DevBcn

From Silos to DevOps to Platform Engineering

Embracing GitOps and going behind the hype

clever cloud

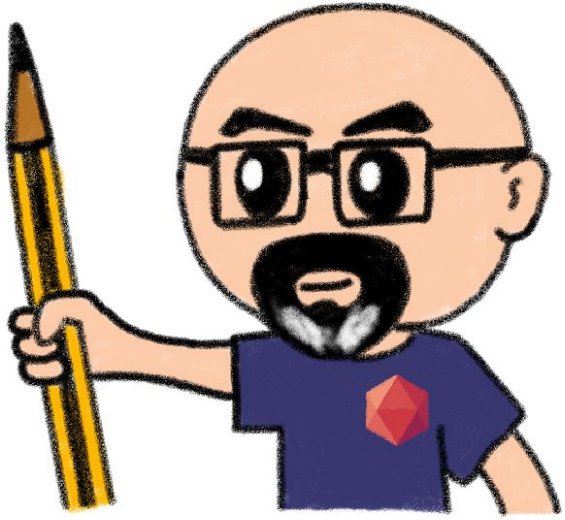
Horacio Gonzalez

Horacio Gonzalez

DevBcn

@LostInBrittany

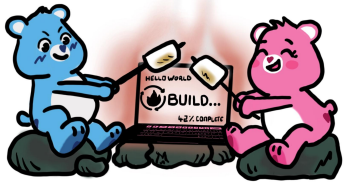
Spaniard Lost in Brittany



Head of DevRel

clever cloud

Finist Devs



DevBcn

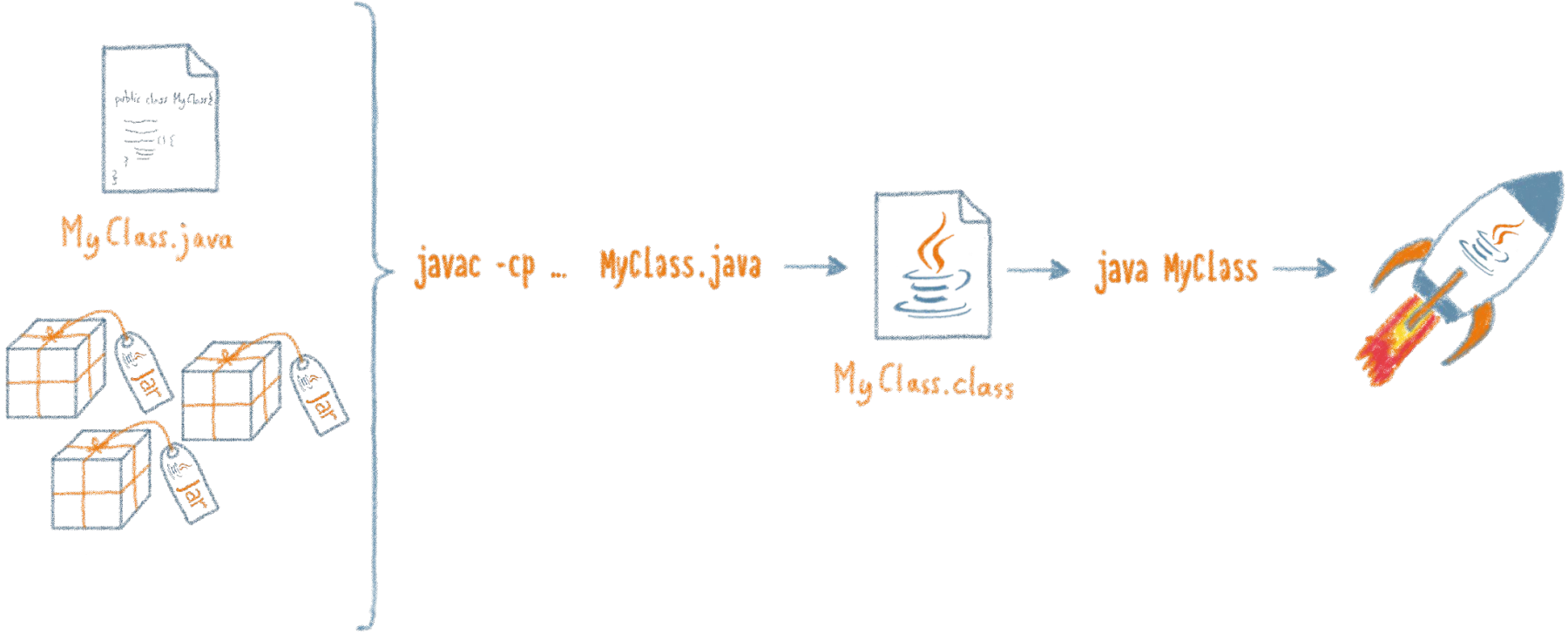
Adding layers of shiny complexity

Last 30 years in software development

clever cloud

@LostInBrittany

From write-compile-exec to Kubernetes

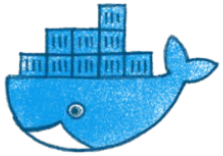


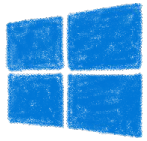
clever cloud

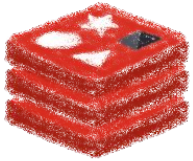
@LostInBrittany

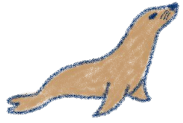
From write-compile-exec to Kubernetes

DevBcn







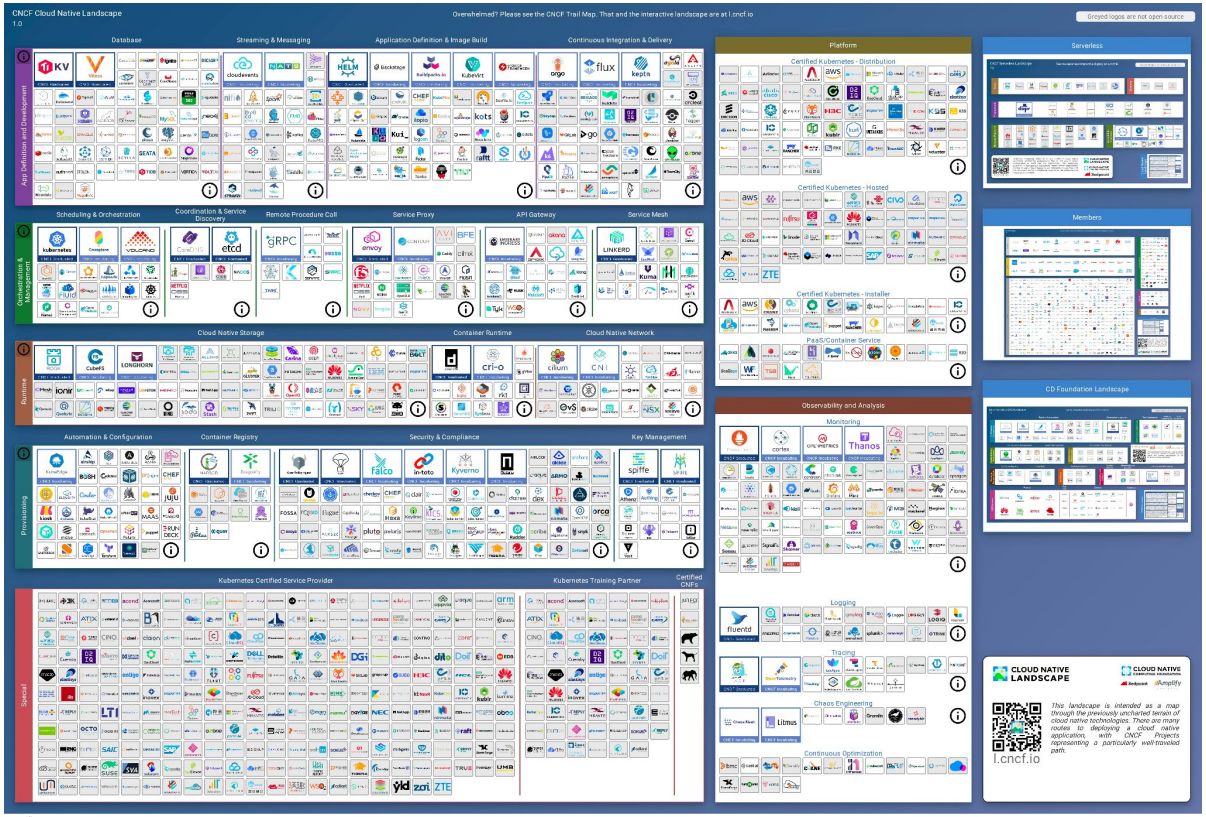


clever cloud

@LostInBrittany

If I were a student now, I would feel scared

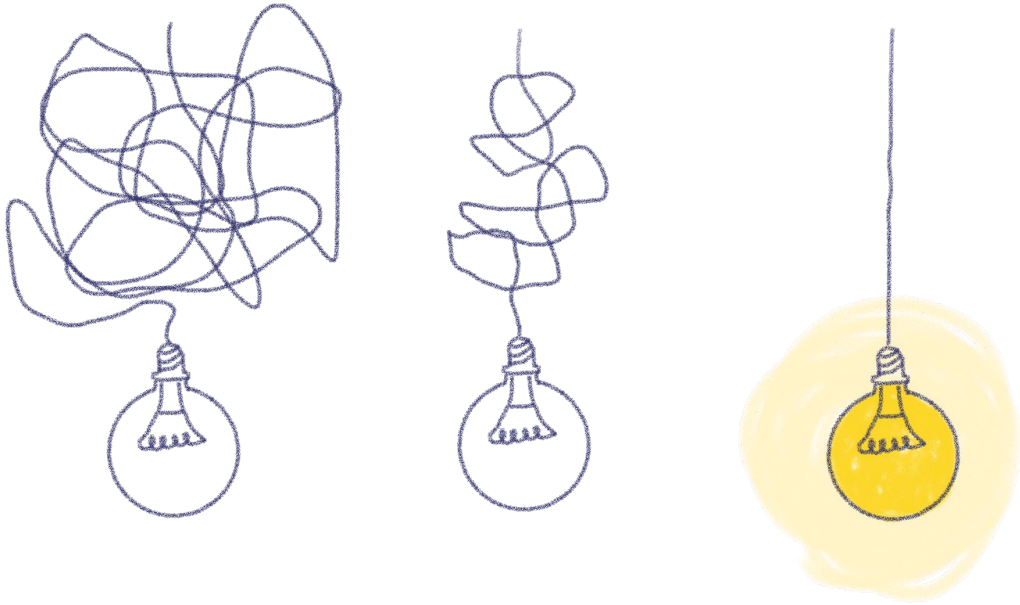
DevBcn



clever cloud

@LostInBrittany

Platform Engineering to the rescue



Empowering developers while reducing complexity

clever cloud

@LostInBrittany

IT in the 90s

Once upon a time...

In a time almost forgotten

When even internet was young...

When Windows 95 was the cutting edge

And a 100 Mb disk was huge…

Big companies still used mainframes

Bigger, fancier, but still the same old IBM

Bare-metal based IT reigned

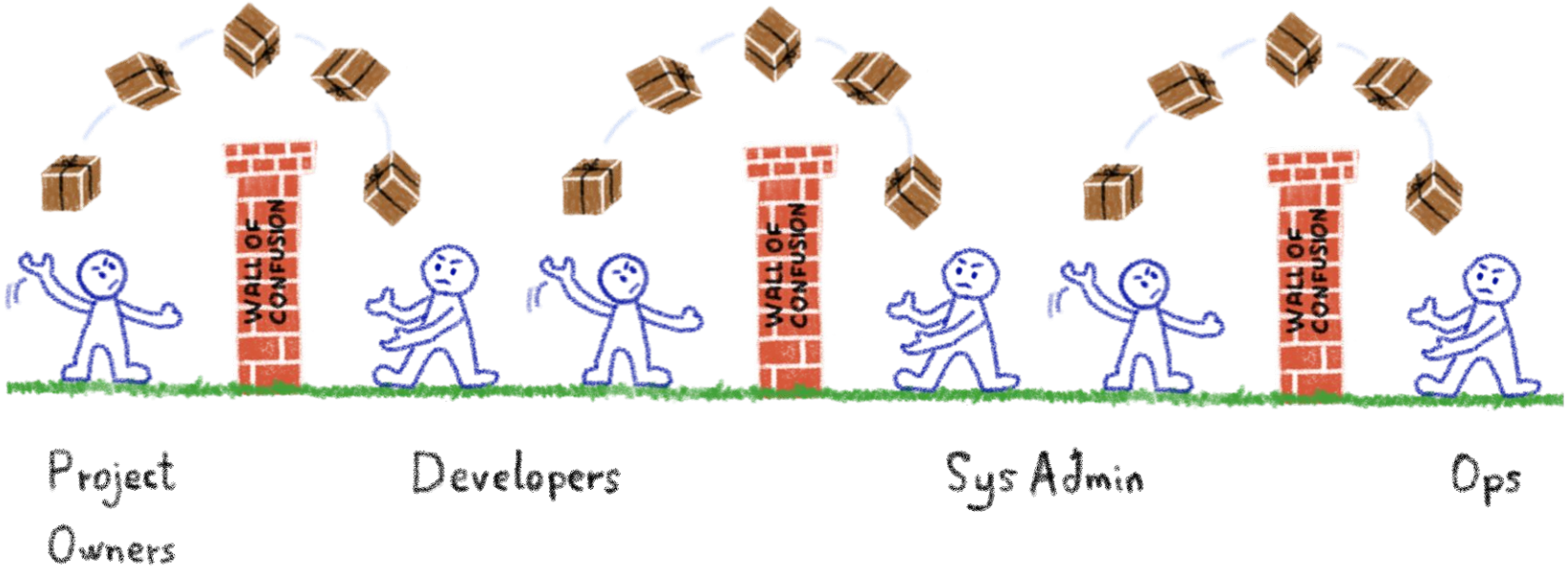
Control, reliability, security…

But cost, rigidity, logistics…

Applying the industrial model

Trying to shoehorn IT into a model where it doesn't fit

Walls & Silos



And procedures, and hierarchy, and corporate politics

Why are we managing IT like factories?

Because we didn't know otherwise?

