CONTINUOUS DELIVERY

LIKE YOU KNOW NO FEAR 😱

@chrisuhl

I'm Chris

I work for a munich based startup called Matmatch

Matmatch

We're a development team of 5 (and me) trying to change the world of materials

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THE RUNWAY
METAPHOR
24
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THE DOWNHILL
METAPHOR
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ADJUST QUICKLY IS A *VERY* IMPORTANT BUSINESS REQUIREMENT

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BIG RISKS

- building the wrong product
- being too slow

It's our duty as software professionals to get ideas out there as fast as possible*

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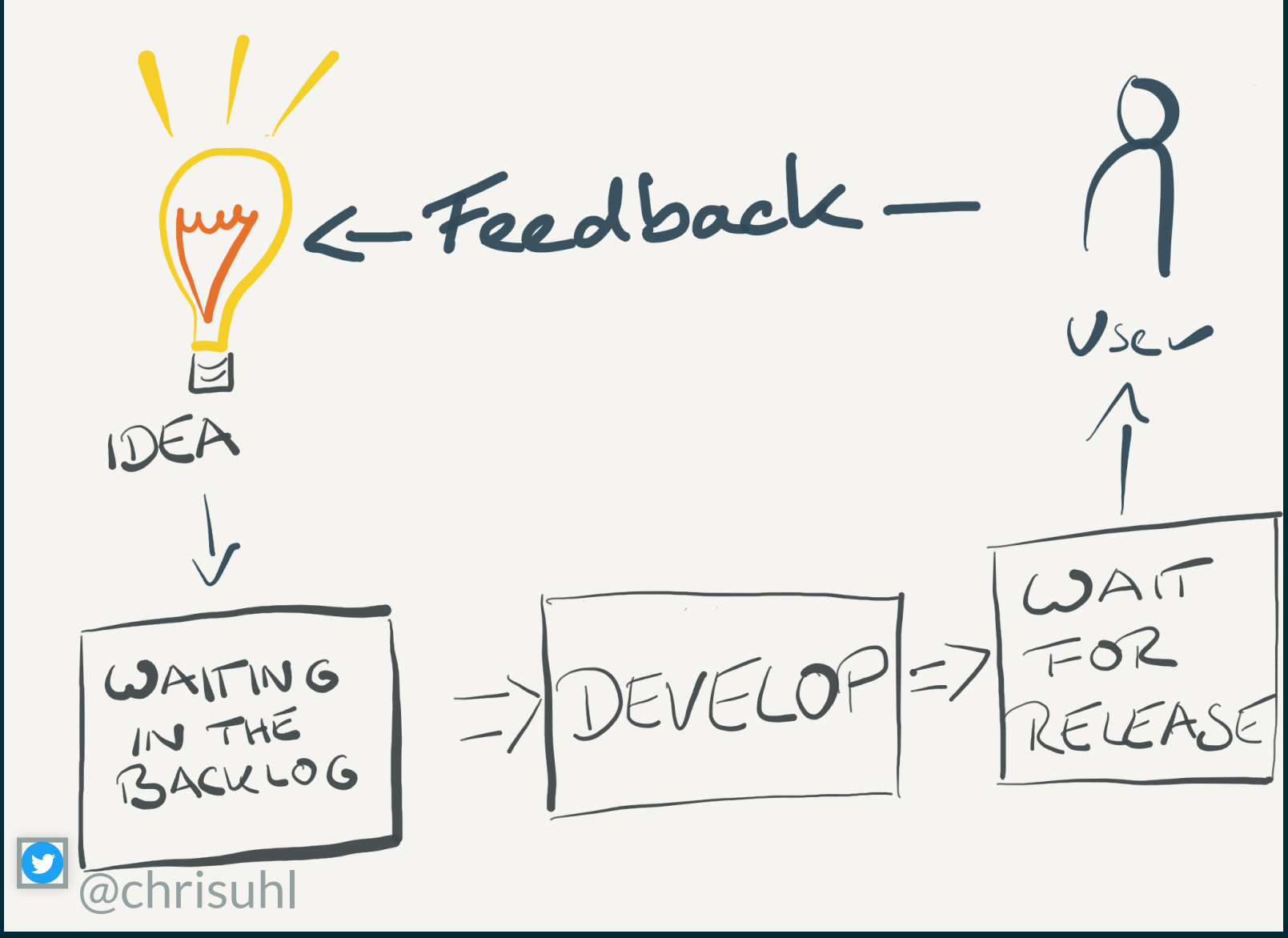
Feedback
User
IDEA
WAITING IN THE BACKLOG
DEVELOP
WAIT FOR RELEASE
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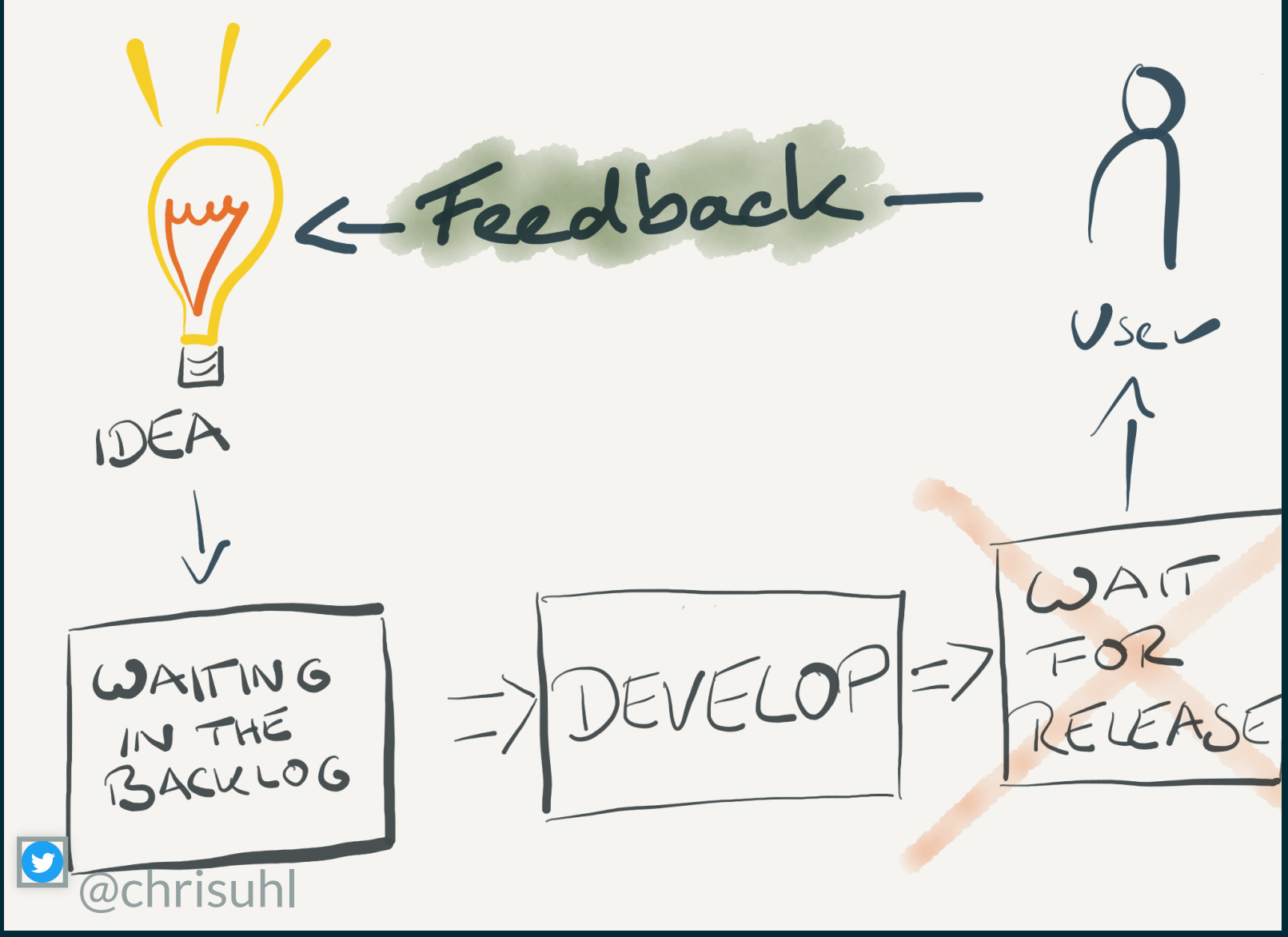
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WHAT DOES DONE MEAN?

