





# REMERCIEMENTS





# ON SE LANCE

UN SUJET À PARTAGER  
UN RETOUR D'EXPÉRIENCE  
UN ATELIER

N'HÉSITEZ PAS À REVENIR VERS NOUS



## NOUS SUIVRE

[HTTPS://CAFEDEVOPS.ORG/](https://cafedevops.org/)

[HTTPS://TWITTER.COM/CAFEDEVOPSLYON](https://twitter.com/cafedevopslyon)

[HTTPS://WWW.MEETUP.COM/FR-FR/CAFE-DEVOPS-LYON/](https://www.meetup.com/fr-fr/cafe-devops-lyon/)

[CONTACT@CAFEDEVOPS.ORG](mailto:CONTACT@CAFEDEVOPS.ORG)

# Kubernetes, Attention aux apprentis magiciens

(source disney)



# Orchestrator (source PLACE DES ARTS)

@\_louidji



🔥 A FOND 🔥  
(source Caters News Agency)



A scene from Disney's Alice in Wonderland. Alice is standing in the middle ground, looking up at a large red tree trunk. The trunk is covered in small white flags pointing in various directions, each with a different word like "UP", "DOWN", "THAT WAY", and "YONDER". In the background, there are more trees and foliage. Overlaid on the image are several white lines forming a network or mesh, connecting points on the trees and the sky.

# VERS OÙ ?

(source DYSNEY)



# ABOUT ME!

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@\_louidji

1.

# Vos applications font parties de votre SI

Une approche systémique du SI



**UN SI HOMOGÈNE ?**  
**(source disney)**

# ... DU MAINFRAME (source technikum29)



https://9.98.37.116:16316.ibm/console/login.do?action=secure

Welcome wasadmin | Help | Logout IBM

WebSphere software

View: All tasks

- Welcome
- Guided Activities
- Servers
- Applications
- Services
- Resources
- Security**
  - Global security
  - Security domains
  - Administrative Authorization Groups
  - SSL certificate and key management
  - Security auditing
  - Bus security
- Environment
- System administration
- Users and Groups
- Monitoring and Tuning
- Troubleshooting
- Service integration
- UDDI

Cell=JazzSMNode01Cell, Profile=JazzSMProfile

SSL certificate and key management

[SSL certificate and key management](#) > [Key stores and certificates](#) > [NodeDefaultRootStore](#)

Defines keystore types, including cryptography, RACF(R), CMS, Java(TM), and all truststore types.

**General Properties**

Name: NodeDefaultRootStore

Description: Root certificate key store for JazzSMNode01

Management scope: (cell):JazzSMNode01Cell:(node):JazzSMNode01

Path: \${CONFIG\_ROOT}/cells/JazzSMNode01Cell/nodes/JazzSMNode01/root-key.p12

Password: (empty)

Type: PKCS12

Initialize at startup

Enable cryptographic operations on hardware device

Apply OK Reset Cancel

... [J(2)EE | SPRING] plus ou moins âgée  
(source IBM)

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Time Redeploying in an Hour

Minutes	Respondents (%)
<1	3%
1-5	34%
6-10	30%
11-15	14%
16-20	8%
21-25	5%
26-30	1%
30+	5%

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animés par la passion>

... MICROSOFT  
(source IMDb)



# The TWILIGHT ZONE.NET

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... SURVIVOR  
(source fondation Berliet)



... ECOSYSTEME IMBRIQUÉ  
(source Louis Tournayre)



... ECOSYSTEME INADAPTÉ  
(source thumuaphelieutaihanoi)

2.