Rémi Verchère ❄
@rverchere

bash will still be used

7:46 PM · Aug 8, 2023 · **290** Views

DevBcn

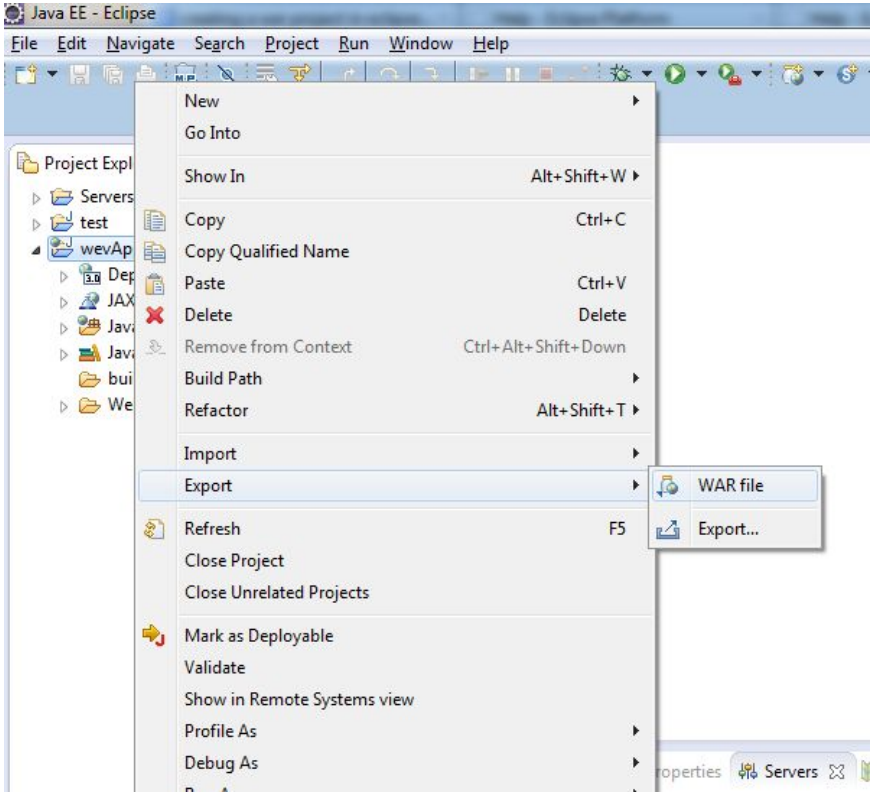
Tooling evolves

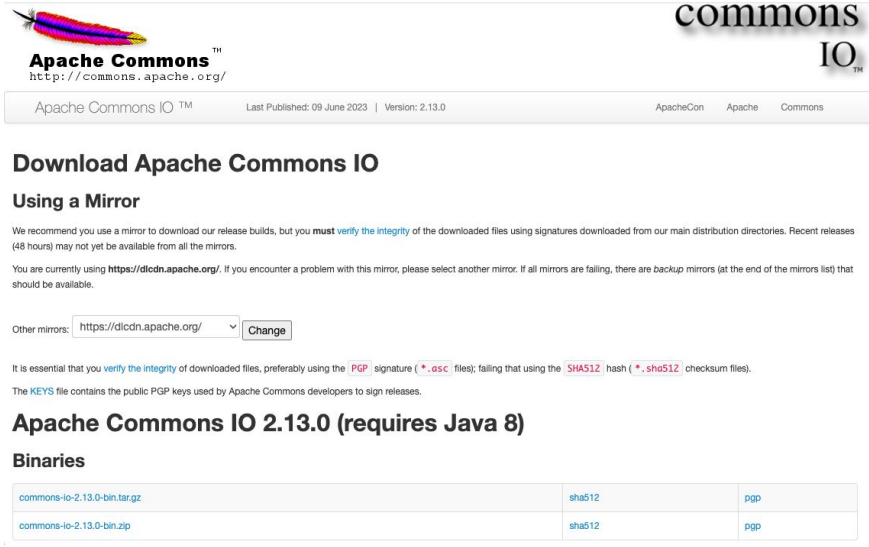
CVS, Ant and (Leeeroy) Jenkins

clever cloud

@LostInBrittany

Old school procedures





Tooling empowering changes

Theory existed since 1999
But without the right tooling...

Source control tools

Better than copying and renaming folders...

Dependency management & build

The agile dependency manager

Better than grabbing each dependency in their website and running `javac` by hand…

Unit testing and continuous integration

Hudson CI

continuum™

JUnit

Jenkins

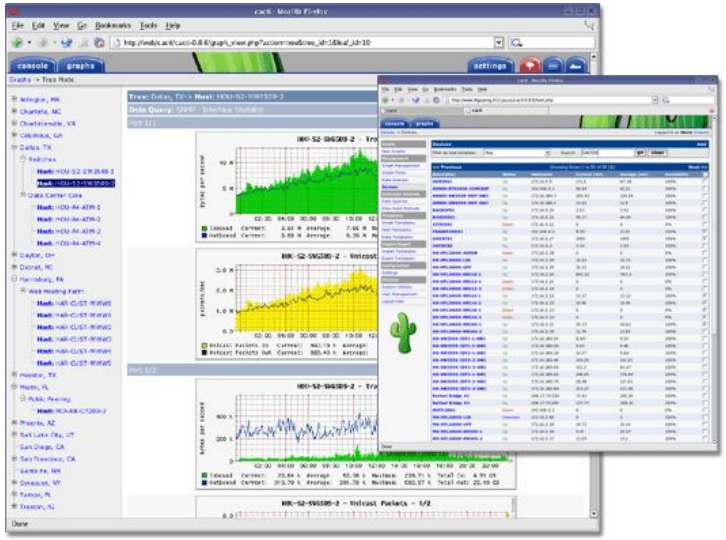
If *Testing is Doubting*, let's doubt automatically

Monitoring tools

DevBcn

cacti

Nagios



ZABBIX

No more spending nights looking at a status screen

clever cloud

@LostInBrittany

So many more possibilities...

So much more complexity!

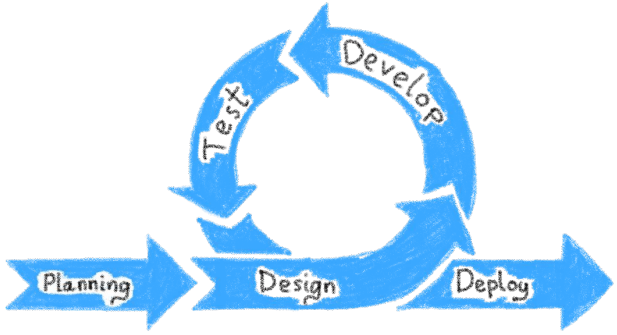
Rémi Verchère ❄
@rverchere

bash will still be used

7:46 PM · Aug 8, 2023 · **290** Views

XP, agility and DevOps

Buzzwords that changed the IT



clever cloud

@LostInBrittany

Extreme Programming

The Values of Extreme Programming

Extreme Programming (XP) is based on values. The rules we just examined are the natural extension and consequence of maximizing our values. XP isn't really a set of rules but rather a way to work in harmony with your personal and corporate values. Start with XP's values listed here then add your own by reflecting them in the changes you make to the rules.

Simplicity: We will do what is needed and asked for, but no more. This will maximize the value created for the investment made to date. We will take small simple steps to our goal and mitigate failures as they happen. We will create something we are proud of and maintain it long term for reasonable costs.

Communication: Everyone is part of the team and we communicate face to face daily. We will work together on everything from requirements to code. We will create the best solution to our problem that we can together.

Feedback: We will take every iteration commitment seriously by delivering working software. We demonstrate our software early and often then listen carefully and make any changes needed. We will talk about the project and adapt our process to it, not the other way around.

Respect: Everyone gives and feels the respect they deserve as a valued team member. Everyone contributes value even if it's simply enthusiasm. Developers respect the expertise of the customers and vice versa. Management respects our right to accept responsibility and receive authority over our own work.

Courage: We will tell the truth about progress and estimates. We don't document excuses for failure because we plan to succeed. We don't fear anything because no one ever works alone. We will adapt to changes when ever they happen.

What lessons have we learned about implementing XP so far.

ExtremeProgramming.org home | XP Rules | XP Map | Lessons Learned | About the Author

clever cloud

@LostInBrittany

Manifesto for Agile Software Development

clever cloud

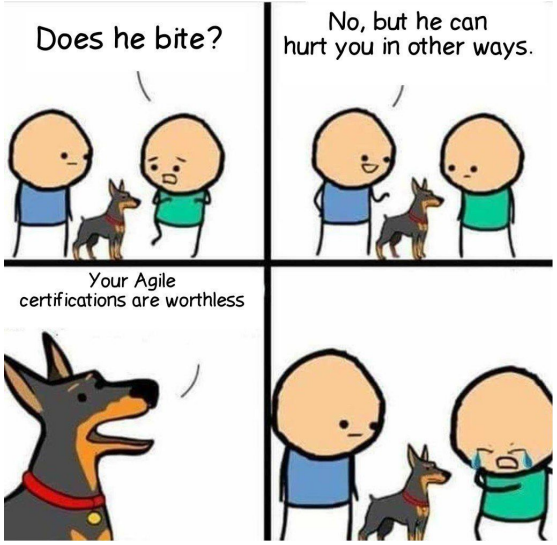
@LostInBrittany

Breaching walls, breaking down silos

clever cloud

@LostInBrittany

The business of Agility

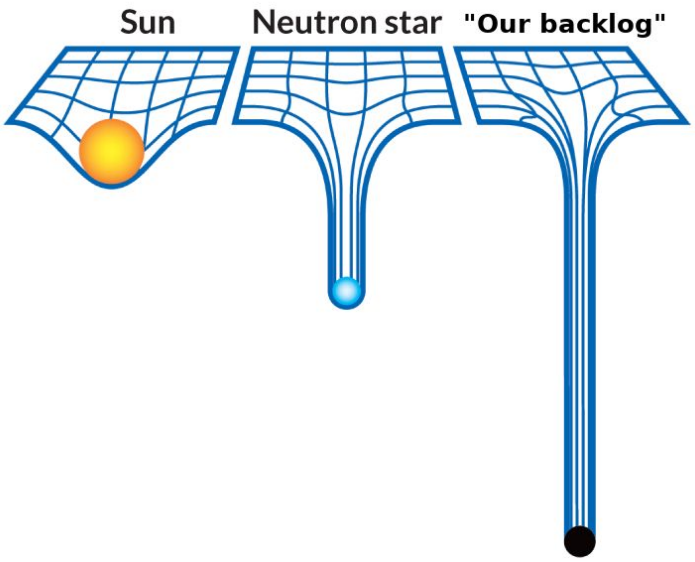


The Dark Side rises

clever cloud

@LostInBrittany

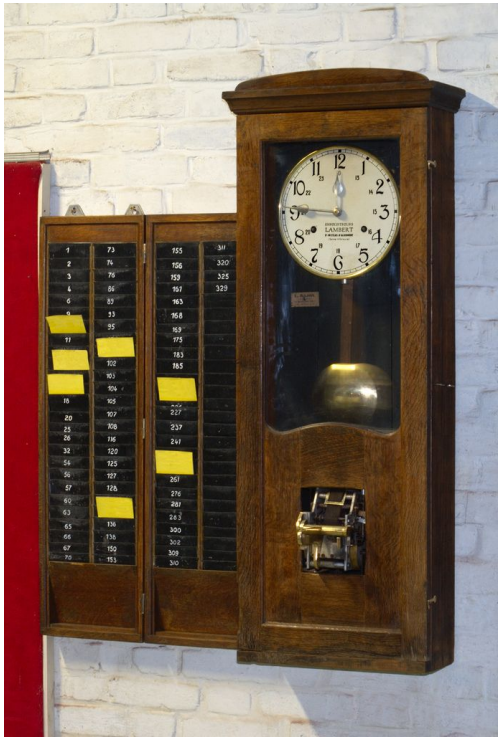
Agile Tooling

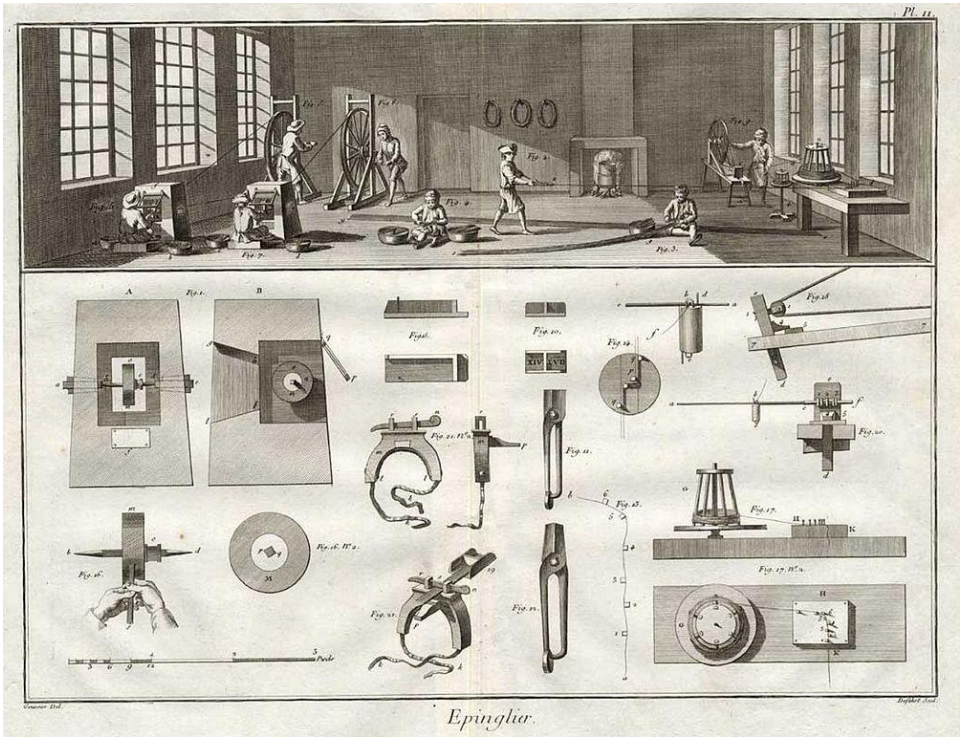


clever cloud

@LostInBrittany

Back to industrial practices ?





