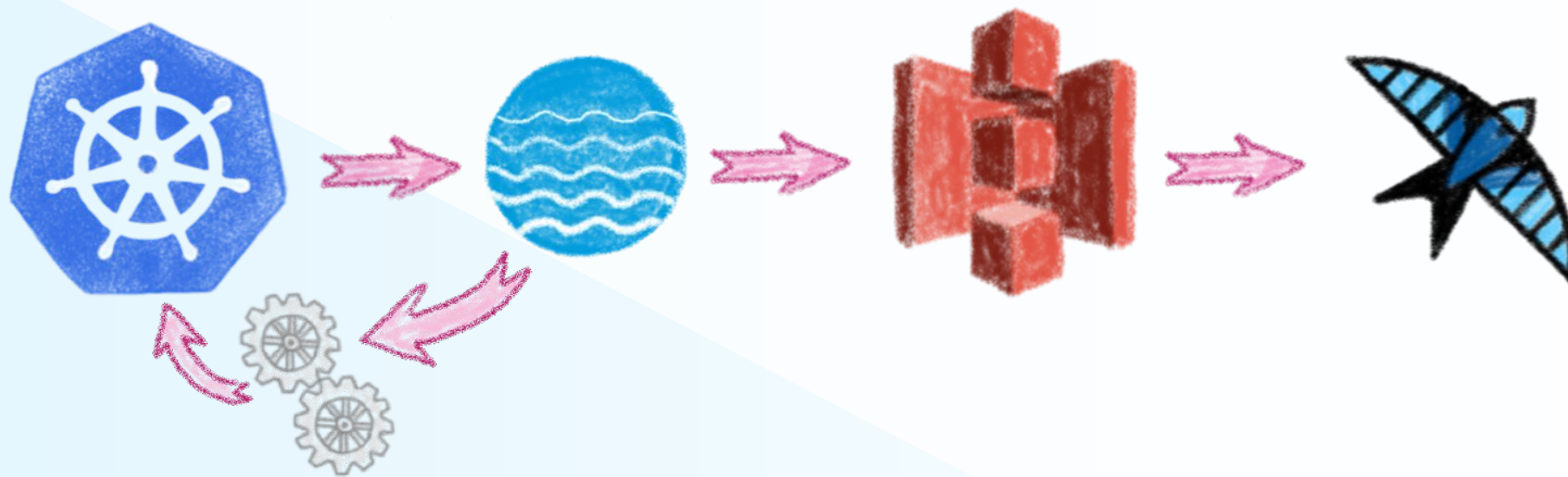
# Schedule backups



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# Backups hooks



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# Conclusion

And one more thing...

