

Career in Clouds:

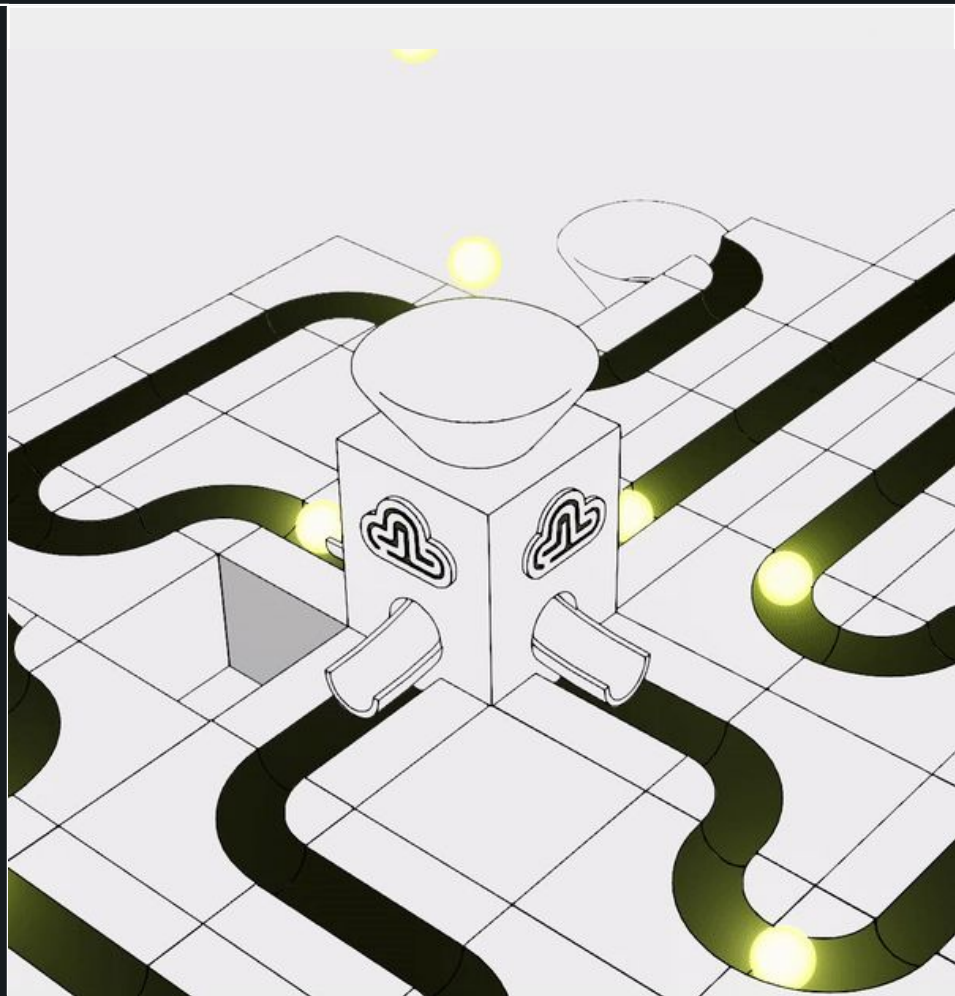
Why to become a DevOps Engineer



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Jakub Stehlík
DevOps Engineer





We are One-stop-shop for [DevOps, Cloud & Kubernetes]



Advanced
Consulting
Partner

20

Top cloud
experts

100+

Kubernetes
clusters



What is DevOps?