clever cloud

@LostInBrittany

DevOps: breaking Dev and Ops Silos

clever cloud

@LostInBrittany

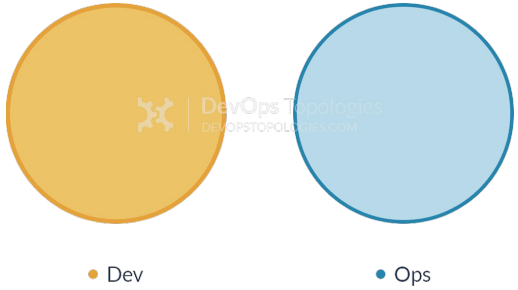
DevOps is a reaction to the wall of confusion

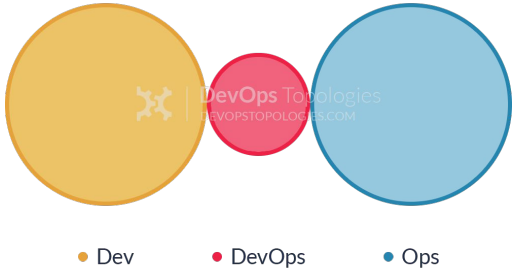
Making the different stakeholders
to work together in sync

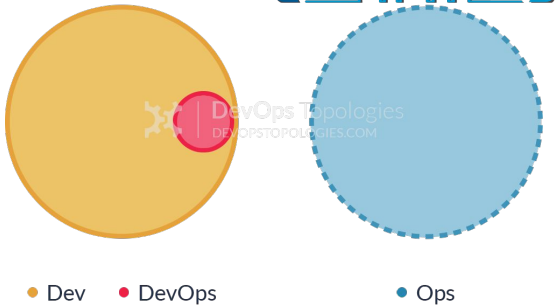
clever cloud

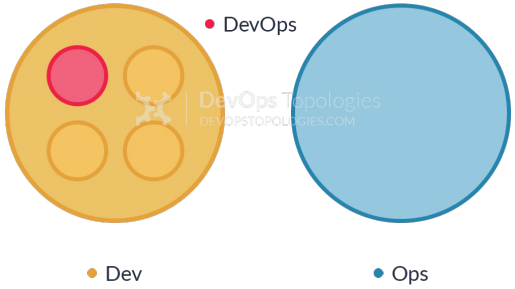
@LostInBrittany

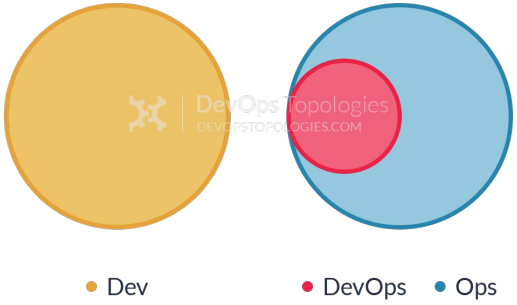
DevOps anti patterns











More in DevOps Topologies site

clever cloud

@LostInBrittany

DevOps also has another Dark Side

> A DevOps engineer is an IT generalist who should have a wide-ranging knowledge of both development and operations, including coding, infrastructure management, system administration, and DevOps toolchains.

WTF is a DevOps Engineer? And a DevSecOps?
A DevMlOps? A DevAiDataSecOps? A Dev*Ops?

So we have Cults of Agility and Dev*Ops

And so much more complexity!

Rémi Verchère ❄
@rverchere

bash will still be used

7:46 PM · Aug 8, 2023 · **290** Views

Enter the Cloud

Renting server time in other's people infra

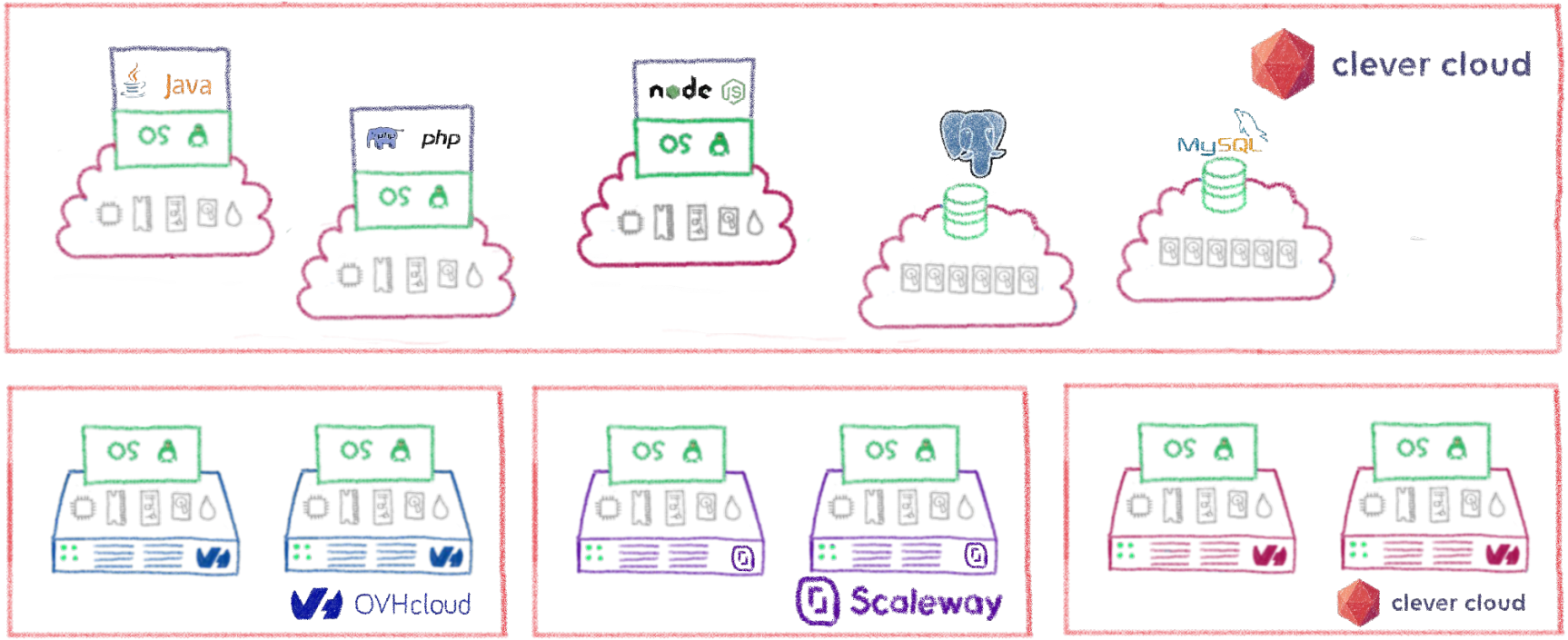
From virtualisation to the cloud

How to use the infrastructure at its full capacity

clever cloud

@LostInBrittany

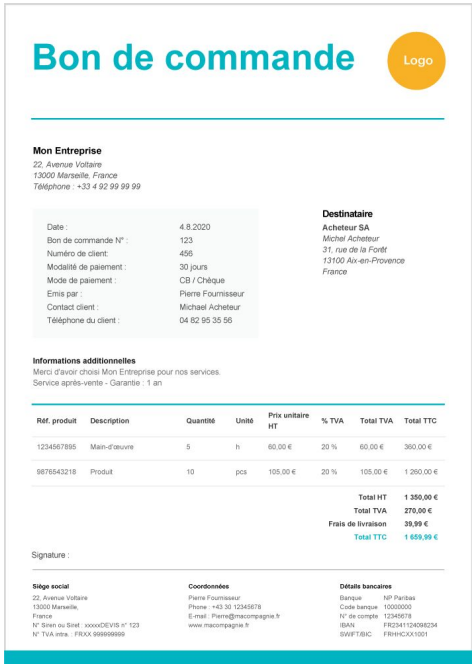
Cloud demands automation



clever cloud

@LostInBrittany

It changes the way how IT works



Bon de commande

Logo

Mon Entreprise
22, Avenue Voltaire
13000 Marseille, France
Téléphone : +33 4 92 99 99 99

Date :	4.8.2020
Bon de commande N° :	123
Numéro de client :	456
Modalité de paiement :	30 jours
Mode de paiement :	CB / Chèque
Emis par :	Pierre Fournisseur
Contact client :	Michael Acheteur
Téléphone du client :	04 82 95 35 56

Destinataire
Acheteur SA
Michel Acheteur
31, rue de la Forêt
13100 Aix-en-Provence
France

Informations additionnelles
Merci d'avoir choisi Mon Entreprise pour nos services.
Service après-vente - Garantie : 1 an

Réf. produit	Description	Quantité	Unité	Prix unitaire HT	% TVA	Total TVA	Total TTC
1234567895	Main-d'oeuvre	5	h	60,00 €	20 %	60,00 €	360,00 €
9876543218	Produit	10	pcs	105,00 €	20 %	105,00 €	1 260,00 €

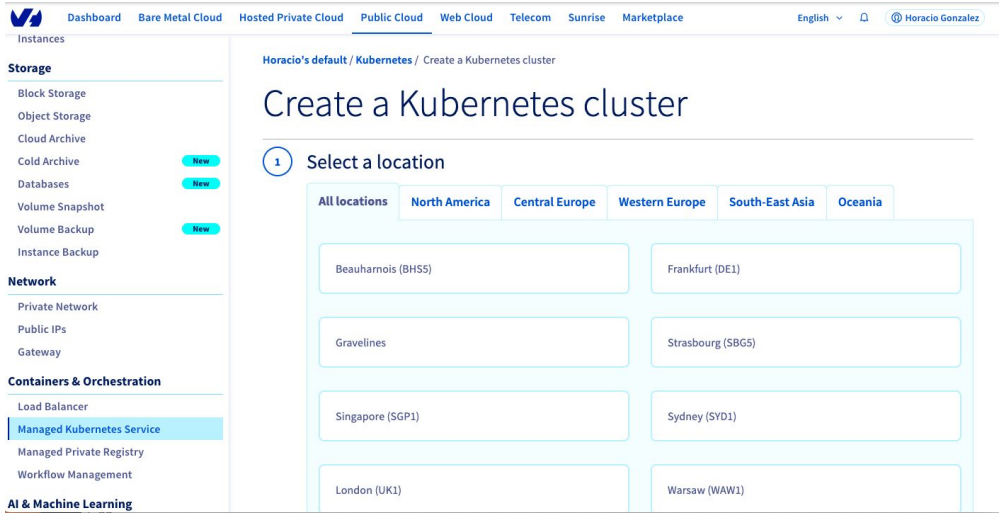
Total HT	1 350,00 €
Total TVA	270,00 €
Frais de livraison	39,99 €
Total TTC	1 659,99 €

Signature :

Siège social
22, Avenue Voltaire
13000 Marseille
France
N° Siren ou Siret : xxxxxDEVIS n° 123
N° TVA intra. : FRXX 999999999

Coordonnées
Pierre Fournisseur
Phone : +43 30 12345678
E-mail : Pierre@macompagnie.fr
www.macompagnie.fr

Détails bancaires
Banque : NP Paribas
Code banque : 10000000
N° de compte : 12345678
IBAN : FR2341124098234
SWIFT/BIC : FRHHCXX1001



And it demands a mentality change

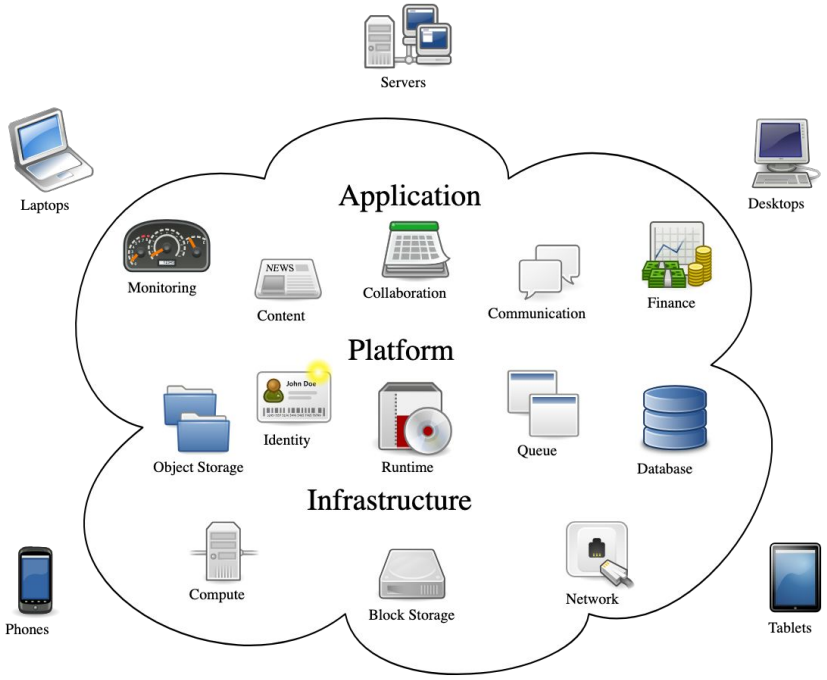
clever cloud

@LostInBrittany

Empowering developers

Infrastructure is only a click away

Distributed is the new black



Cloud Native architectures and services

clever cloud

@LostInBrittany

Sysadmins who code

Creating tools: automation, monitoring, observability…

New roles appear: SRE

WTF is a System Reliability Engineer?

clever cloud

@LostInBrittany

250 cloud products only in this provider...

And so much more complexity!