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WHAT DOES DONE MEAN?

- to you

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WHAT DOES DONE MEAN?

- to you
- to your PO

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WHAT DOES DONE MEAN?

- to you
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- to your CEO

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WHAT DOES DONE MEAN?

- to you
- to your PO
- to your CEO
- to your customer

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Done means live and available to the customer, everything else is just an excuse

Me, for the lack of a better definition

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WHAT IS CONTINUOUS

- -integration
- -delivery
- -deployment

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CONTINUOUS

EGRATION

D → TEST →

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CONTINUOUS

GRATION

DELIVERY

1 CLICK

SM

) → TEST → ACCEPTANCE → DEPLOY → TE

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CONTINUOUS

EGRATION | DELIVERY | DEPLOYME

D → TEST → ACCEPTANCE → DEPLOY → SM TE

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WE DEPLOY ON FRIDAYS

Any do-not-deploy rule is a synonym for lack of tests, lack of trust or lack of feedback

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WHAT TO OPTIMIZE FOR

MTBF VS. MTTR

Mean Time Between Failure *vs* Mean Time To Recovery

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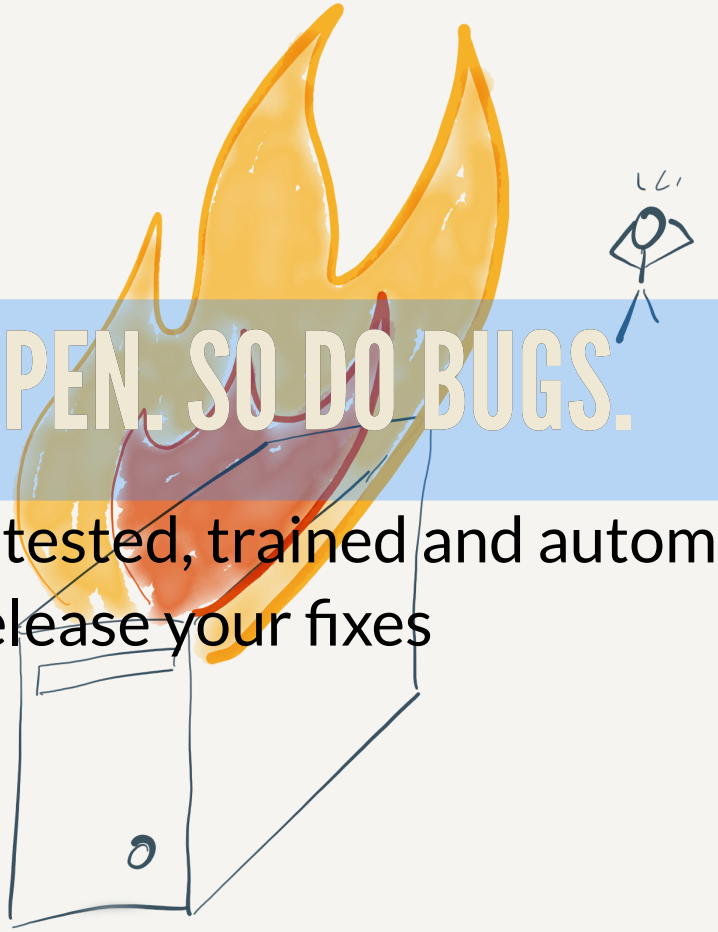
ERRORS HAPPEN. SO DO BUGS.