Not so fast



TL;DR [Pros]

- Cross functional role with multiple areas to work on
 - application architecture, monitoring, release management, performance optimization ...
- Loads of toys to play with
- Detective work
- Moneeey



TL;DR [Cons]

- On-Call
 - Waking up at night to deal with production issue is not fun
- Writing “shopping lists”
 - YAML, JSON...
- Troubleshooting networking
 - ...sucks

DevOps career [summary]



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DevOps



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- Merging **Developers & Operations** to streamline development and releases
- With **large infrastructure** comes great responsibility :)
- Automation is a necessity in large dynamic distributed systems like **Kubernetes** 🐼





<Buzzword> engineer

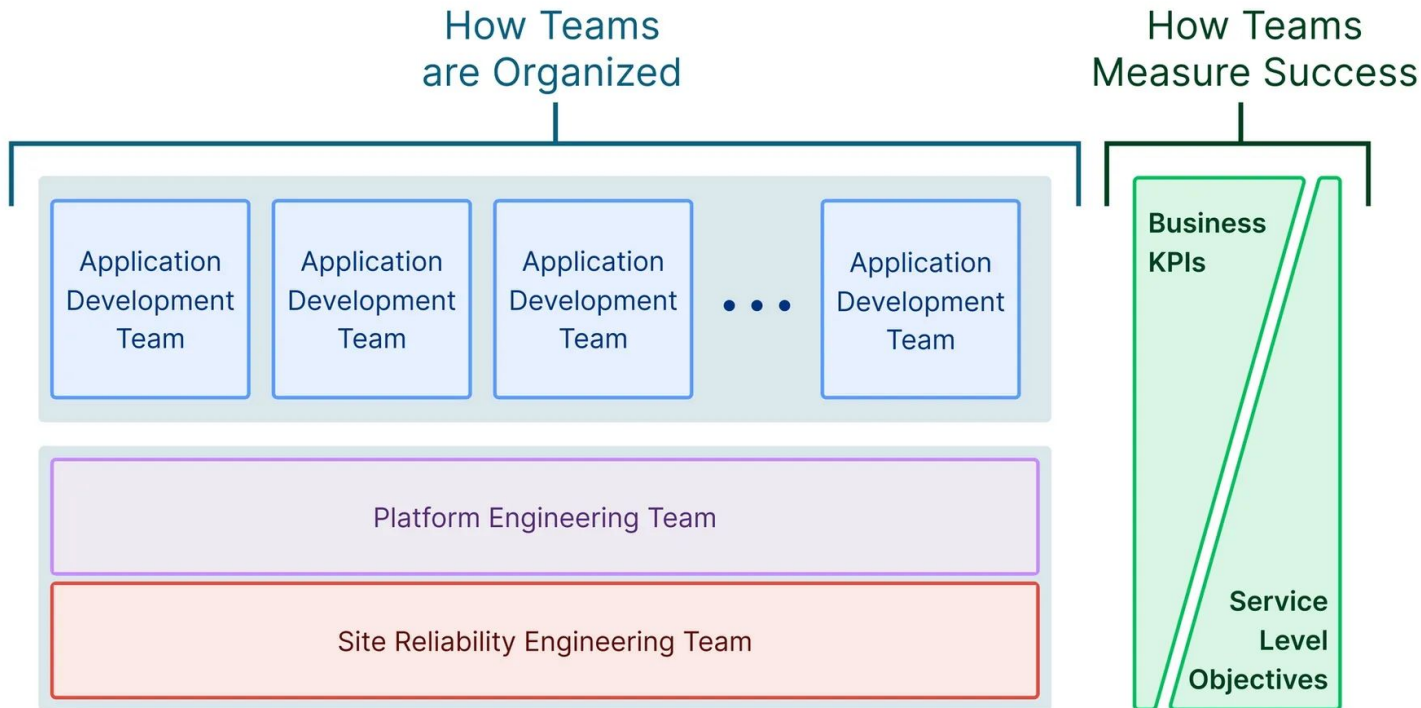
- **Site Reliability Engineering:**
 - Managing infrastructure in automated, software defined way
- **Platform Engineering:**
 - Self-service tools and workflows



SRE ? Platforms ?