Rémi Verchère ❄
@rverchere

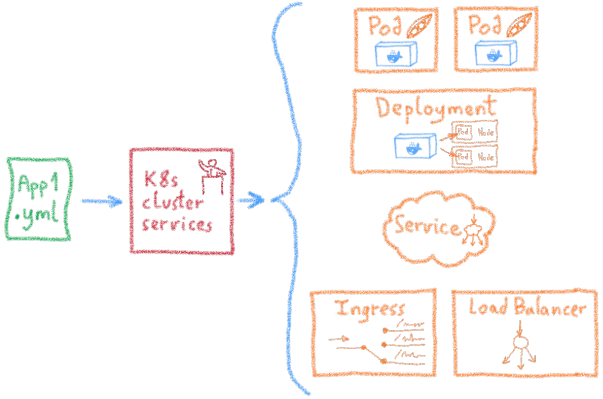
bash will still be used

7:46 PM · Aug 8, 2023 · **290** Views

DevBcn

Declarative Infrastructure

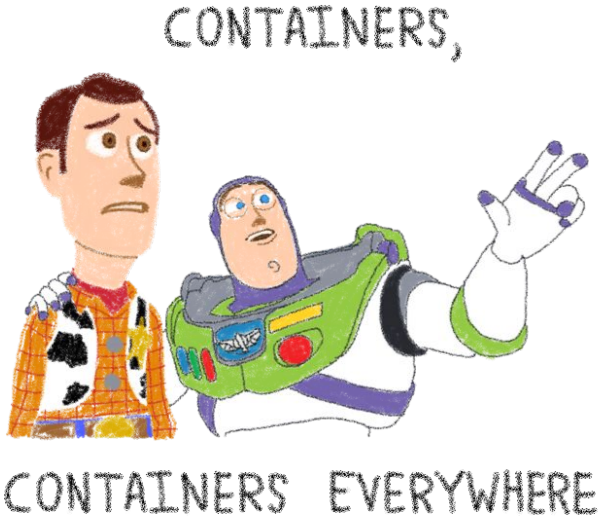
The intern metaphor

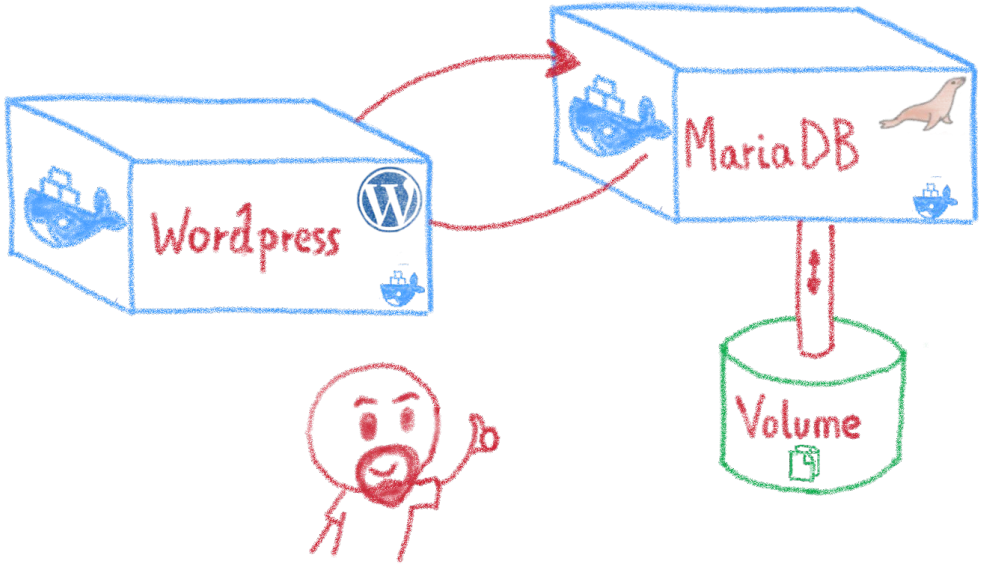


clever cloud

@LostInBrittany

Containers make dev life easier

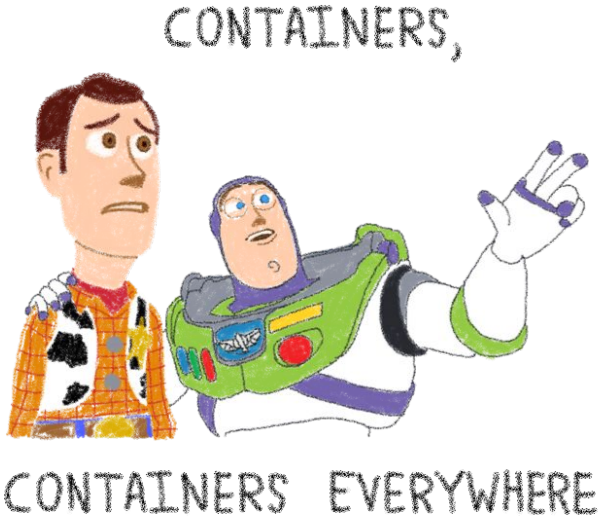


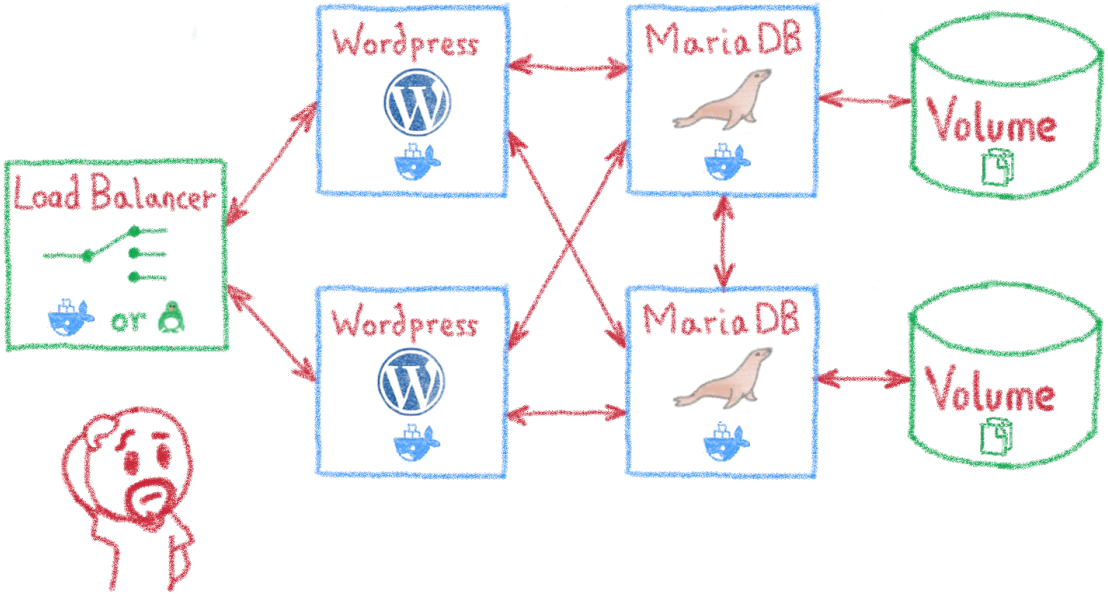


clever cloud

@LostInBrittany

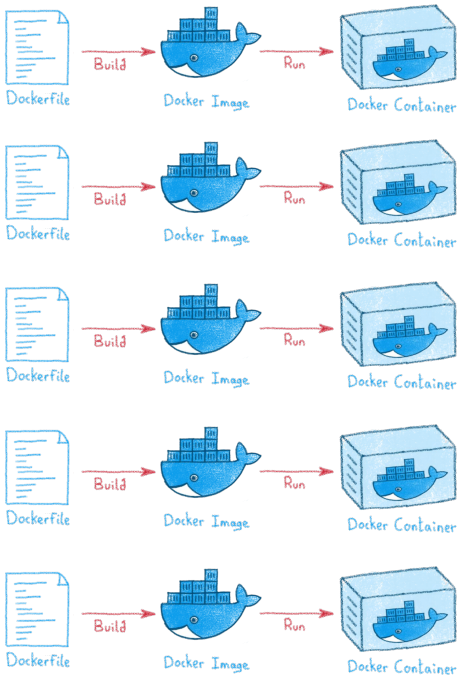
Less simple if you must operate them





Like in a production context

And what about microservices?

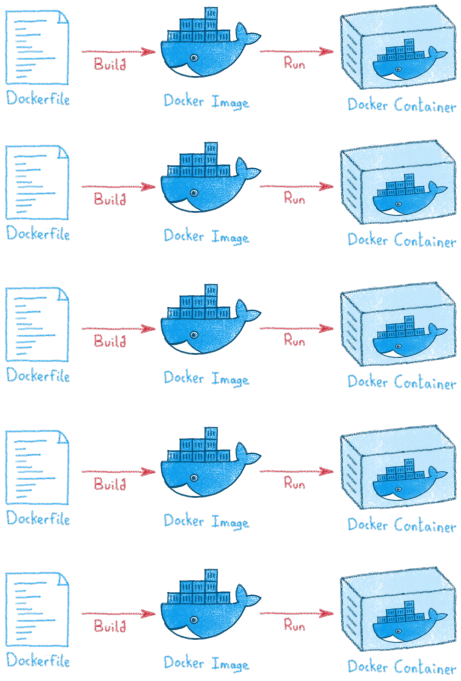


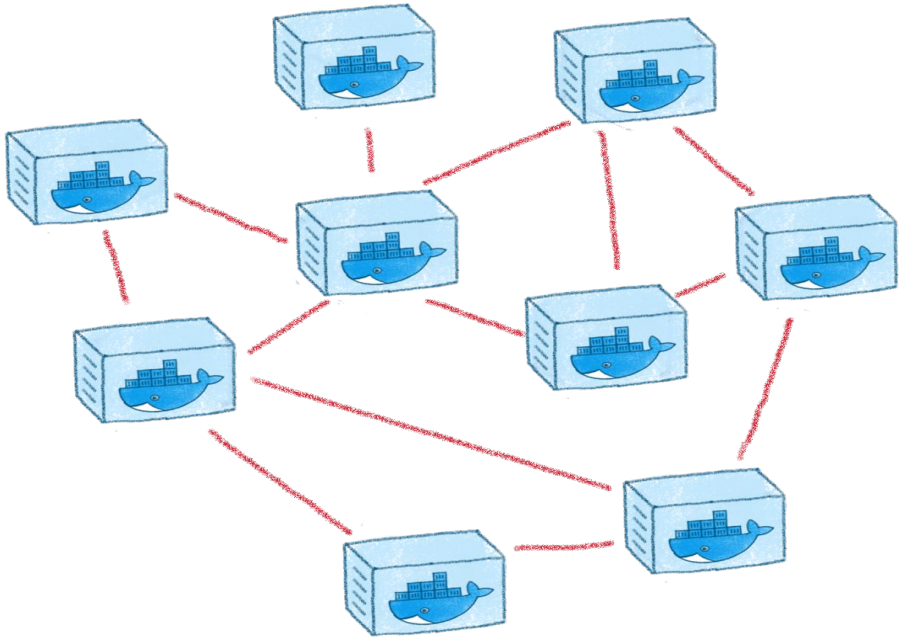
Are you sure you want to operate them by hand?

clever cloud

@LostInBrittany

And what about microservices?





Are you sure you want to operate them by hand?

clever cloud

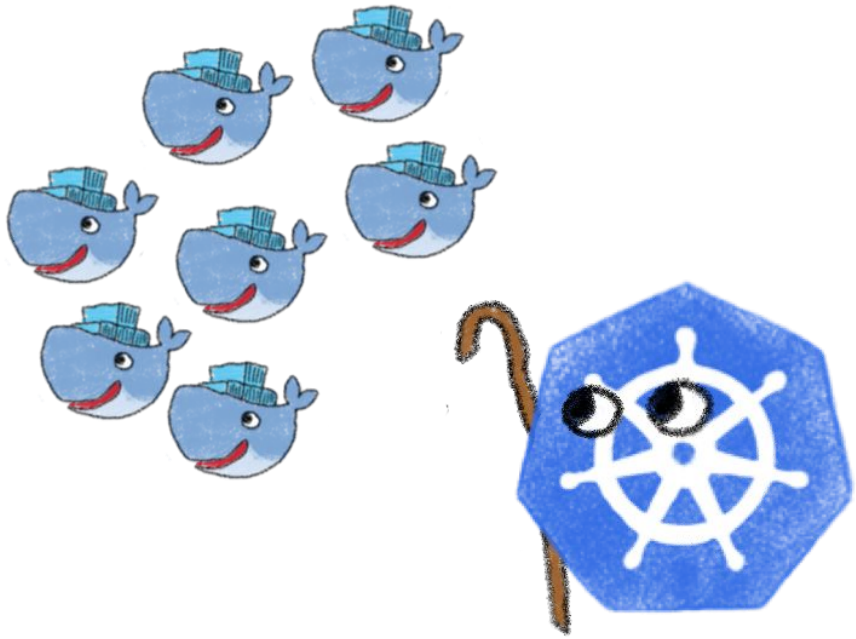
@LostInBrittany

Kubernetes: a full orchestrator

DevBcn

Takes care of:

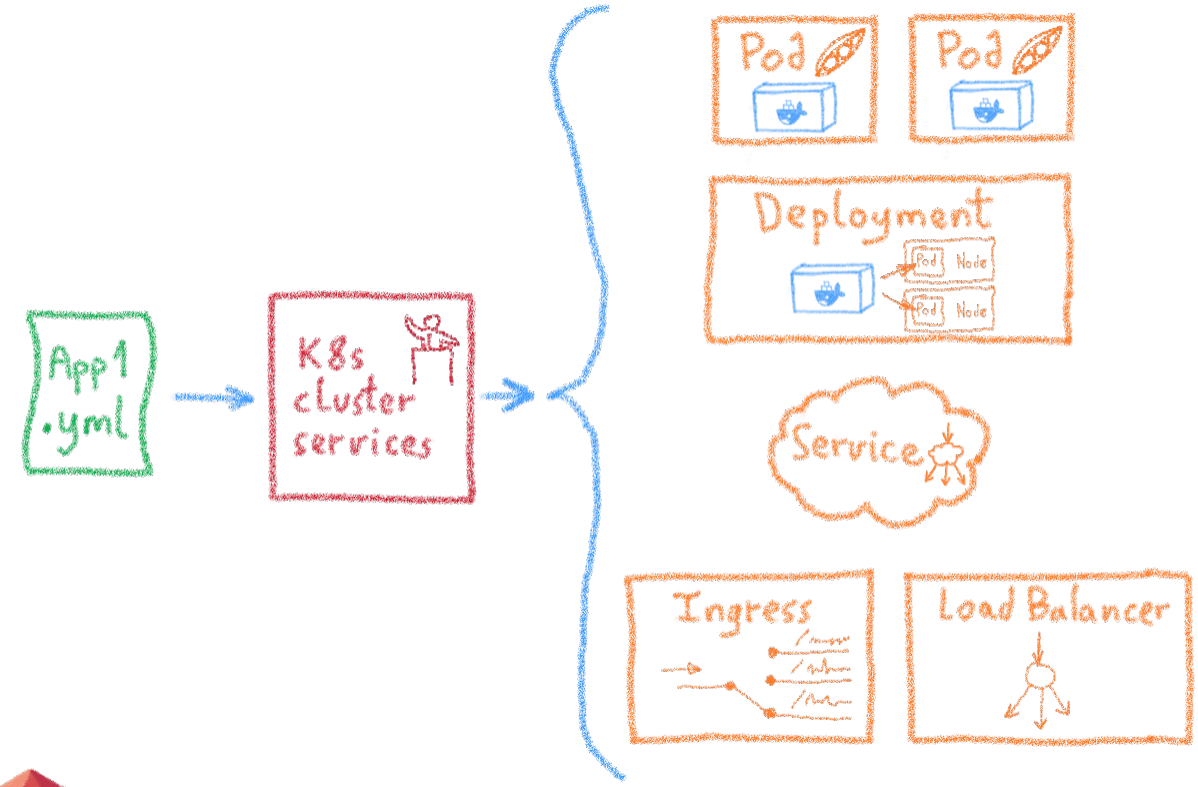
- Deployment
- Scaling
- Monitoring
- Repairing
- Securing
- ...



clever cloud

@LostInBrittany

Kubernetes - Desired State Management



Ingress

Services

Deployments

Pods

Sidecars

Replica Sets

clever cloud

@LostInBrittany

Infrastructure as Code

DevBcn

HashiCorp
Terraform

- Build
- Modify
- Version

your infrastucture

clever cloud

@LostInBrittany

Containers? Pods? Ansible? Terraform?