That's when you need a tested, trained and automated way to release your fixes



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DELIVERY PERFORMANCE

	Elite	High	Mid	Low
Freq	> 1/h	1/h - 1/d	1/w - 1/m	1/w - 1/m
Lead Time	< 1h	1d - 1w	1w - 1m	1m - 6m
MTTR	<1h	<1d	<1d	1w - 1m
CFR	0-15%	0-15%	0-15%	46-60%

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TIME SPENT

	Elite	High	Mid	Low
new work	50%	50%	40%	30%
rework	19,5%	20%	20%	20%
security	5%	5%	5%	10%
defects	10%	10%	10%	20%
support	5%	10%	10%	15%

[DORA State of DevOps Report 2018 p32]

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DEMO

please go to https://demo.matmatch.com

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THE MATMATCH PATH TO CD

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THE MATMATCH PATH TO CD

1. Fix Deployment Automation

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THE MATMATCH PATH TO CD

1. Fix Deployment Automation
2. Fix Testing

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THE MATMATCH PATH TO CD

1. Fix Deployment Automation
2. Fix Testing
3. Fix Review Process

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THE MATMATCH PATH TO CD

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2. Fix Testing
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4. Fix Observability

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THE MATMATCH PATH TO CD

1. Fix Deployment Automation
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5. Fix Release Process

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THE MATMATCH PATH TO CD

1. Fix Deployment Automation
2. Fix Testing
3. Fix Review Process
4. Fix Observability
5. Fix Release Process
6. Fix Fear

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GETTING THERE

```
make deploy production
```

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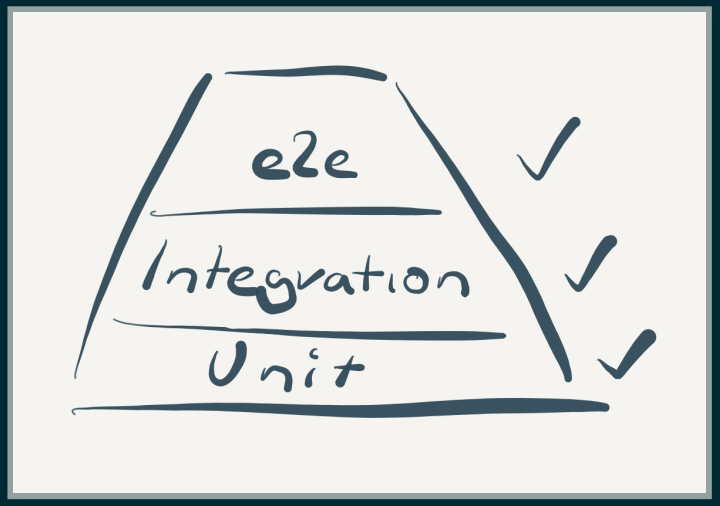
GETTING THERE

FIX TESTING

Separate our tests into different build steps for quicker feedback



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GETTING THERE

FIX TESTING

Speed up the build -> Build on big ec2 spot instances

(We went from TravisCI over AWS CodeBuild to Gitlab Runners)