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What DevOps/**** really is

- Helping developers **run** & **deliver** best results, as fast as possible
- Helping in different areas
 - Performance optimization
 - Release management
 - System Architecture
 - Infrastructure
 - Observability
 - ...
- **Improve** & **define** processes to deliver better products





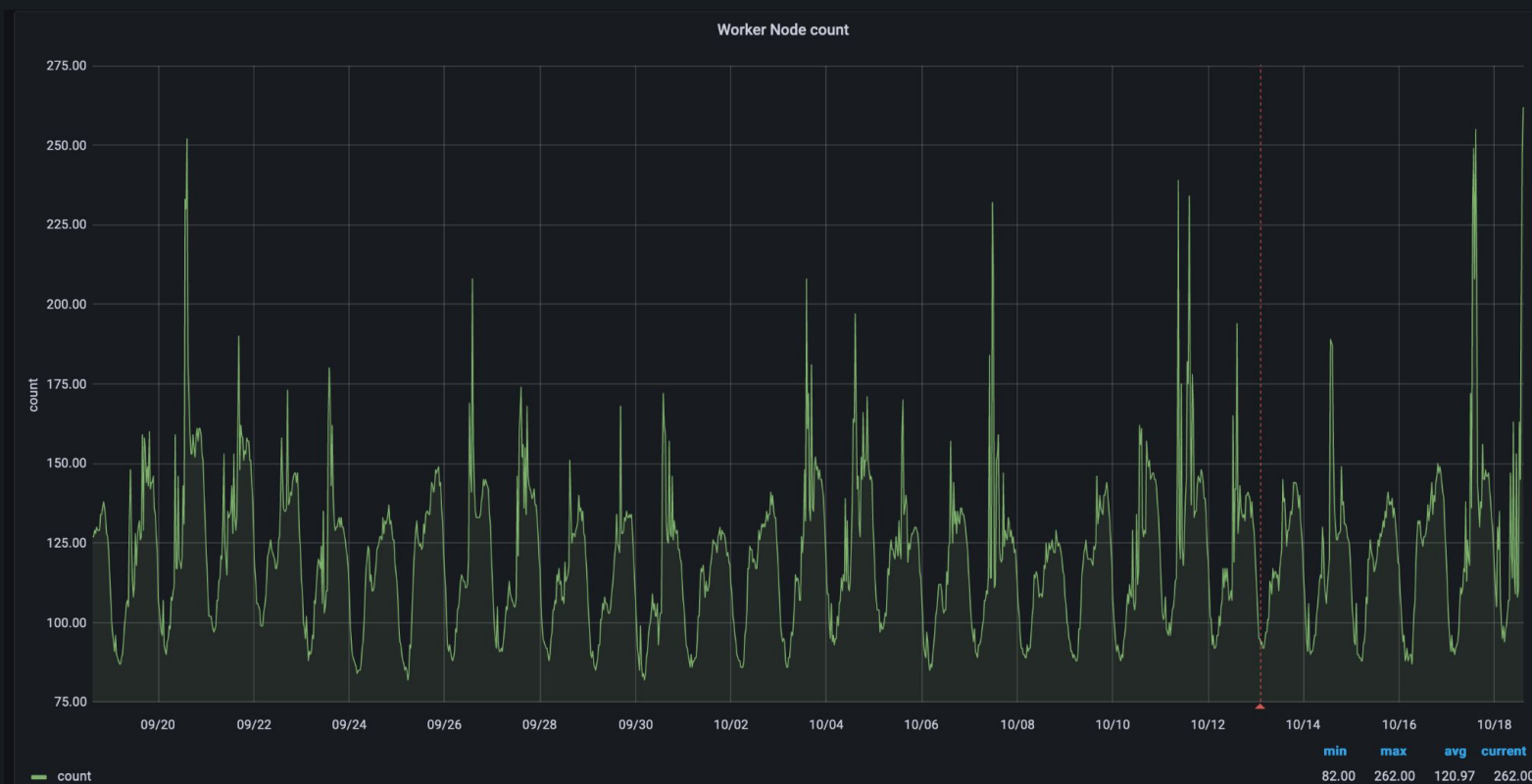
[Day in the life of a DevOps engineer]