So much more complexity!

Rémi Verchère ❄
@rverchere

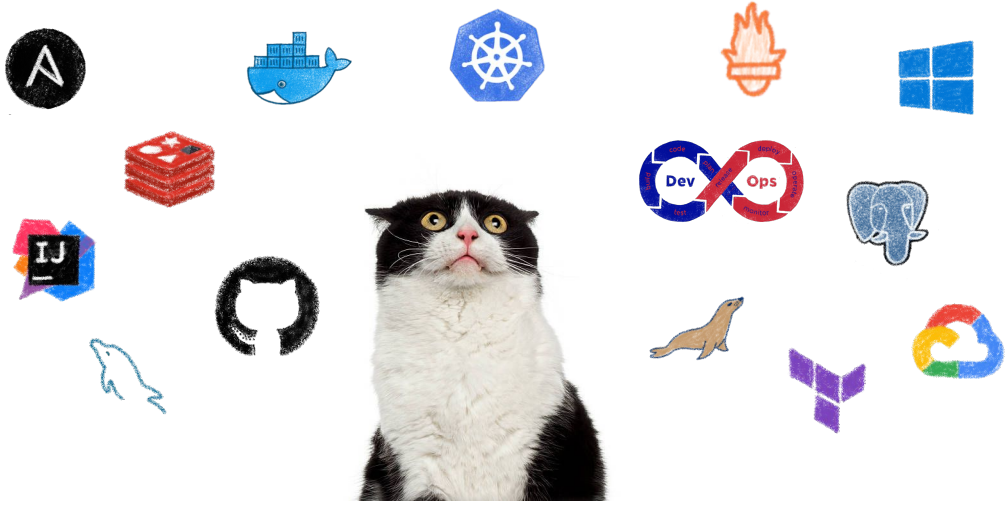
bash will still be used

7:46 PM · Aug 8, 2023 · **290** Views

DevBcn

Becoming a developer in 2024

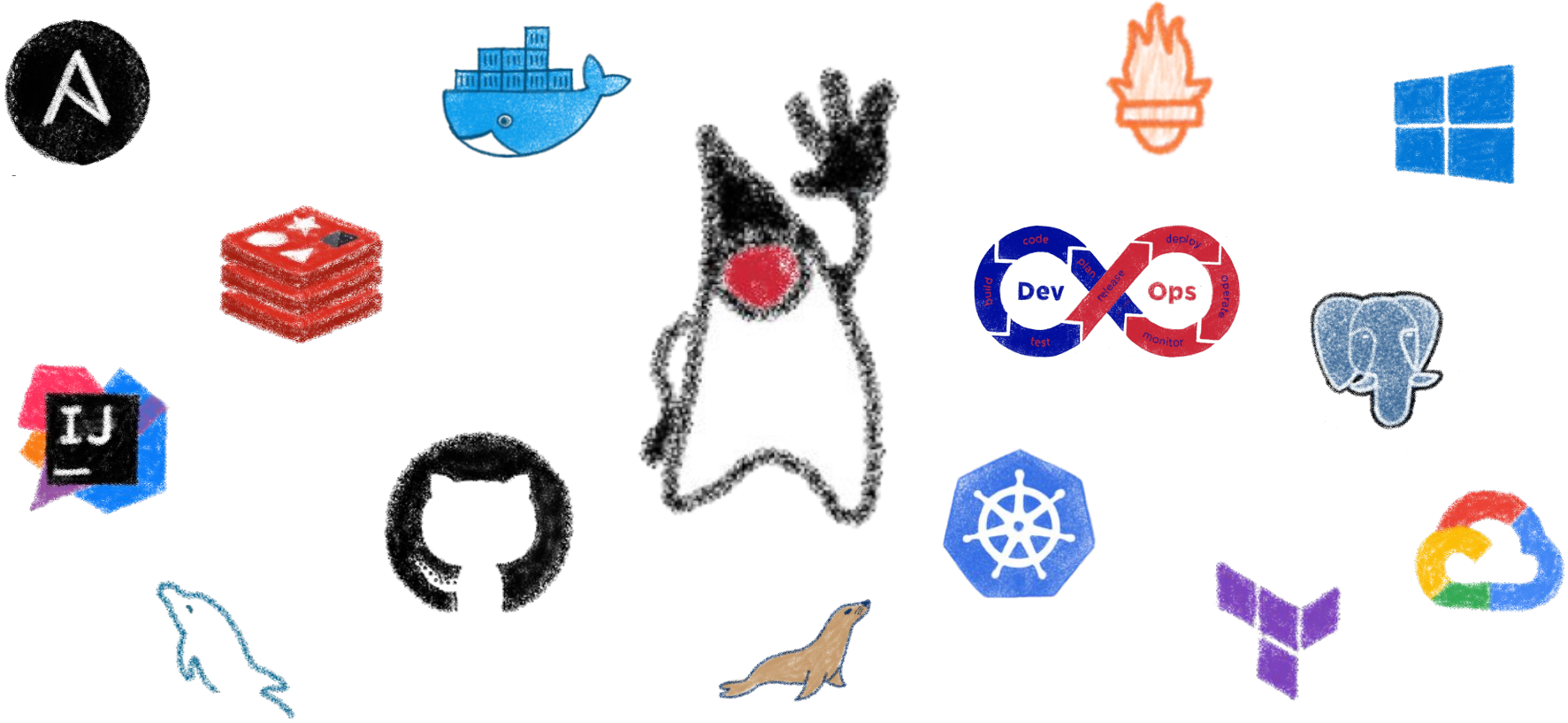
Do I need to know all that?



clever cloud

@LostInBrittany

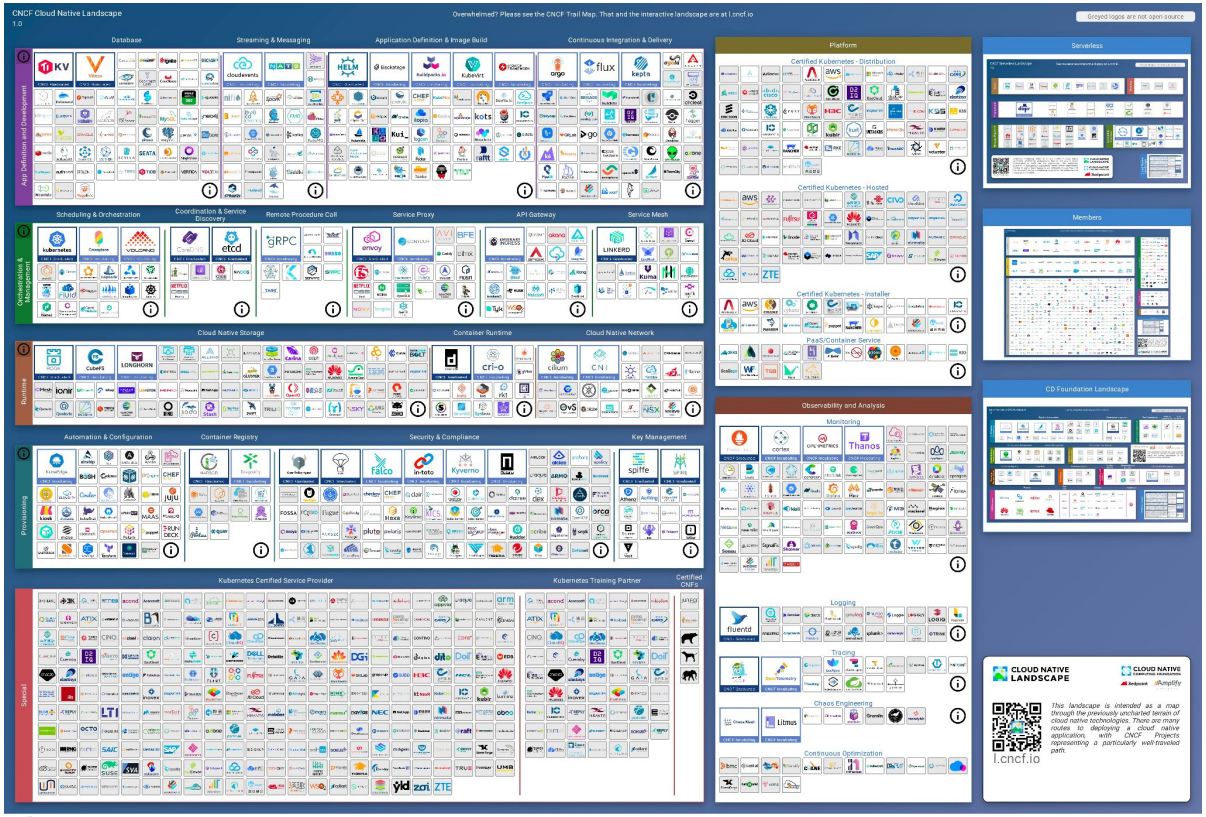
So many things to learn...



clever cloud

@LostInBrittany

So many options ...



clever cloud

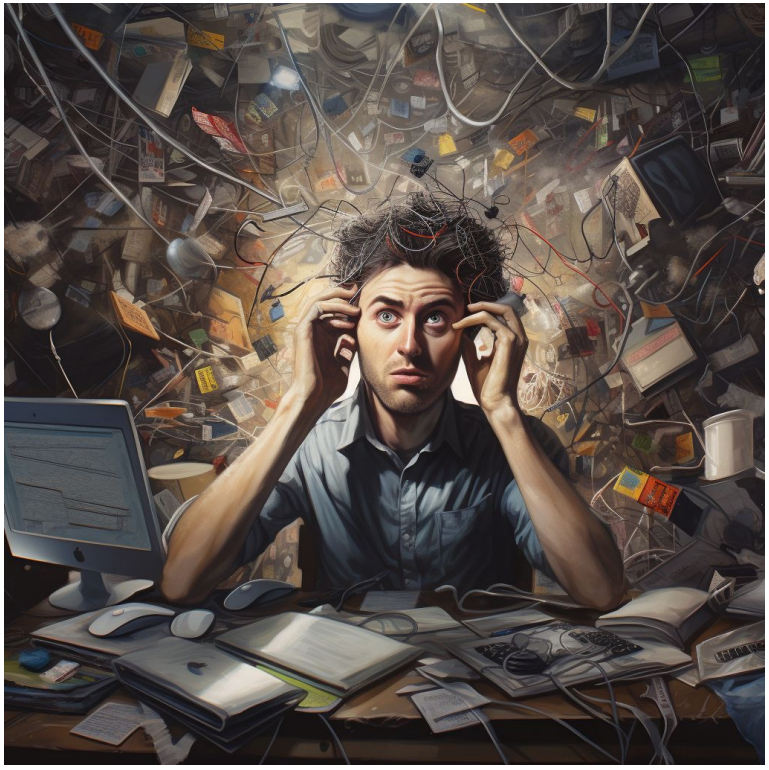
@LostInBrittany

Managing the self-service commodity

clever cloud

@LostInBrittany

Shift left and Cognitive Load



DevBcn

Platform Engineering to the rescue

Without adding more complexity?

clever cloud

@LostInBrittany

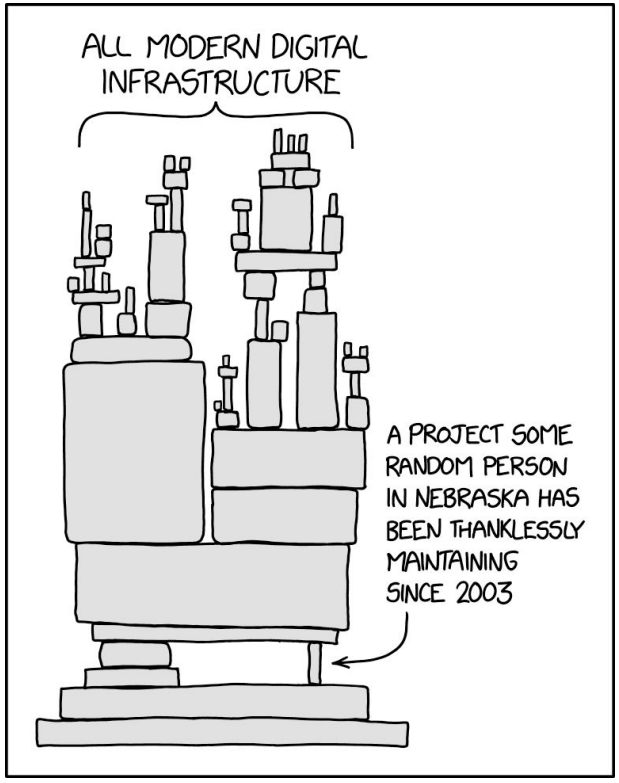
What's Platform Engineering?

Platform engineering is the discipline of designing and building toolchains and workflows that enable self-service capabilities for software engineering organizations in the cloud-native era.

Platform engineers provide an integrated product most often referred to as an “Internal Developer Platform” covering the operational necessities of the entire lifecycle of an application.