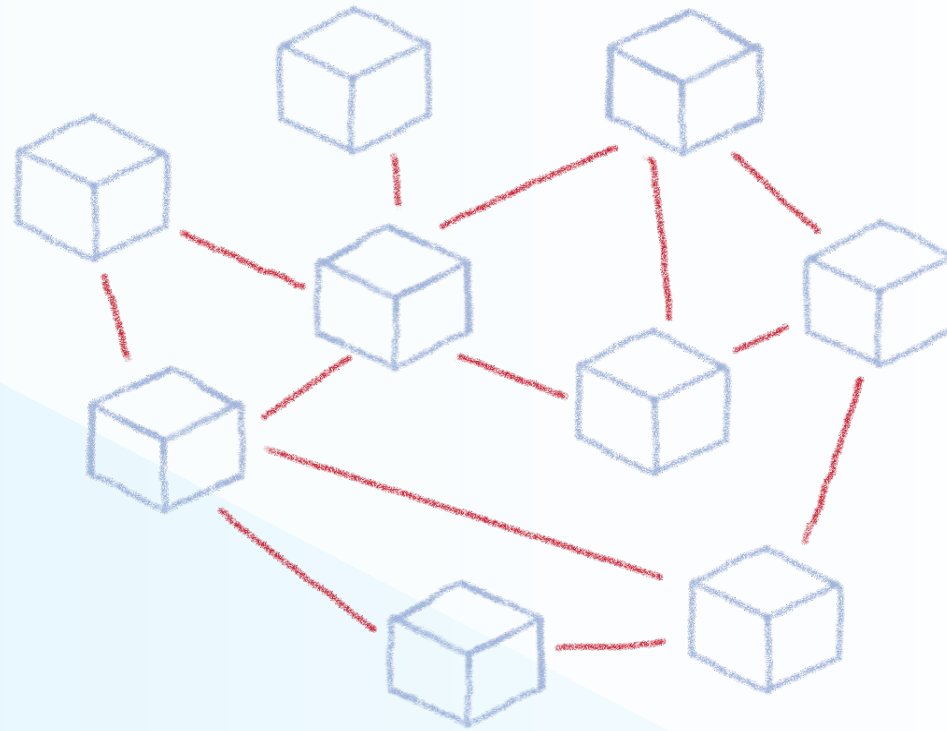


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# Kubernetes is powerful



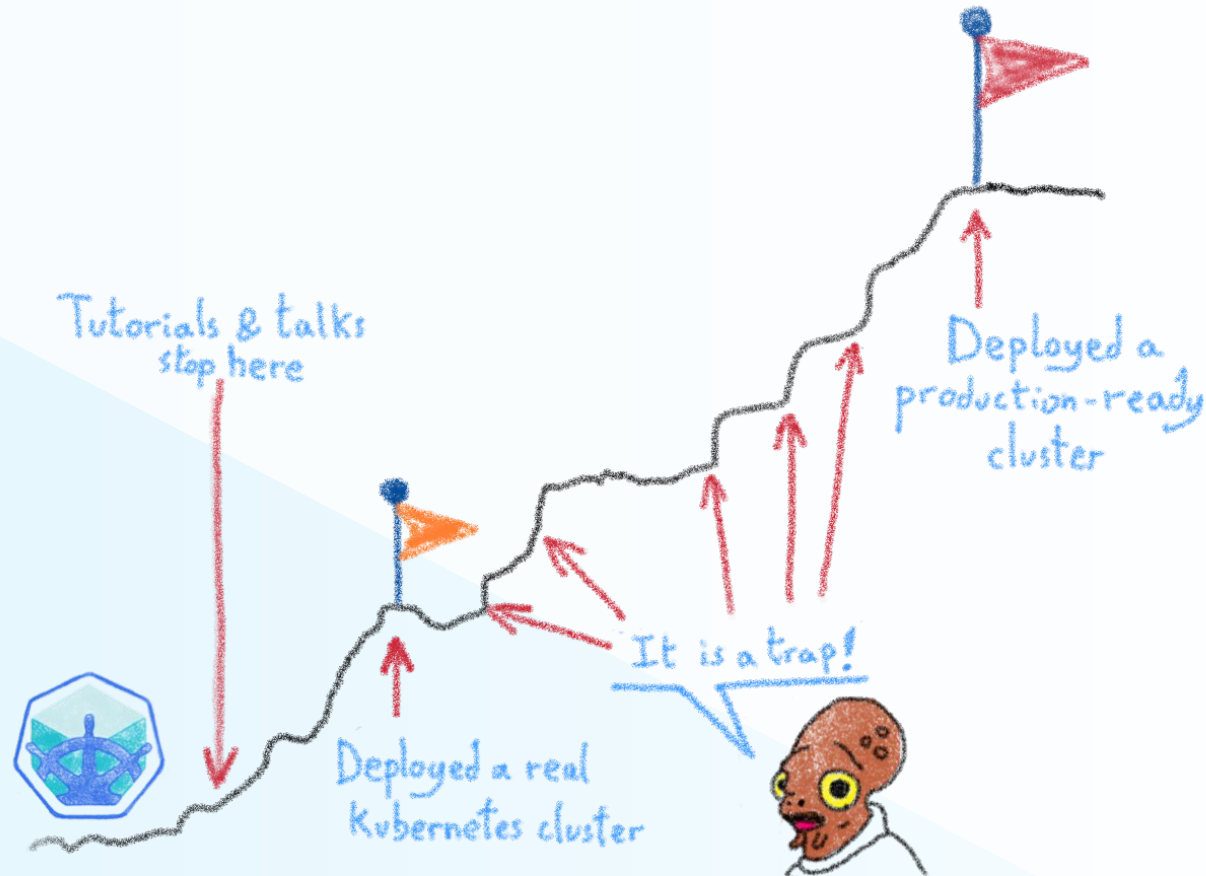
It can make Developers' and DevOps' lives easier