[Cloud migration]

- Migration from on-premise **data center** to **AWS + Kubernetes**
- Higher **availability**, less disruptions
- **Auto-scalable + auto-healing**
- Less day-to-day

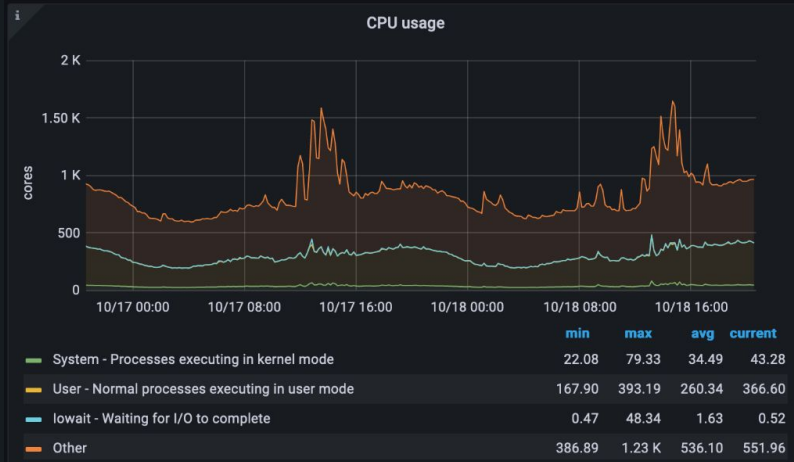






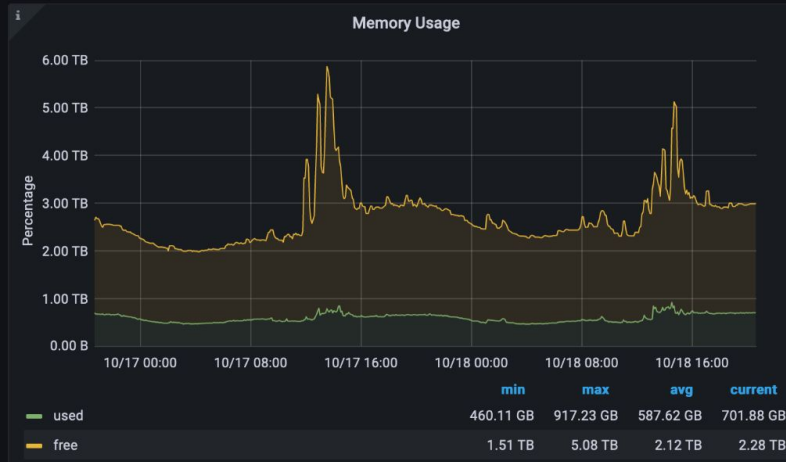
3

i	CPU cores total	i	Allocatable CPU c...	i	CPU usage	i	CPU requests
	928		928		274.36		625.28