Lucca Galante

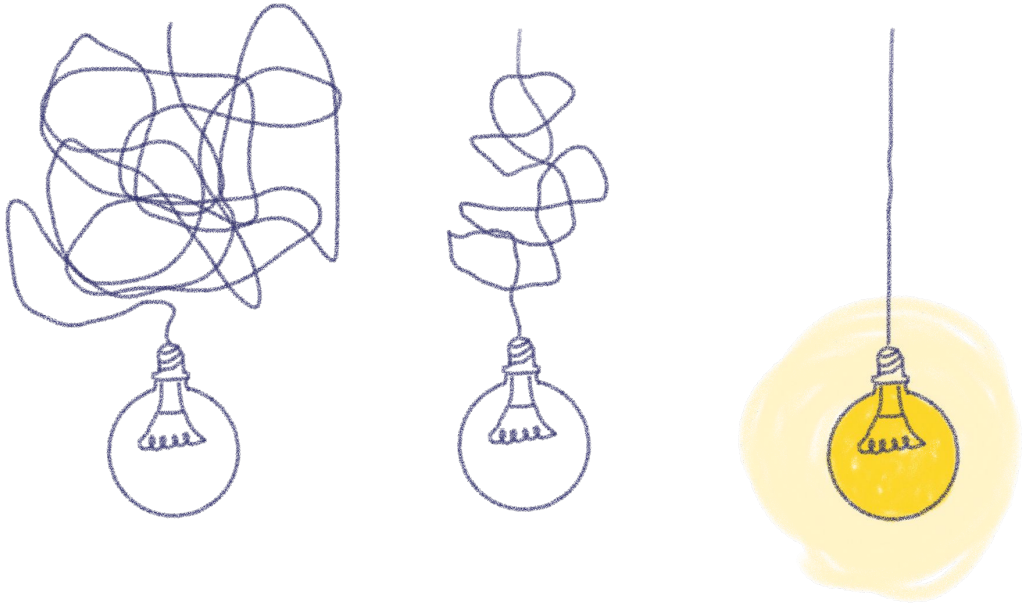
A fancy name for something already there



Most companies already have some kind of platform

Often homemade…

The purpose of Platform Engineering



Empowering developers while reducing complexity

clever cloud

@LostInBrittany

But how can we create them?

gitops

Team Topologies

Platform Engineering

GitOps

What is GitOps?

DevBcn

Git is the single source of truth

Treat everything as code

Operations through Git workflows

Benefits of GitOps

- Collaboration
- Visibility & auditing
- Security & reliability
- Provisioning & deployment

clever cloud

@LostInBrittany

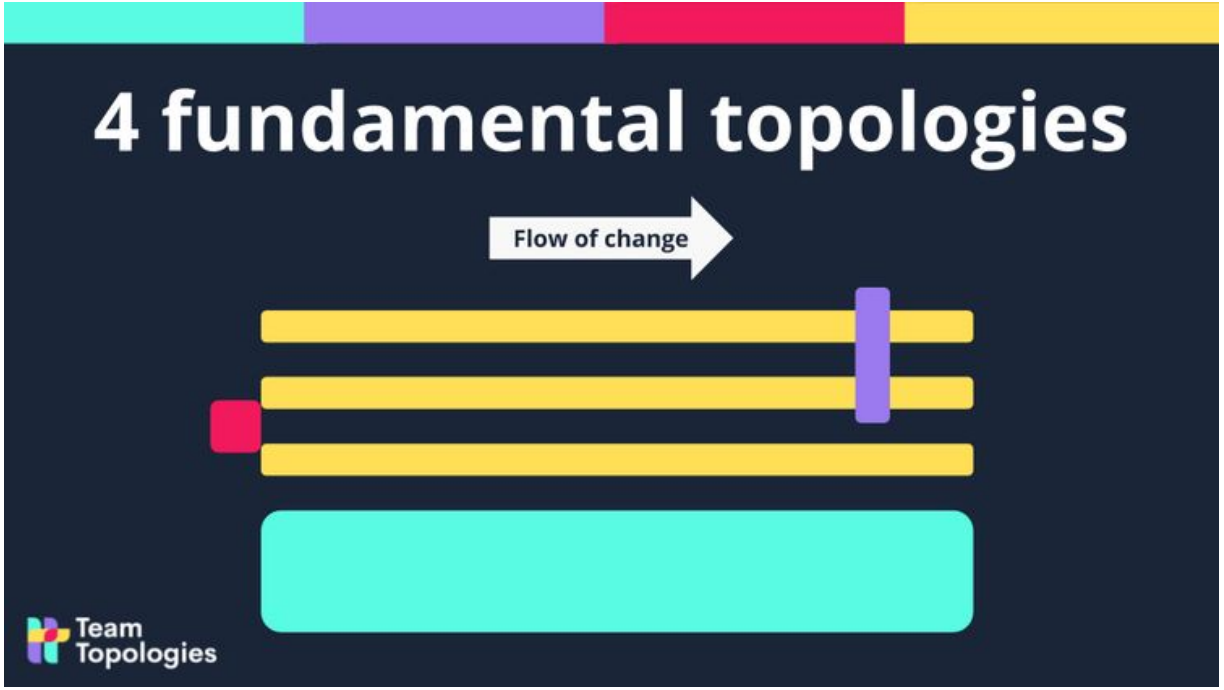
Team Topologies

It's not only a tool, but an organisation

Team Topologies

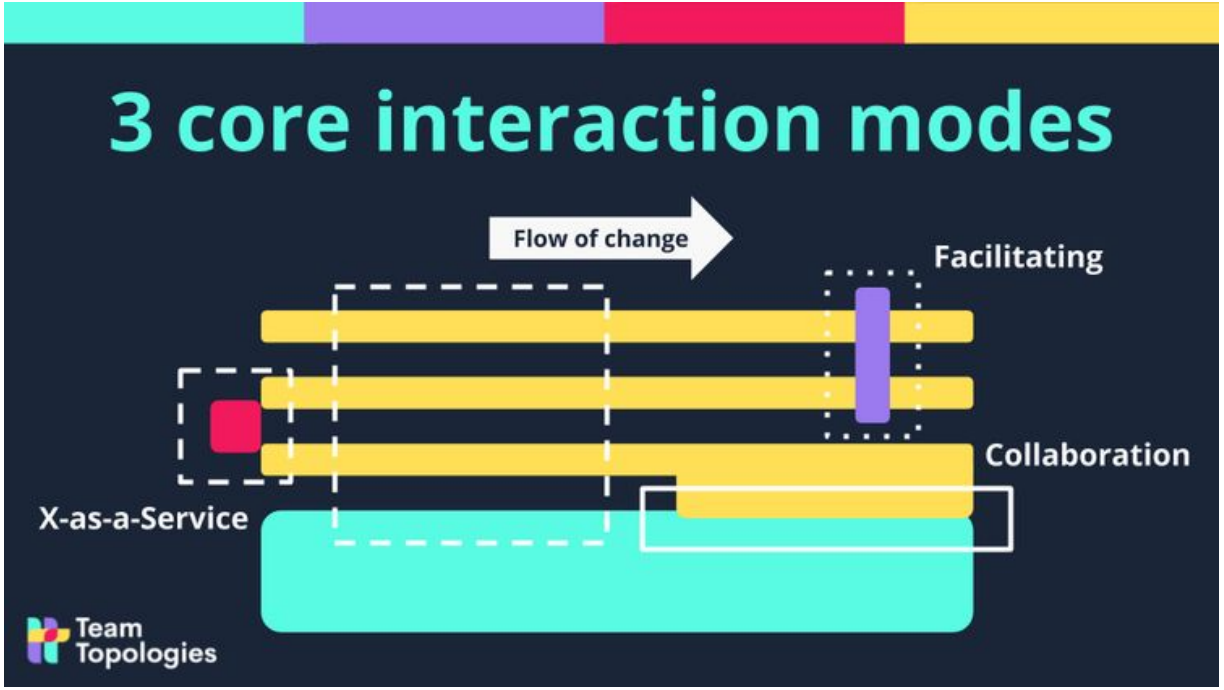
https://teamtopologies.com/

Team Topologies



https://teamtopologies.com/

Team Topologies



https://teamtopologies.com/

DevBcn

Principles of Platform Engineering

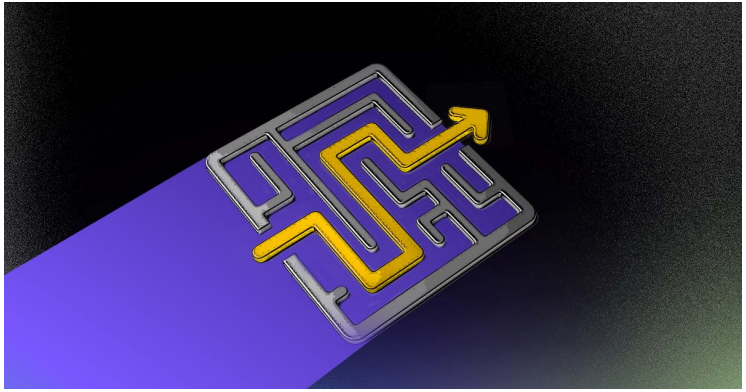
To make it work

clever cloud

@LostInBrittany

Paving golden paths

Platform engineering is about binding process and tools into a paved road. Rather than letting everybody operate everything and having to understand the entire toolchain to do so, platform engineers provide the glue to bind everything into a consistent self-service experience.

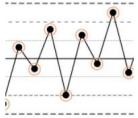


Clear mission and role

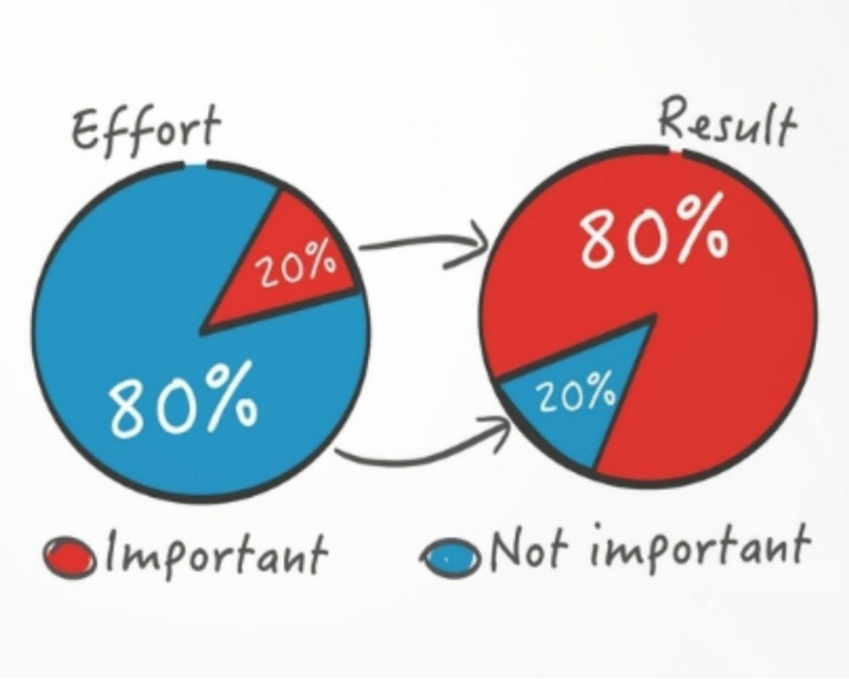
Platform as a Product

DevBcn

Work Types

Type	Output	Planning	Goal	Approach
Manufacturing			• Maximise efficiency • Commodification	• Mass production • Precise Specifications • Control Variation
Construction			• Compromise between cost, time, scope and quality.	• Plan & Execute • Comprehensive Specifications • Control Change
Product Development			• Maximise quality and features • Discard low value work	• Iterative experimentation • Respond to feedback

Focus on common problems



clever cloud

@LostInBrittany

Glue is valuable

Don't reinvent the wheel

Rémi Verchère ❄
@rverchere

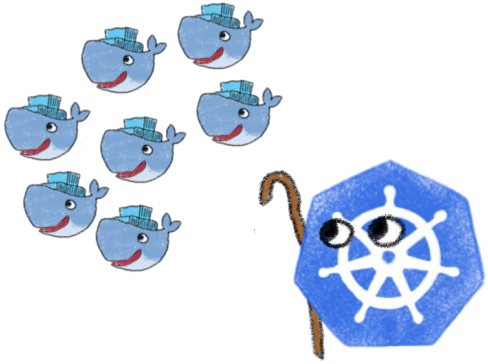
bash will still be used

7:46 PM · Aug 8, 2023 · **290** Views

DevBcn

An IDP over Kubernetes

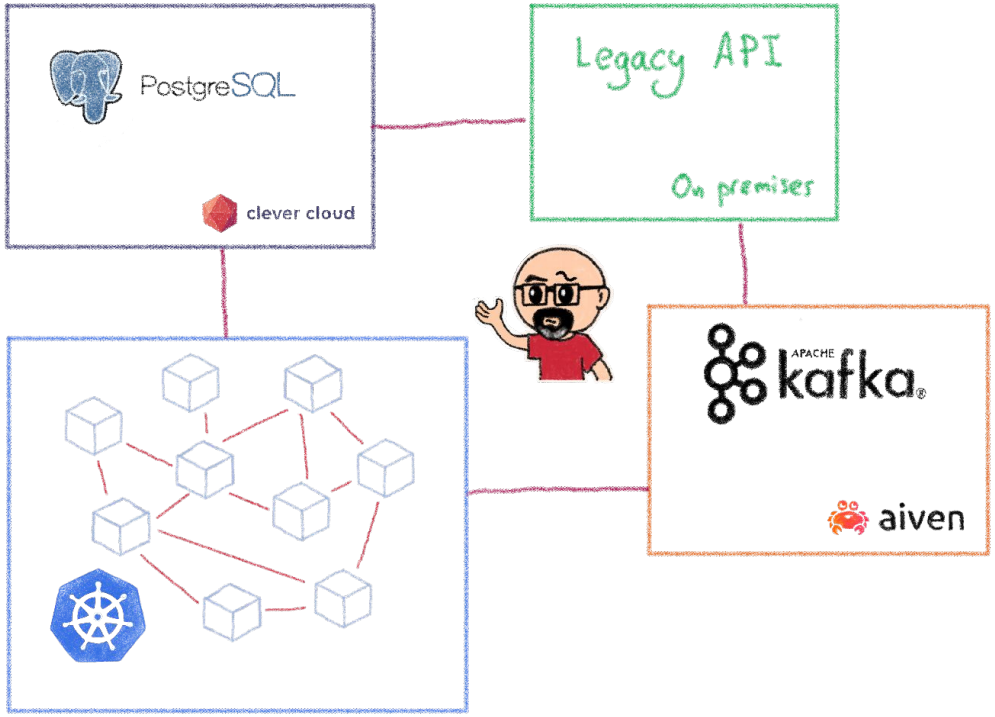
What could I use?