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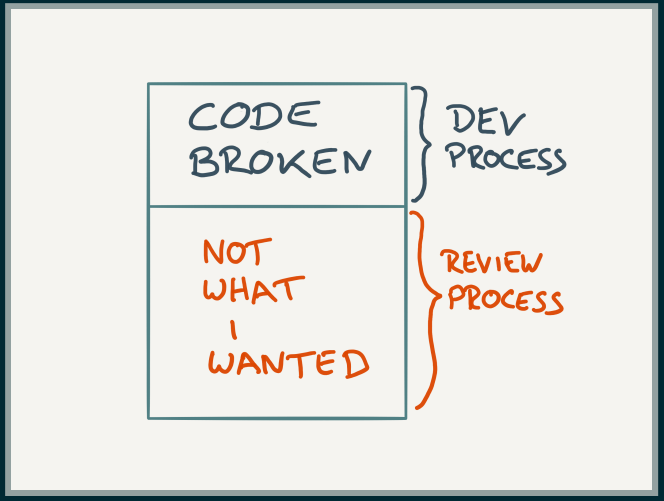
GETTING THERE

FIX THE REVIEW PROCESS



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GETTING THERE

FIX THE REVIEW PROCESS

Demo to the company what you did. It's so easy to lose track of what you released

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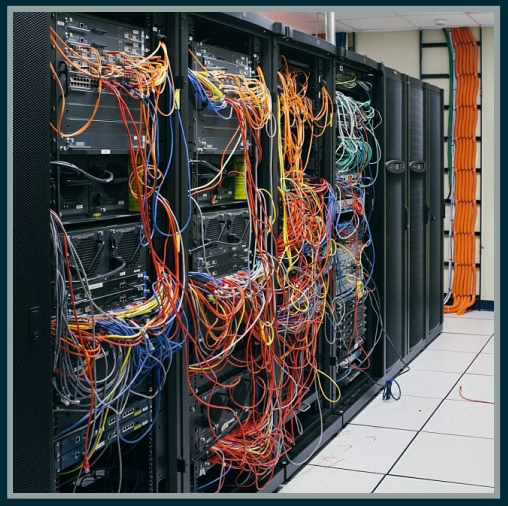
GETTING THERE

FIX OUR ENVIRONMENT

Dependable releases need dependable infrastructure



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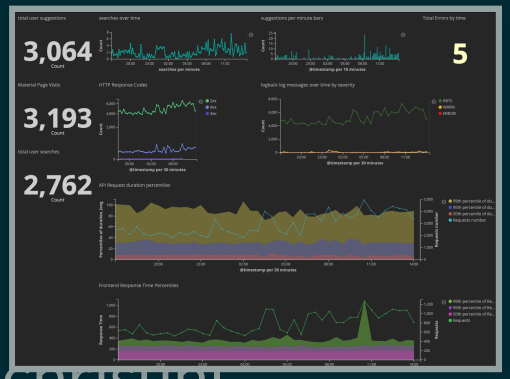
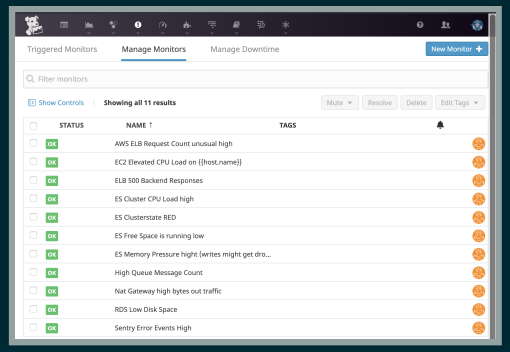
GETTING THERE

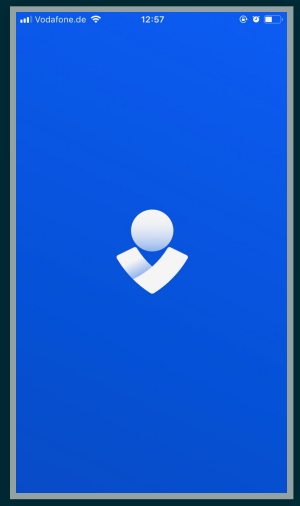
OBSERVABILITY OF THE SYSTEM

Get good metrics and feed them into good tools

Elastic Stack - Datadog - Opsgenie







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GETTING THERE

COPS OF THE DAY

Increase operational knowledge in the team:

Random pair of developers run the "morning checklist"

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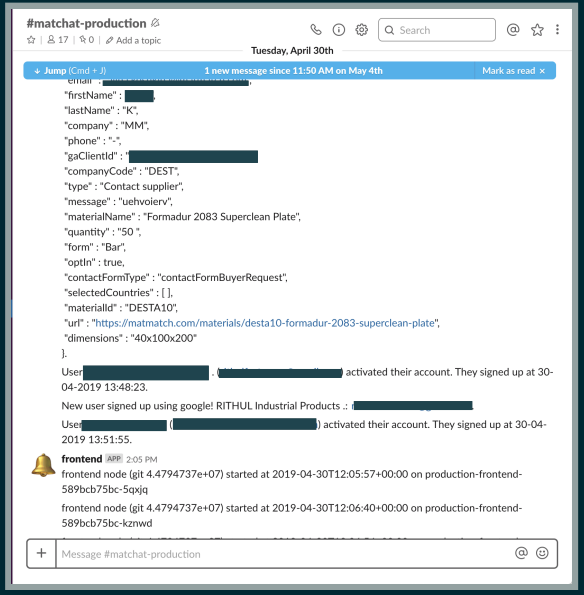
GETTING THERE

CHATOPS

Be involved in the system behavior - convert important business events to chat messages



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GETTING THERE

FIX RELEASE PROCESS

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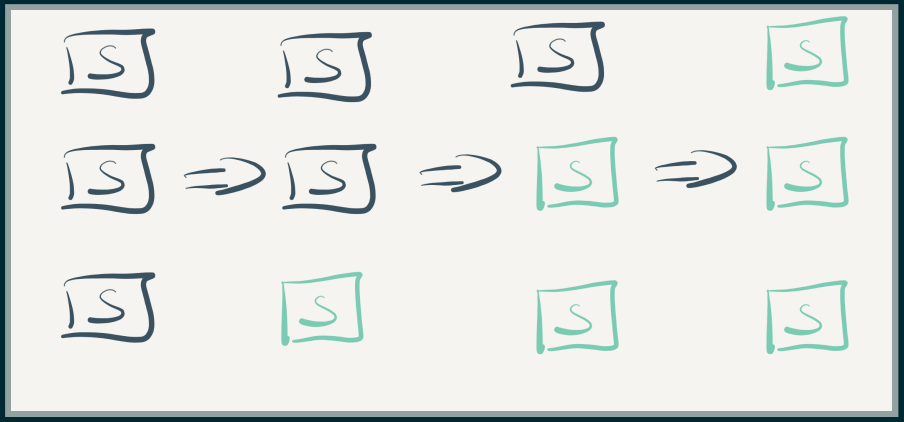
GETTING THERE

ROLLING RELEASES



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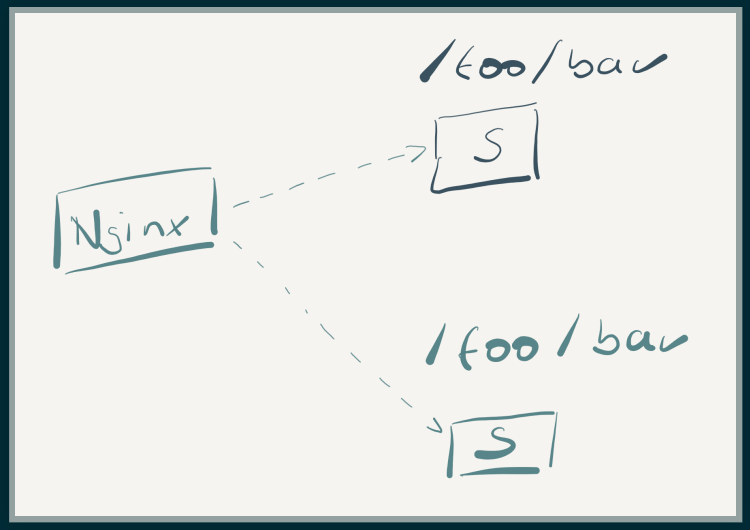
GETTING THERE