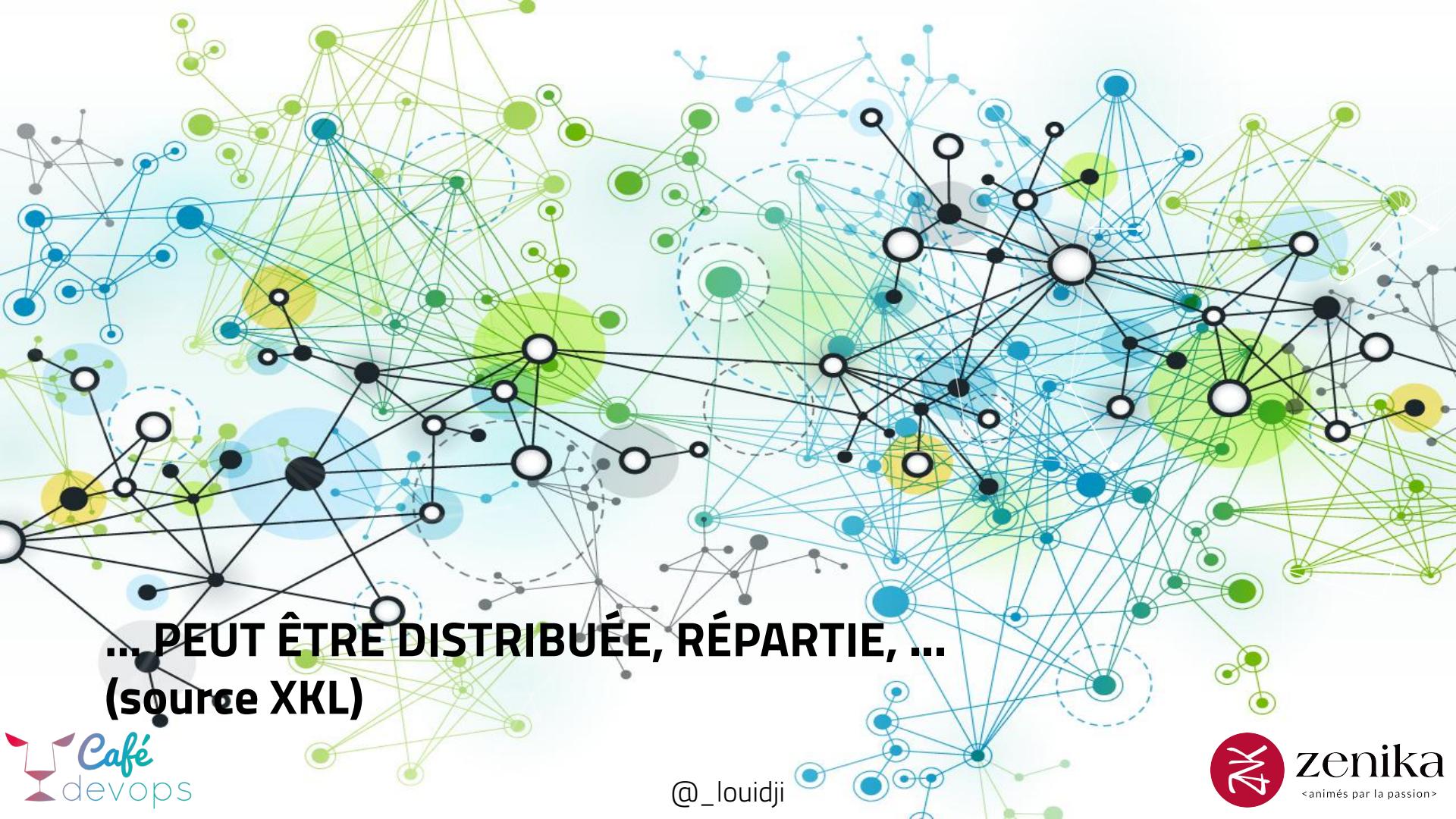
# Application “kube friendly” ?

(ou cloud native ou du bétail...)



... DOCKER EVERYWHERE  
(source signify technology)

@\_louidji



**... PEUT ÊTRE DISTRIBUÉE, RÉPARTIE, ...**  
**(source XKL)**

# STATEFUL OR NOT STATEFUL ?

Kelsey Hightower @kelseyhightower

To be clear Kubernetes does support stateful workloads. Kubernetes has StatefulSets, Volumes, and many other features to ease the burden of running stateful workloads. But you still require expertise to effectively manage stateful services on Kubernetes.