clever cloud

@LostInBrittany

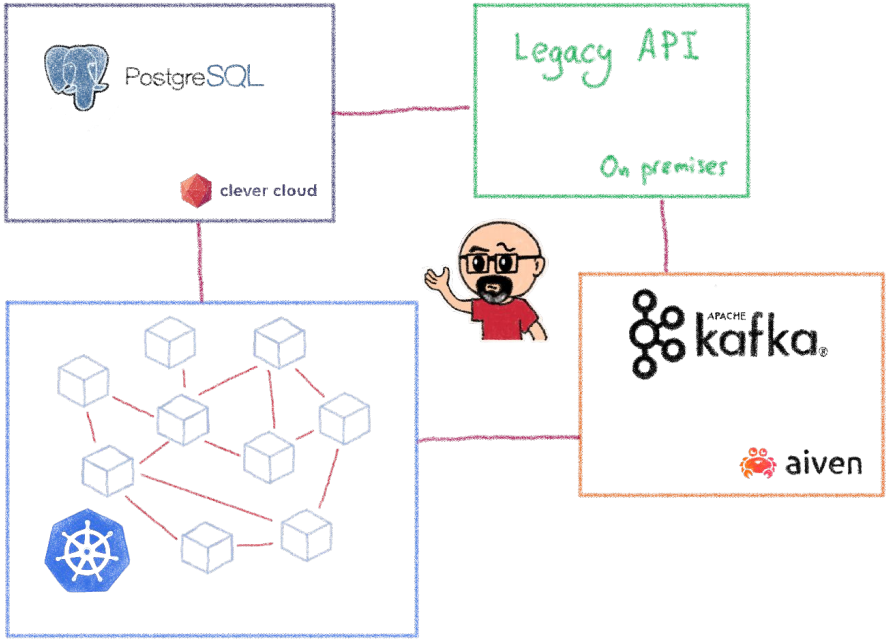
Don't put everything into Kubernetes

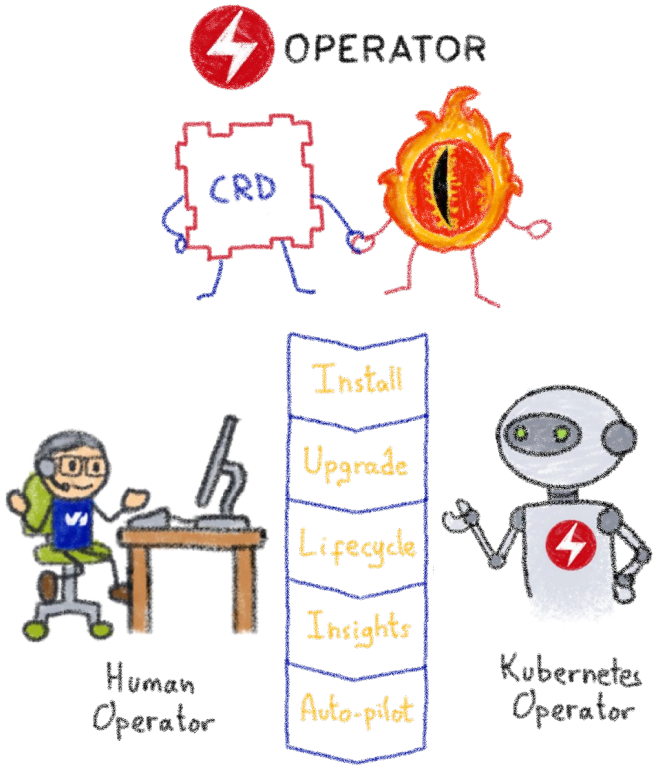


clever cloud

@LostInBrittany

Operators simplify Kubernetes integration

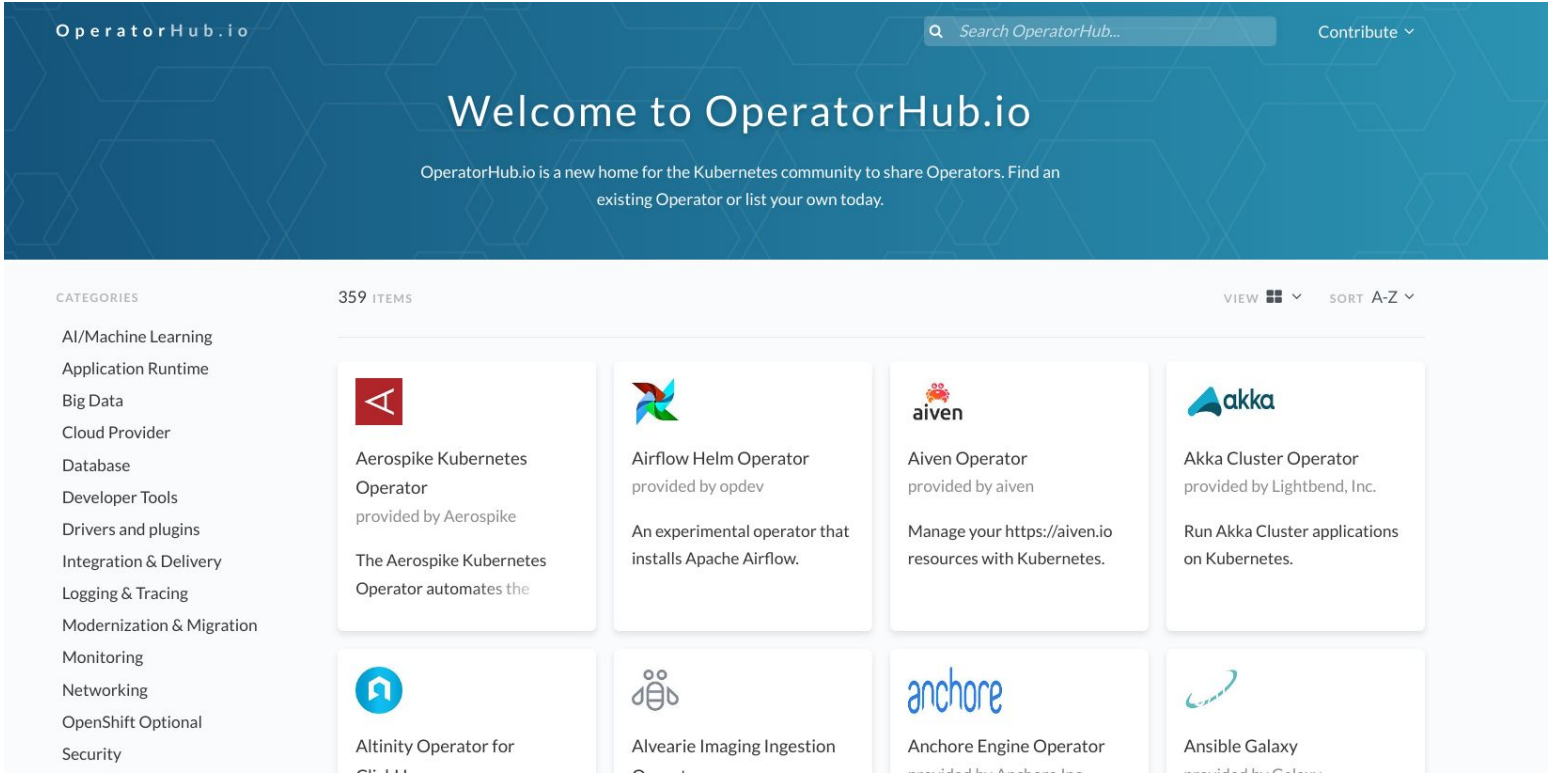




clever cloud

@LostInBrittany

Lots of available operators



clever cloud

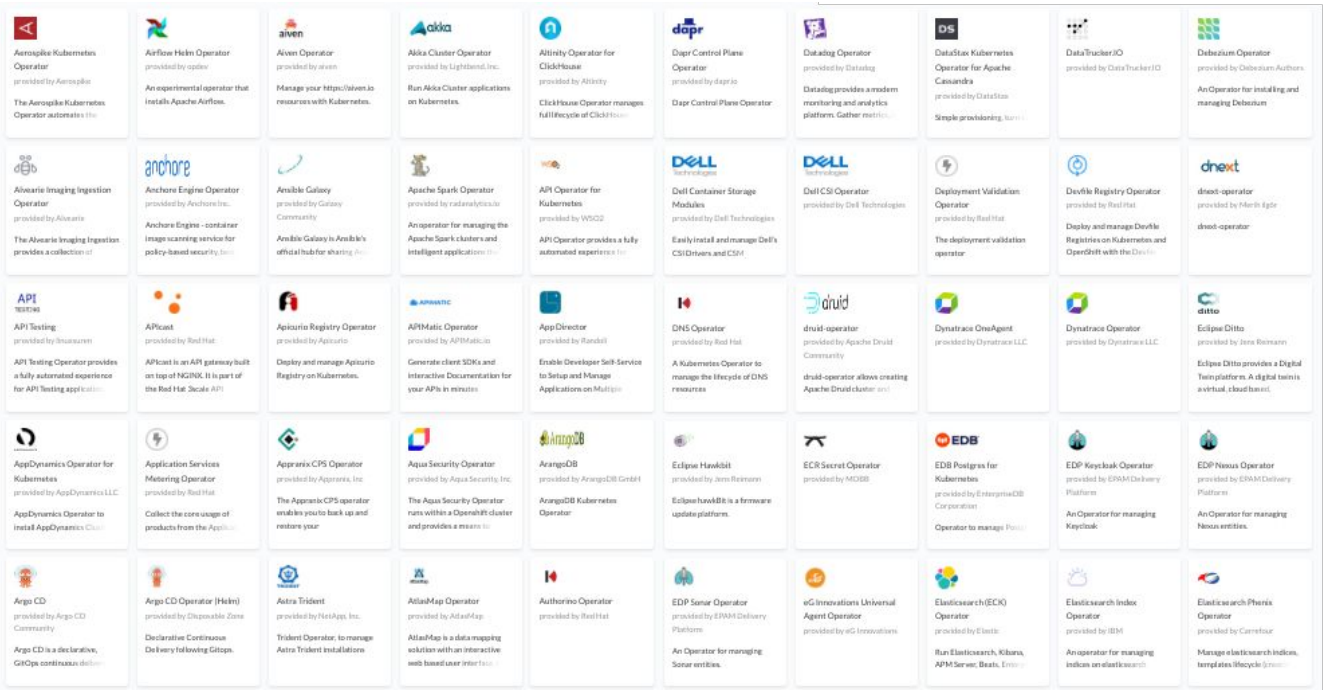
@LostInBrittany

Hey DevBCN, operators ❤️ Java

clever cloud

@LostInBrittany

So you have a bunch of operators...

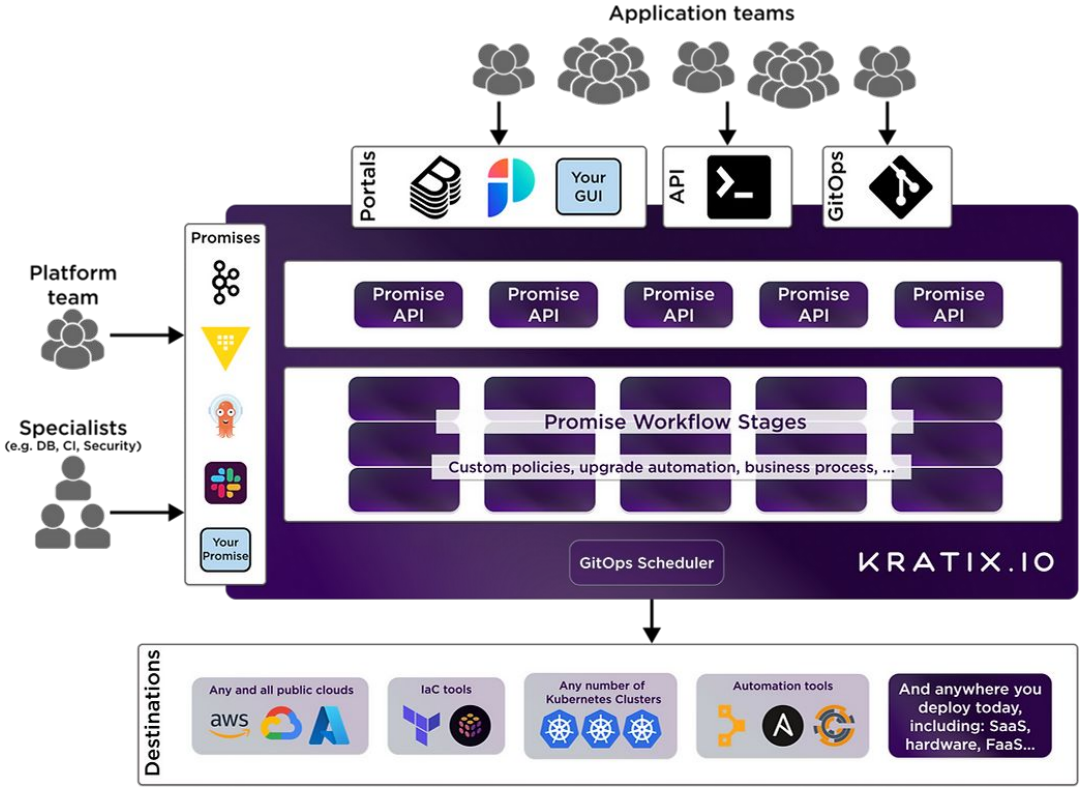


Too many options again...