154

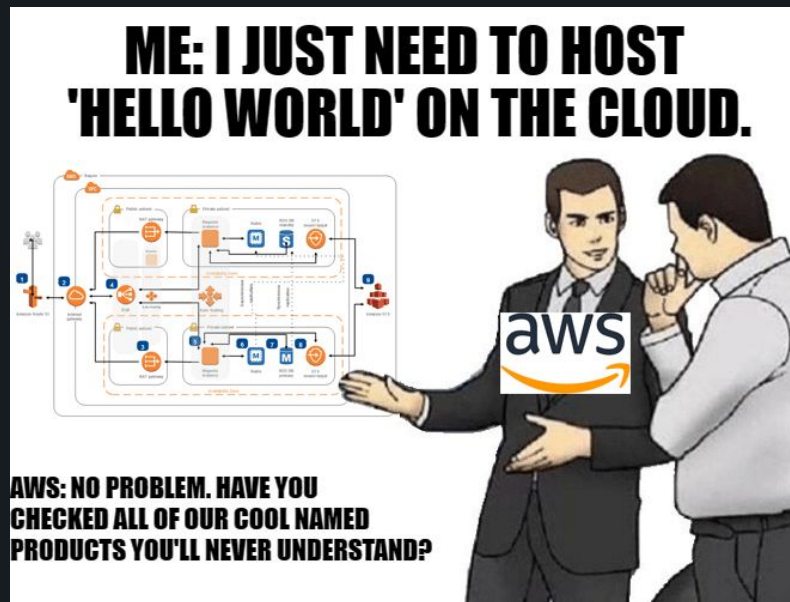
i	Memory total	i	Allocatable Memory	i	Memory usage	i	Memory requests
	2.98 TB		2.53 TB		700 GB		988 GB





[Cloud + DevOps = ❤️]

- Picking the right services
- Pricing
- Infrastructure-as-code
- Knowledge-sharing





Sad engineering story...

Solved all your problems. You're welcome.





[Security]

- Customer was under **DDoS** attack which was making their **services unavailable**
 - This was going on/off for couple of days
- Implemented solution using **Cloudflare** to **hide customers IPs** behind their proxy
- Mitigating attacks





[Performance Optimization]

- Possible **performance optimization** of an application or the infrastructure
- Value of the product
- Playing, testing
- Pushing developers to look at it & pointing to possible issues within the code





[Observability]