SHADOW RELEASES



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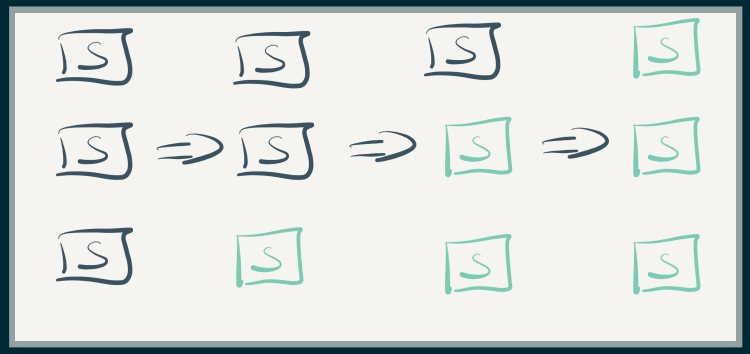
GETTING THERE (FOR COMPLETENESS)

CANARY RELEASES

We don't to this yet, but looking forward to it



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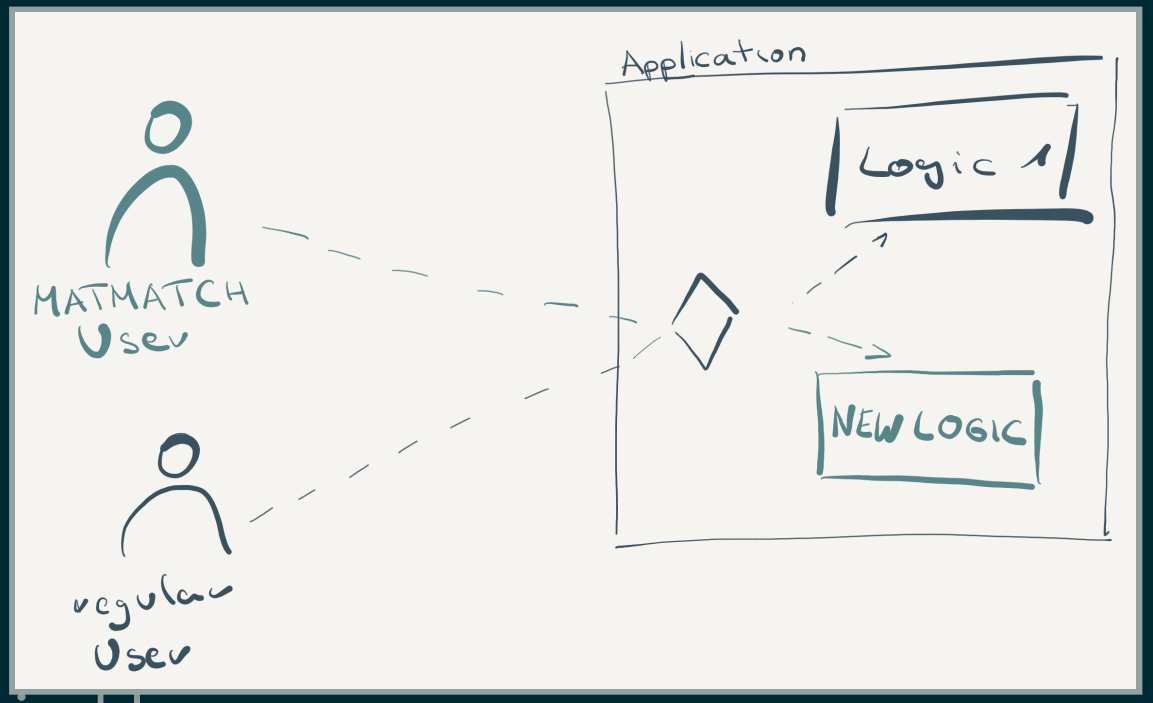
GETTING THERE