clever cloud

@LostInBrittany

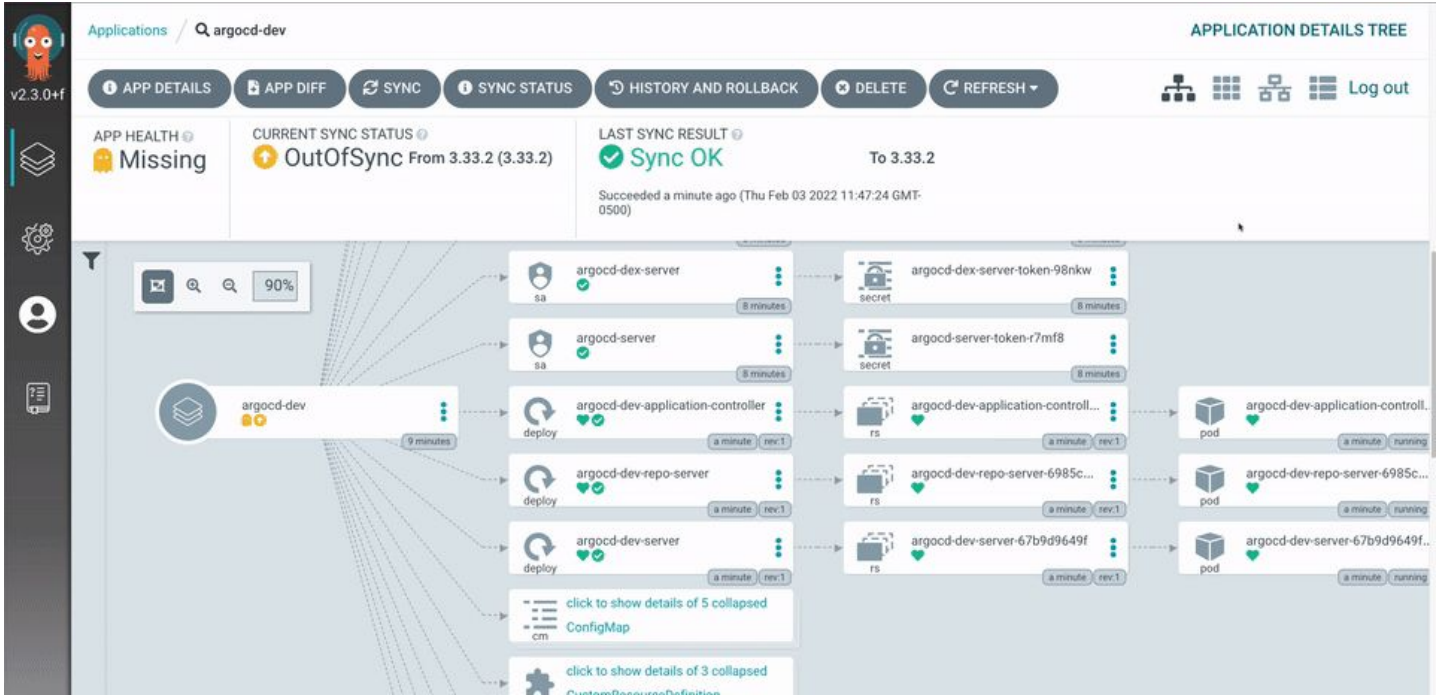
Use a Platform Engineering framework



clever cloud

@LostInBrittany

Set-up a robust CI/CD/GitOps pipeline



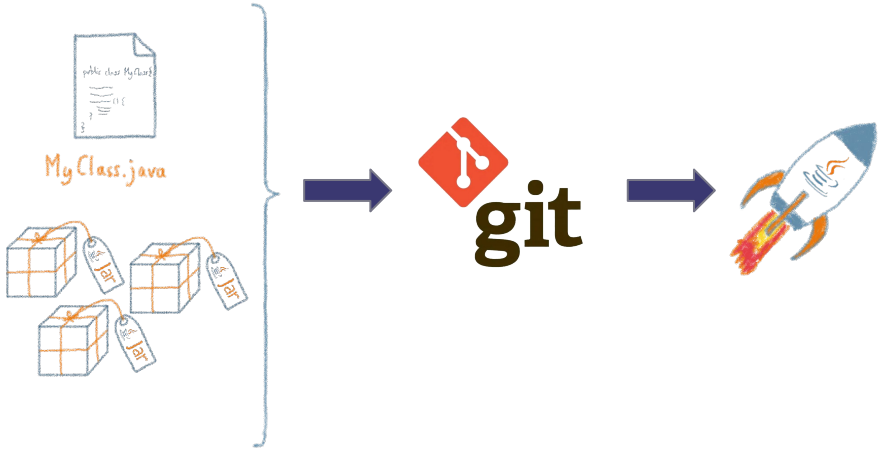
clever cloud

@LostInBrittany

DevBcn

An IDP without Kubernetes

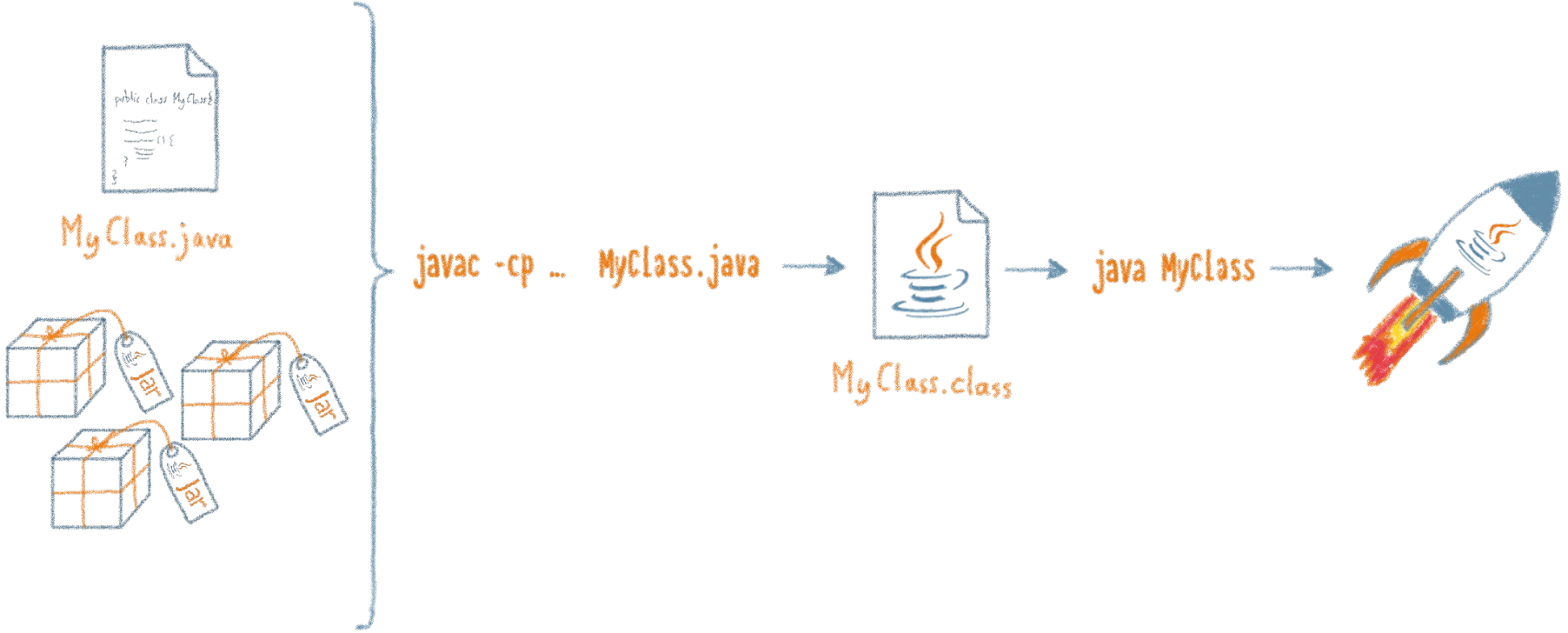
There is a life outside K8s...



clever cloud

@LostInBrittany

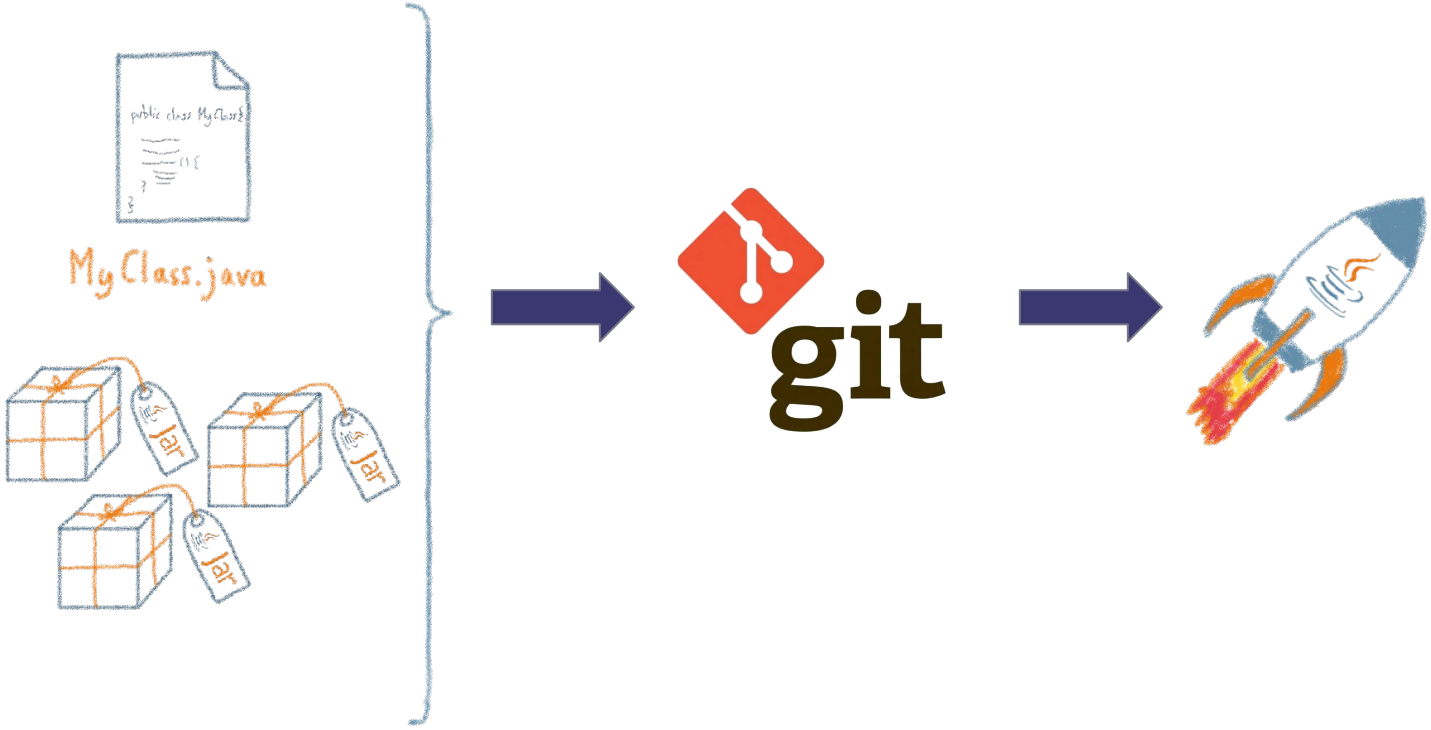
What if developers only developed?



clever cloud

@LostInBrittany

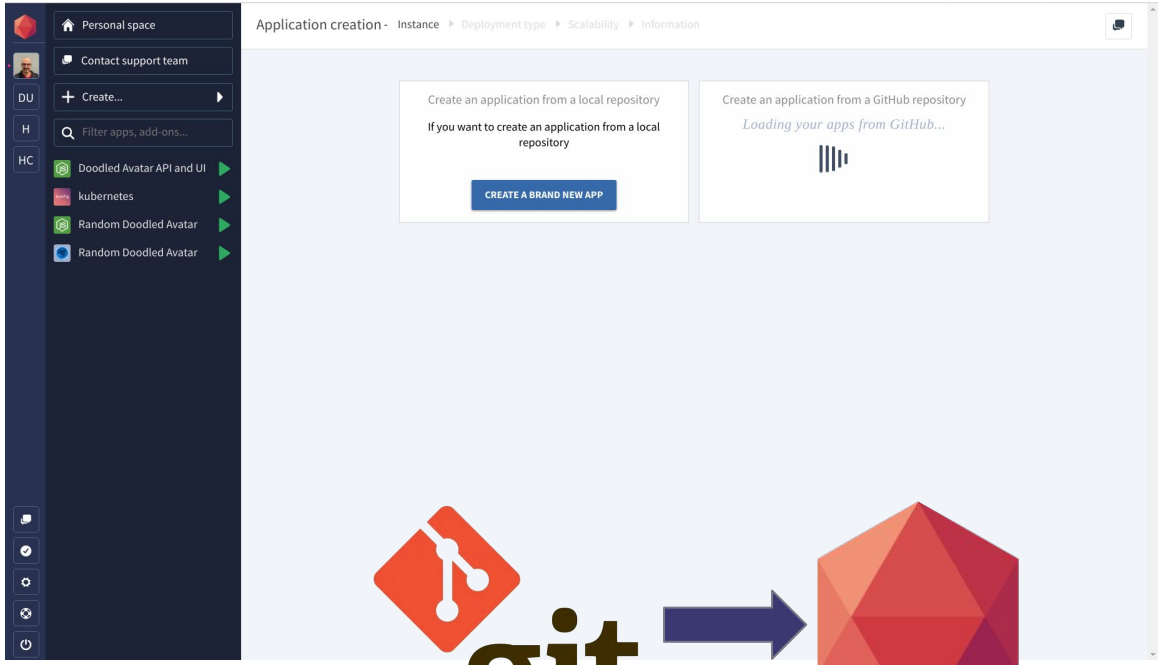
PaaS as cornerstone of a dev-centered IDP

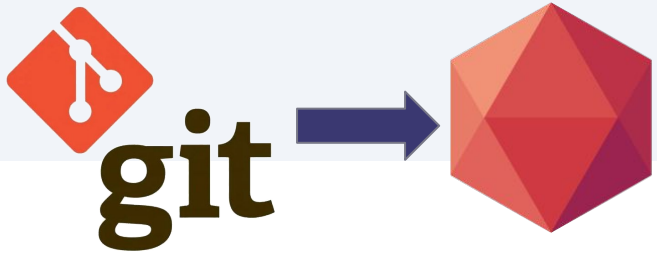


clever cloud

@LostInBrittany

Clever Cloud





clever cloud

clever cloud

@LostInBrittany

Some Links to go further

- There Is No Such Thing as a DevOps Engineer
- DevOps Topologies
- What is Platform Engineering
- Team Topologies
- Kratix
- Aiven
- Clever Cloud

clever cloud

@LostInBrittany