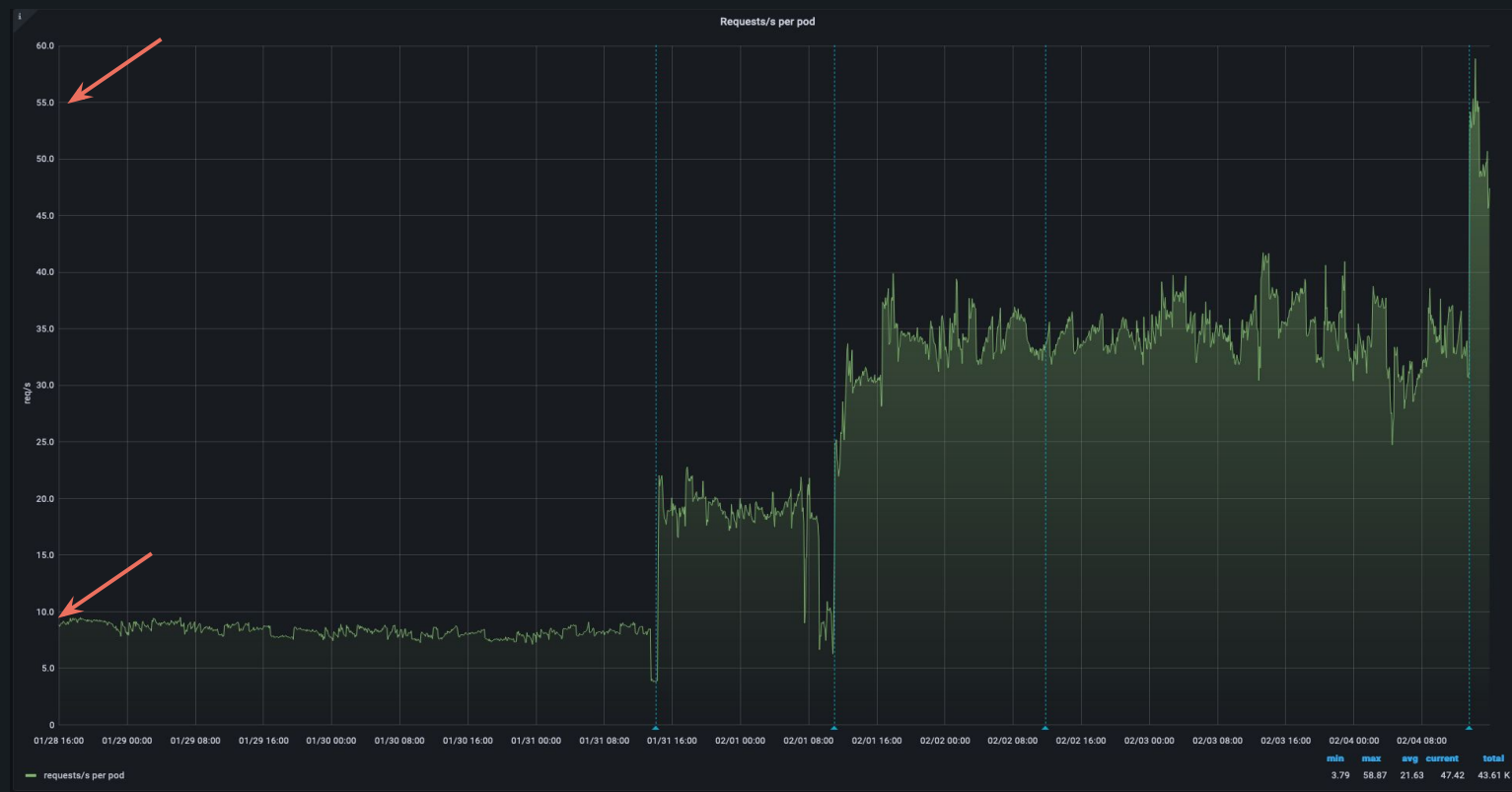


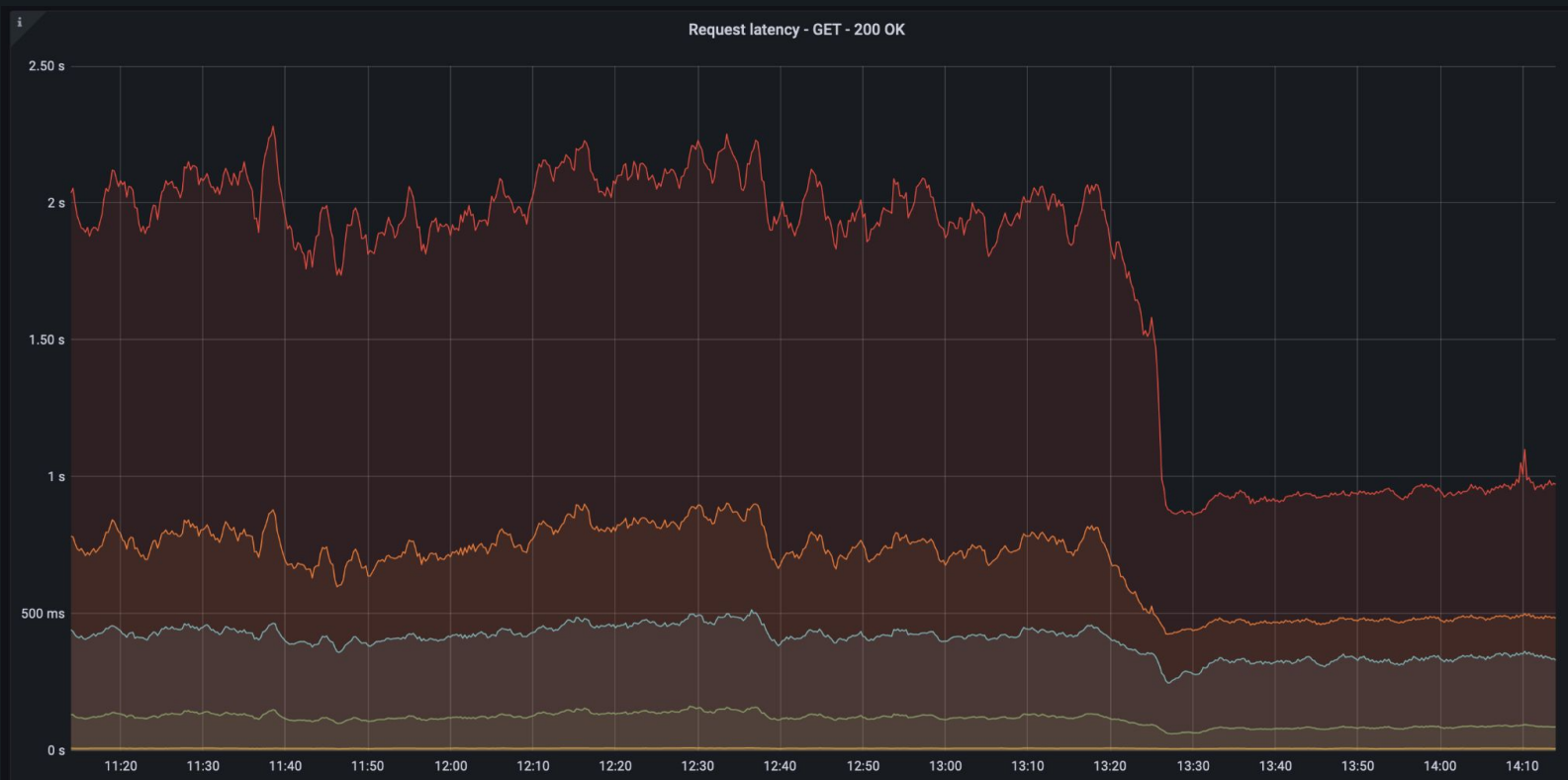


[Performance Optimization]

- **Performance investigation** to make sure we got the cause right
- **Reason:** Parsing large number of XML files within each request









[Troubleshooting DNS]

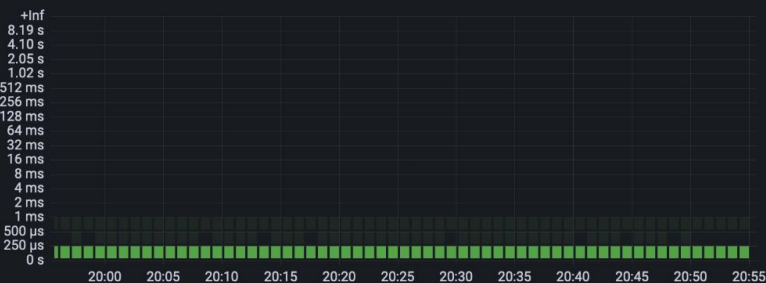
- Observing **strange behavior** with multiple applications migrated to the cluster
- Application pods restarting in **random times** & **unable to resolve** DNS names
- Causing **cascading failures** across cluster applications
- In peaks we were doing around **1 million DNS requests per minute**

IT Engineer's Haiku:

It's Not DNS
There's NO WAY it's DNS
It was DNS



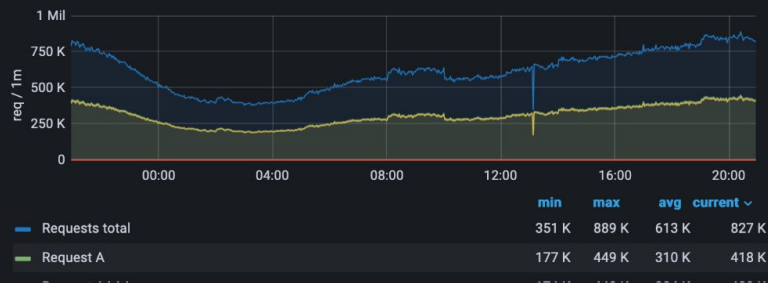
Request Latency



Forward Latency



CoreDNS Requests



CoreDNS Cache



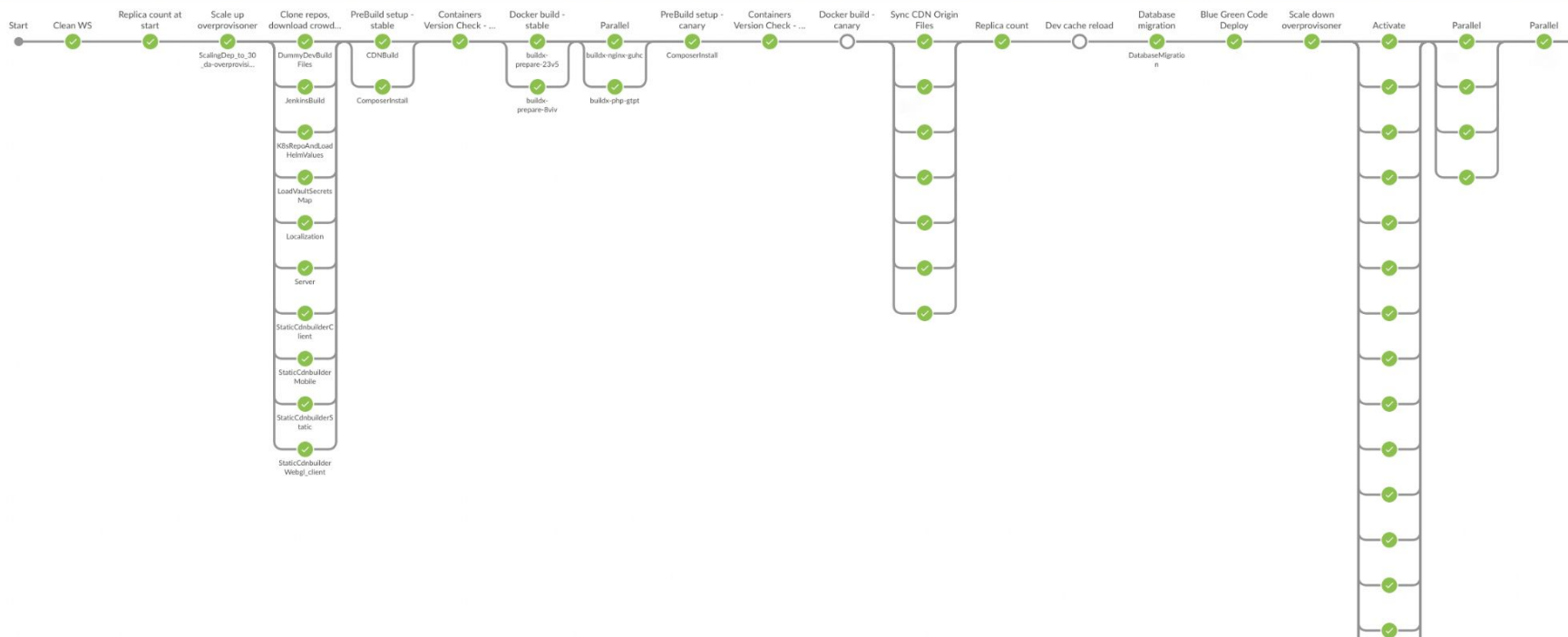
[CI/CD – Automation]



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- Automate everything
 - Software delivery is crucial step
 - Validate software before delivery
- Frequent repeatable deployments
- Continuously test & deliver software versions to production







[DevOps Life Summary]

- Observability
- Being a Detective
- System Architecture
- Cloud Native Software
- Automation, CI/CD
- Release management
- Chaos engineering
- Infrastructure as Code



Can I be a ... engineer

- If you like **challenge**, have **broad understanding** & **interest** in tech
- **Programming** background/experience helps
- Enjoy being a **detective**, trying to figure out why something didn't work as it should
- Love for **graphs/monitoring** and writing **YAML files** really helps :)





Let's talk!

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