[Traduire le Tweet](#)

Alex DeBrie @alexbdebrie · 13 févr. 2018  
En réponse à @kelseyhightower

True. Do you run them via hosted services from cloud providers? And does this mean K8s / Heroku / FaaS are all just fighting over the stateless, 12 factor apps, while the stateful stuff is handled elsewhere?

3:29 PM · 13 févr. 2018 · Twitter Web Client

21 Retweets 78 J'aime

Alex DeBrie @alexbdebrie · 13 févr. 2018  
En réponse à @kelseyhightower

Yea. Will it always be true that managing stateful services on K8s requires expertise? Can that be abstracted correctly? And if not, is the future "use hosted state, then Bring-Your-Own-PaaS for stateless apps? Heroku was right all along ... 😊

1 2

Kelsey Hightower @kelseyhightower · 13 févr. 2018  
Managing stateful services anywhere will require expertise. Cloud providers do this by imposing limitations and controlling the stack from the hardware up. You can do it too; with the right expertise.

Kelsey Hightower @kelseyhightower

Kubernetes has made huge improvements in the ability to run stateful workloads including databases and message queues, but I still prefer not to run them on Kubernetes.

[Traduire le Tweet](#)

3:04 PM · 13 févr. 2018 · Twitter Web Client

304 Retweets 709 J'aime

Kelsey Hightower @kelseyhightower · 13 févr. 2018  
En réponse à @kelseyhightower

Kubernetes can only meet stateful workloads half way and I lack the expertise to manage a production configuration of Kafka, RabbitMQ, or Postgres on static infrastructure, let alone a Kubernetes cluster.

2 18 73

Kelsey Hightower @kelseyhightower · 13 févr. 2018

Kubernetes makes it easier to deploy stateful services not manage them. Stateful services must meet Kubernetes half way and manage their own cluster membership, failover, and replication. CockroachDB and Consul are two great examples, but far from perfect.

6 23 90

Kelsey Hightower @kelseyhightower · 13 févr. 2018

Even when stateful services do the right things managing state is still hard. Mixing stateful and stateless applications on the same cluster elevates the complexity of the entire cluster. Cluster security and upgrades become much harder.