RIGHTS BASED RELEASES



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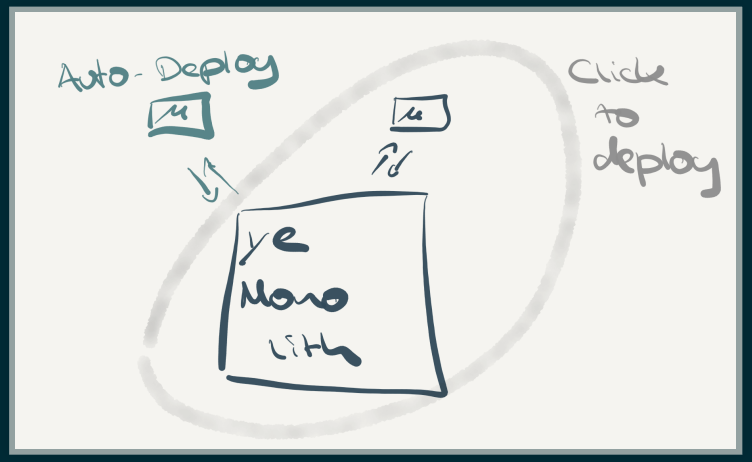
GETTING THERE

LIMIT FEAR: SMALL RELEASES



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GETTING THERE

LIMIT FEAR: MAKE IT BORING

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GETTING THERE

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1. Automate everything until the "Deploy" button (Continuous Delivery)

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GETTING THERE

LIMIT FEAR: MAKE IT BORING

1. Automate everything until the "Deploy" button (Continuous Delivery)
2. Make pushing the button a boring non-event

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GETTING THERE

LIMIT FEAR: MAKE IT BORING

1. Automate everything until the "Deploy" button (Continuous Delivery)
2. Make pushing the button a boring non-event
3. Remove the button, no one cares

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ISSUES WE FACED

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- Learning Helm was more effort than we thought

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- K8S: Health and readiness endpoints

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- There are no multi-level-wildcard certificates

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- Dependencies between services (stateful set by accident)

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ISSUES WE FACED

- Learning Helm was more effort than we thought
- K8S: Health and readiness endpoints
- K8S: Pod limits
- K8S overload: Rebuild everything from scratch
- There are no multi-level-wildcard certificates
- Dependencies between services (stateful set by accident)
- Fixing logic in a lot of places (gitlab-ci, helm charts)

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ISSUES WE FACED (SUMMARY)

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- Architectural and ops problems bite you twice as fast

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ISSUES WE FACED (SUMMARY)

- Architectural and ops problems bite you twice as fast
- But you notice them before they hit production

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ISSUES WE FACED (SUMMARY)

- Architectural and ops problems bite you twice as fast
- But you notice them before they hit production
- The rest just needs to be worked off piece by piece

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ONGOING ISSUES

- Duplicated code in gitlab-ci.yml files
- Duplicated code in helm charts
- Deployments fail to clean up every once in a blue moon

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SUMMARY

- We are faster than before
- We have less defects and issues than before
- We have a ❤️ for production

5,25 humans => up to 15 releases / day 🔥

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KEY TAKEAWAYS

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- Continuous Deployment pays off big time

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KEY TAKEAWAYS

- Continuous Deployment pays off big time
- Slow and steady wins the race to get there
- It's not just tech, it's also emotions
- Don't play too much with your K8S prod cluster
- Most things you have to fix for CD are things that help you a lot in general

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SUGGESTED READINGS

- Continuous Delivery, Jez Humble
- Accelerate, Nicole Forsgren Phd
- Release It, Michael Nygard
- The Phoenix Project, Gene Kim

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QUESTIONS?

My twitter is @chrisuhl

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Examples, slides and everything else on github:
https://github.com/christianuhlcc/cd-like-you-mean-it

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w