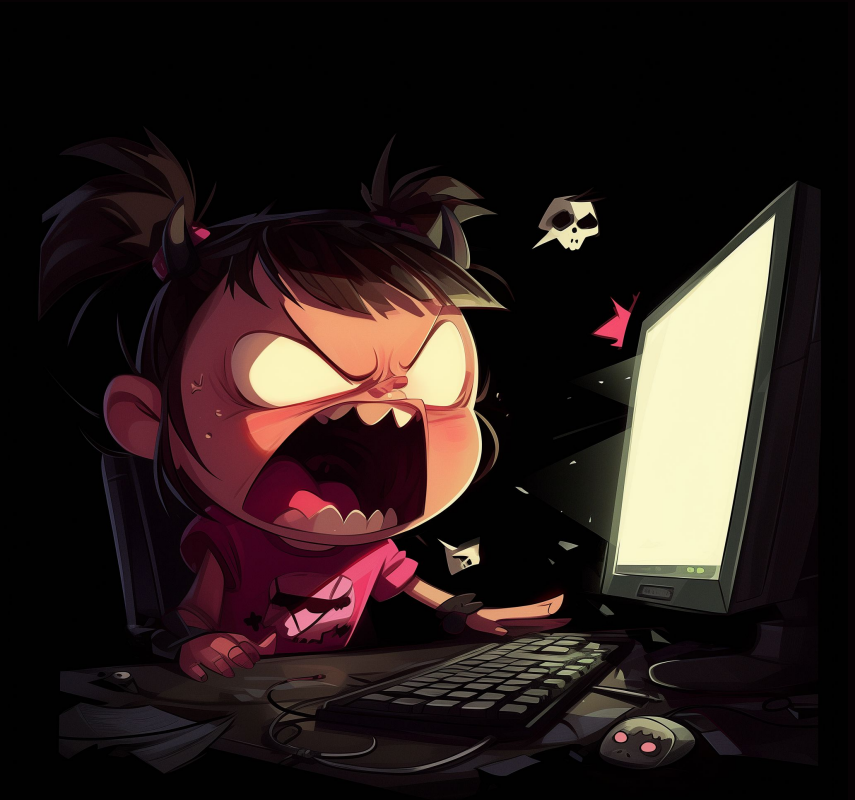
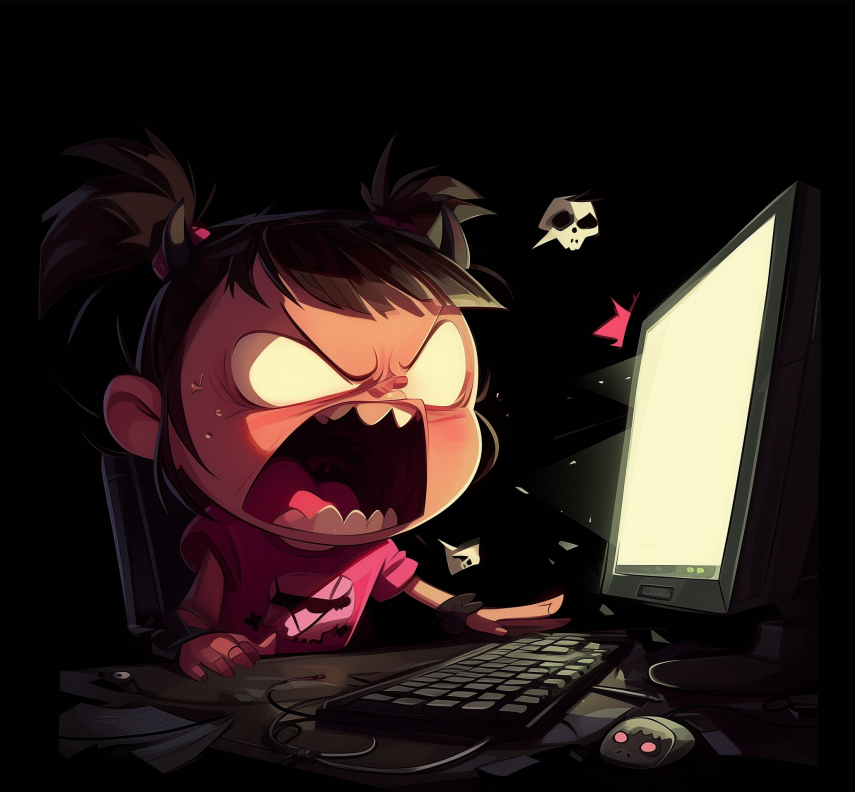


kubernetes



1. overview
2. getting started
3. tips & tricks

What is Kubernetes?