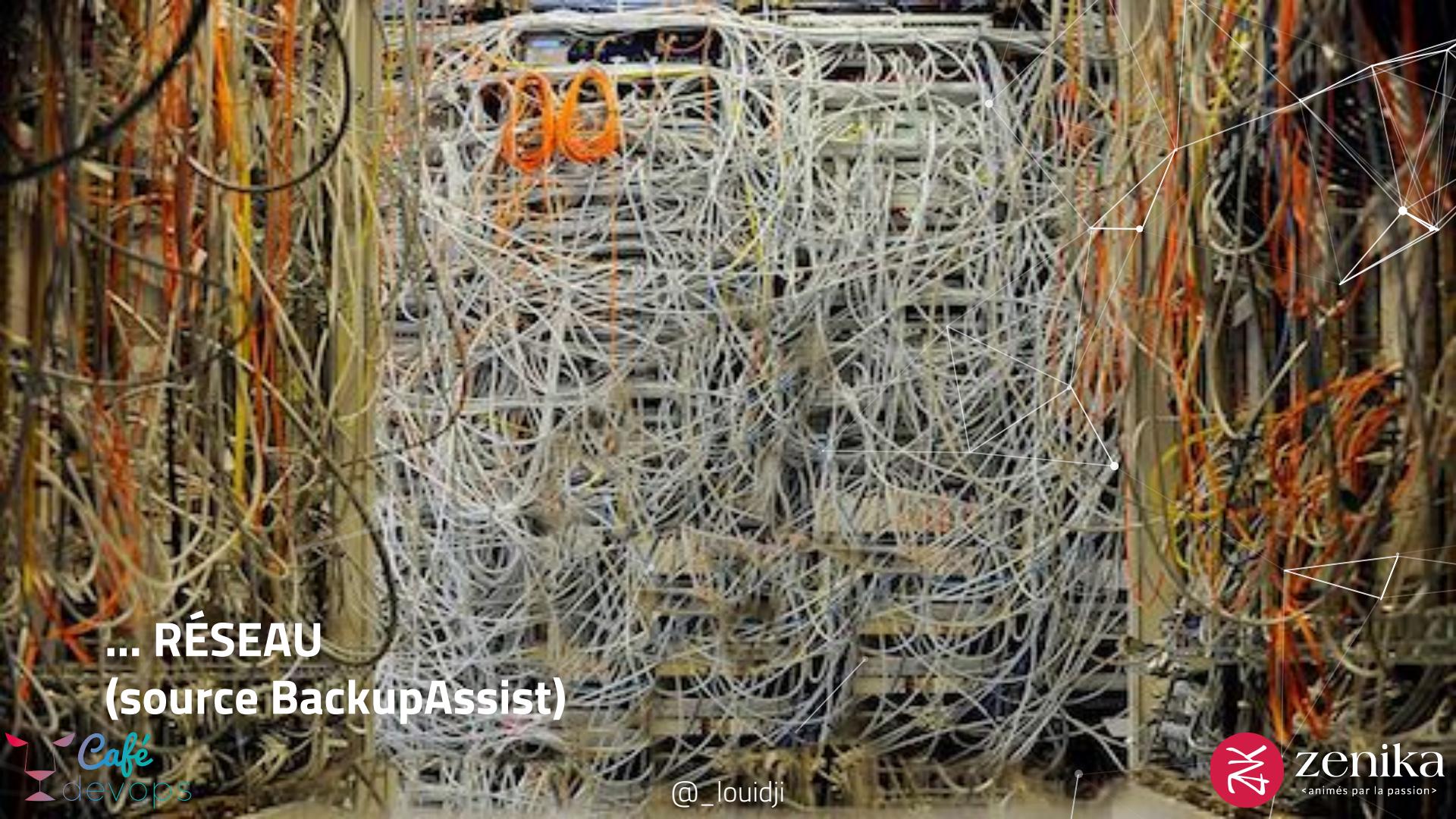
3 15 66

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... RÉSEAU  
(source BackupAssist)



... MONITORABLE  
(source NASA)

... SÉCURITÉ  
(source behance.net)