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# But there is a price: operating it



## Lot of things to think about



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# We have seen some of them

-  Security
-  Deployment
-  Monitoring
-  Backups



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# One more thing...

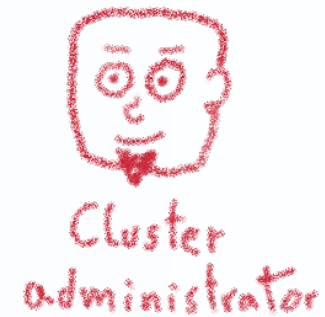
## Who should do what?



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# Different roles



Each role asks for very different knowledge and skill sets



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# Most companies don't need to operate the clusters



Developer



Cluster administrator

As they don't build and rack their own servers!

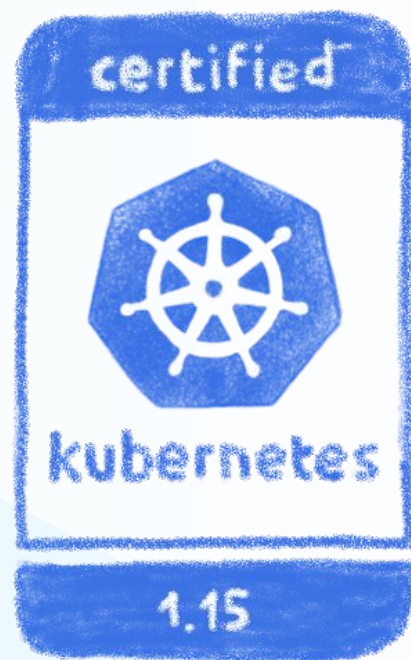


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If you don't need to build it,  
choose a certified managed solution



You get the cluster, the operator  
get the problems



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# Like our OVH Managed Kubernetes



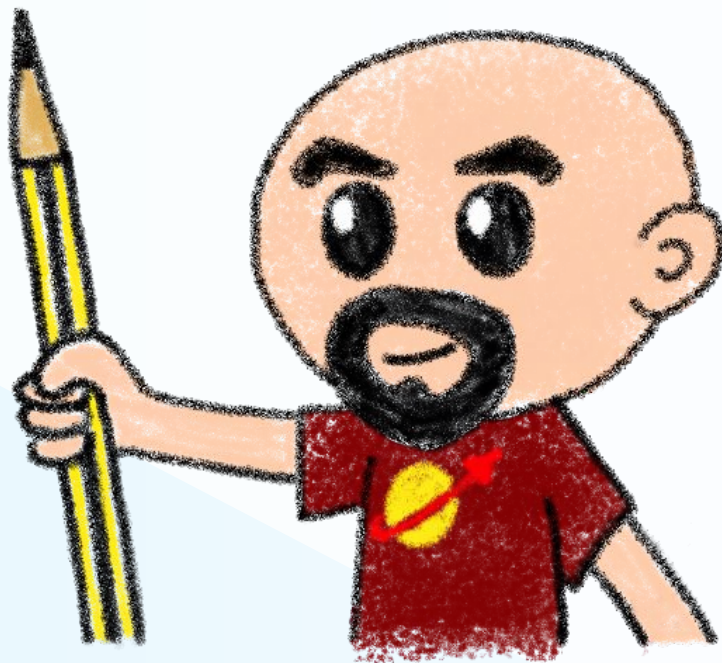
Made with ❤️ by the Platform team



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# Do you want to try?



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# Thank you for listening

## Any Question



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