Commonly referred to as an **operating system for a datacenter**

A way to treat a selection of servers as if they were a single machine

What is it good for?

Resilience
Increase uptime, and resistance to errors

Performance
Allow more traffic / load

Deployment
A standard for running applications

Portability
If it runs on one Kubernetes, it will run on most of them

Ecosystem
Running in Kubernetes allows easy integration of infrastructure

Imagine the following scenario

You wrote a a web app in C#.

It’s really pretty. You’re starting to get users. It kind of works.

But… with great users comes great responsibility

They complain when your application is unavailable, or slow.

- It crashes
- It runs out of memory / cpu
- When you make updates
- It’s getting more traffic than it can handle

Run multiple instances of the application on one machine

Dolor ex Machina

But…

Servers are not perfect either.

- Hardware failures
- Software failures
- Restarts
- Updates
- Can get overloaded

Run multiple instances of the application on several servers

This is YAML

```yaml
apiVersion: v1
kind: namespace
metadata:
  name: my-first-namespace
  labels:
    important: “wrong indentation => BOOM!”
```

It’s a bit like finding
a mutated kitten

You’ve seen better
It smells like fish
Potty training didn’t take

But you get used to it

Common resources

Pod
Your application lives here. A docker image with some rules

Secret
Sensitive data - secrets - for your application

Configmap
Configuration for your application

Deployment
Describes the behaviour of your pods

Namespace
A way to separate resources

Service
A way to connect to an application across multiple instances

Ingress
Makes your services accessible outside of the cluster

...it's all YAML!

Stored inside Kubernetes (etcd)

Supports common actions

Create
Edit
Patch
List
Get
Delete

Kubernetes can be extended with
Custom Resource Definitions

What do you need?

Somewhere to run Kubernetes
Cloud / virtual machines / or local

Applications
You probably want something to run in Kubernetes. If you're just trying out, there are plenty of examples.
Your application might need to be adapted. 12factor.net

A way to deploy applications
There are a lot of ways to deploy applications to Kubernetes.
You probably want to automate this process. When in doubt….GitOps!

A bulletproof plan
Be clear on why you need Kubernetes - and be realistic with expectations

A Fabled YAML-ruler™
For getting all those indentations right.

What are some options?

Managed Services
Google, Amazon, Microsoft, DigitalOcean, Civo

Distributions
OpenShift, Rancher

Alternatives
Nomad
Swarm
Dokku
Podman

Similar but different
render.com
fly.io

So why do Fabled run it?

Standardised way of running a cluster of applications.
Unlikely to be abandoned, backed by strong foundations funded by megacorps

We make our own kubernetes distribution and infrastructure bundles.

We help other companies so they won't have to
No need for all companies to reinvent the wheel
More cost efficient and flexible than public clouds

Pure, unadulterated altruism?

fabled.se


Prometheus
Minio
Zitadel
Arango
Falco
Odigos
Ceph
Cuda
Java
Influx
Agones
NATS
Redpanda
ClickHouse
DGraph
Mimir
C#
Dragonfly
ArgoCD
Pomerium
Infisical
Cilium
Vitess
Postgres
Alloy
Tetragon
Grafana
Earthly
Go
OpenObserve
OpenTelemetry
Yugabyte
Dask
Surreal
Trivy
FluentBit
Coroot
TiDB
Redis
Garage
Istio
Loki
Tempo
Vaultwarden
Quickwit
Rust
Tekton
Prefect

The old dude is boring

Time for something

badass

DEMO!

https://github.com/fabled-se/k8s-demo