# HACK SOCIETY

MR.ROBOT

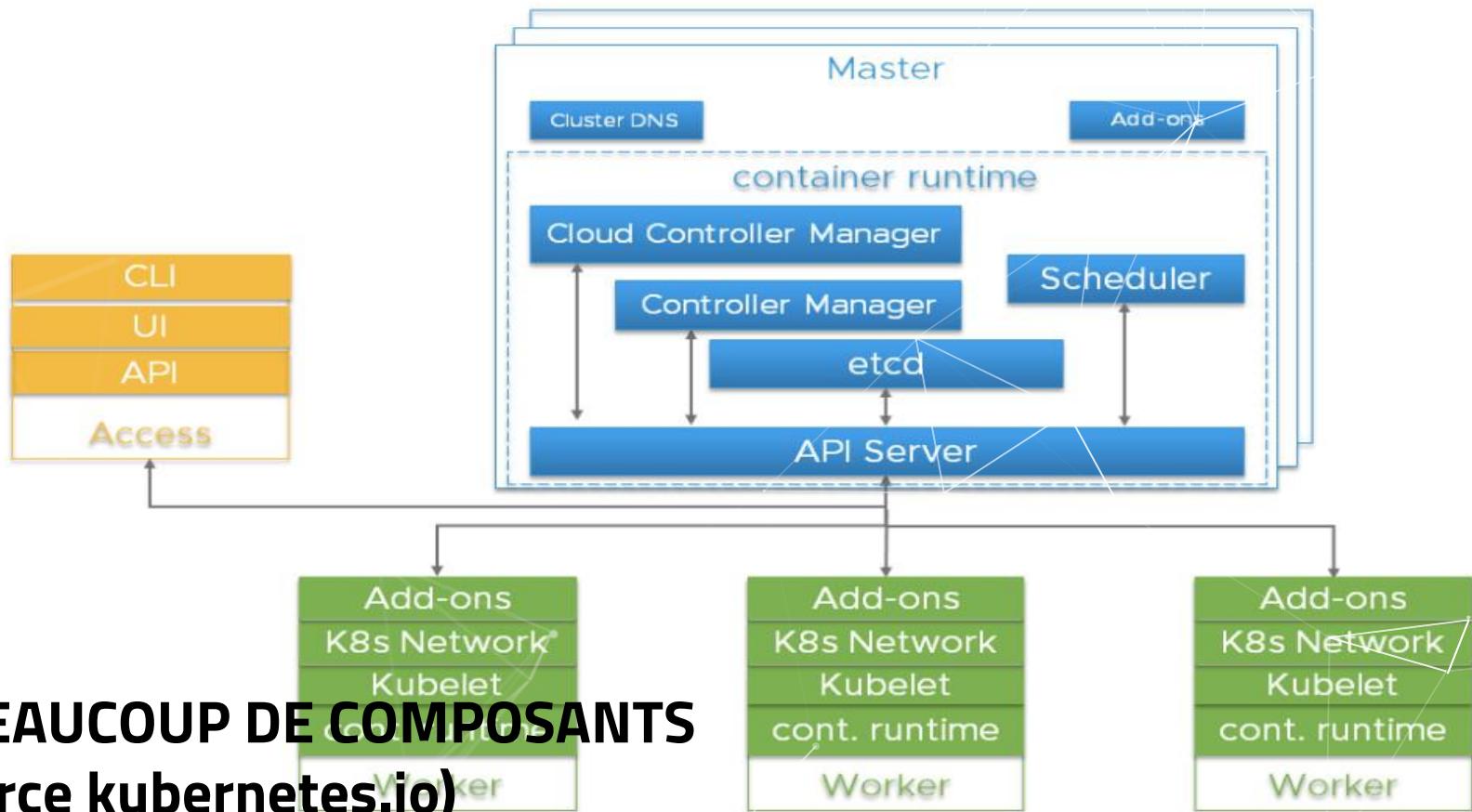
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# 3. Supervision du cluster kube

K8S monitore vos application, qui monitore K8S ?



**... BEAUCOUP DE COMPOSANTS**  
 (source [kubernetes.io](https://kubernetes.io))



(source Michael Maggs, wikipedia)

@\_loujdji

4.

# Kube peut/va tomber en panne

Comment allez vous gérer ces pannes ?



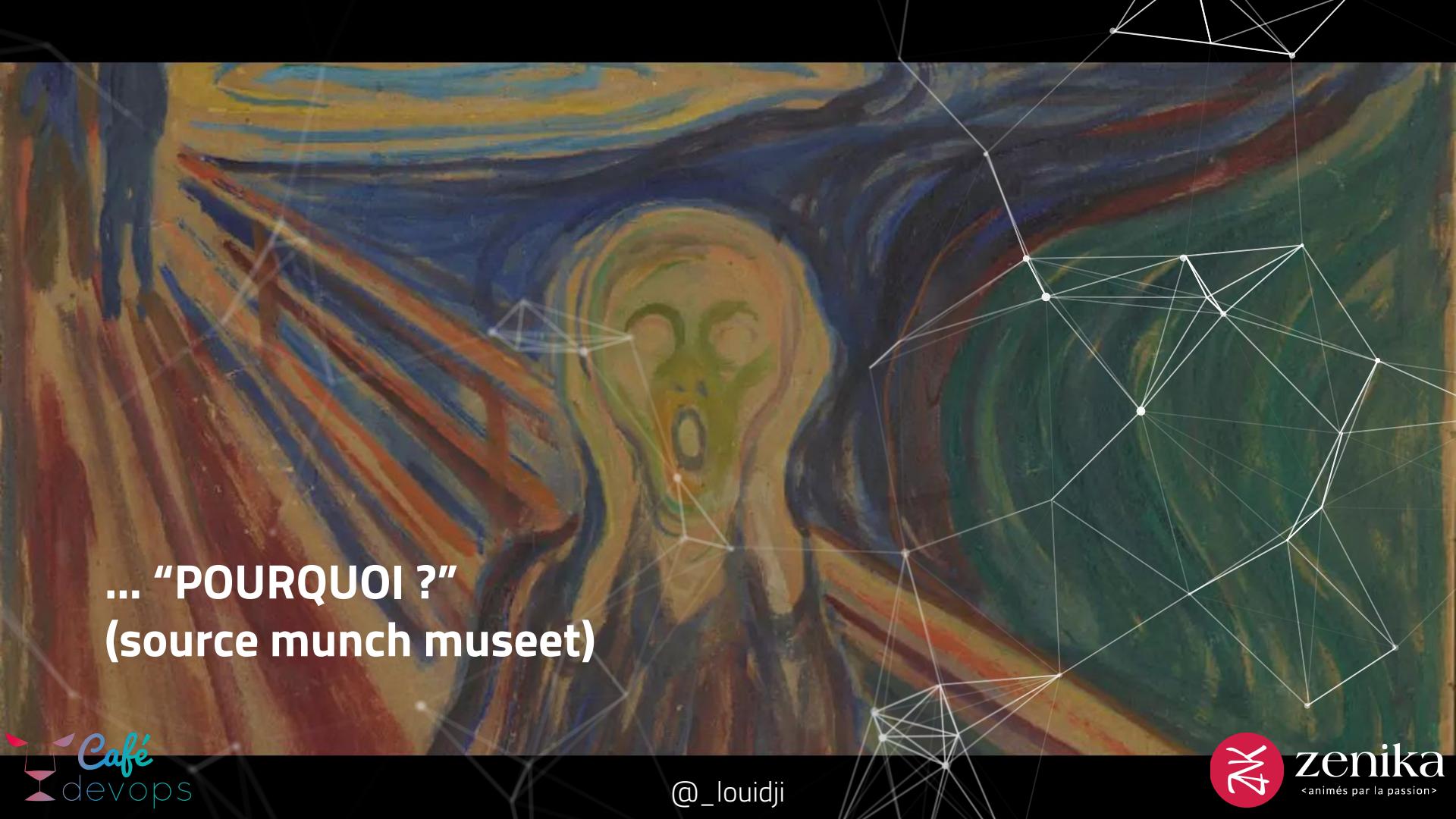
... "HOPE IS NOT A STRATEGY"  
(source wikipedia)

@\_louidy

5.

# Mise à jours





... "POURQUOI ?"  
**(source munch museet)**



**... "J'ADORE QUAND UN PLAN SE  
DÉROULE SANS ACCROC !"**

(source wikipedia)

@\_louidji

# EN RÉSUMÉ ET EN "BONU\$"



Attention au golden hammer, tout n'est pas kube



Les pannes, cela arrive, des fois



Suivez le modèle des "Twelve-Factor App"



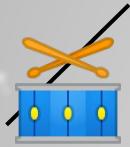
Mettez à jours régulièrement



Monitoring, monitoring et monitoring



Et n'oubliez pas : Cela va nécessiter d'investir du temps et de l'argent



# COMMENT Y ALLER



Bien compris et bien utilisé Kube c'est top



Commencez simple



Démarrez avec du kube managé : GKE, OVH, Rancher, ...



Avec les bonnes pratiques et les bons outils

@\_louidji



Formez et accombez vos équipes (Ops, Dev, ...)

# QUELQUES LIENS (liste non-exhaustive)

[CNCF Cloud Native Interactive Landscape](#)

[Kubernetes Security - Best Practice Guide](#)

[Falco - Open Source Container Native Runtime Security](#)

[Harbor - Secure Registry](#)

[Velero - Backup and migrate Kubernetes applications...](#)

Monitoring & Log : [Datadog](#), [Zabbix](#), [Nagios](#), [Prometheus](#), [Grafana](#), [Fluend](#),  
[ELK](#), [Stackdriver](#) ...

[Rook - Storage Orchestrator for Kubernetes](#)

# MERCI !

Des questions ?

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@\_louidji