

SRE: It's People All the Way Down

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Heroku, a Salesforce.com company





```
$ heroku create sushi
```

```
Creating sushi... done
```

```
http://sushi.herokuapp.com/ | git@heroku.com:sushi.git
```

```
$ git push heroku master
```

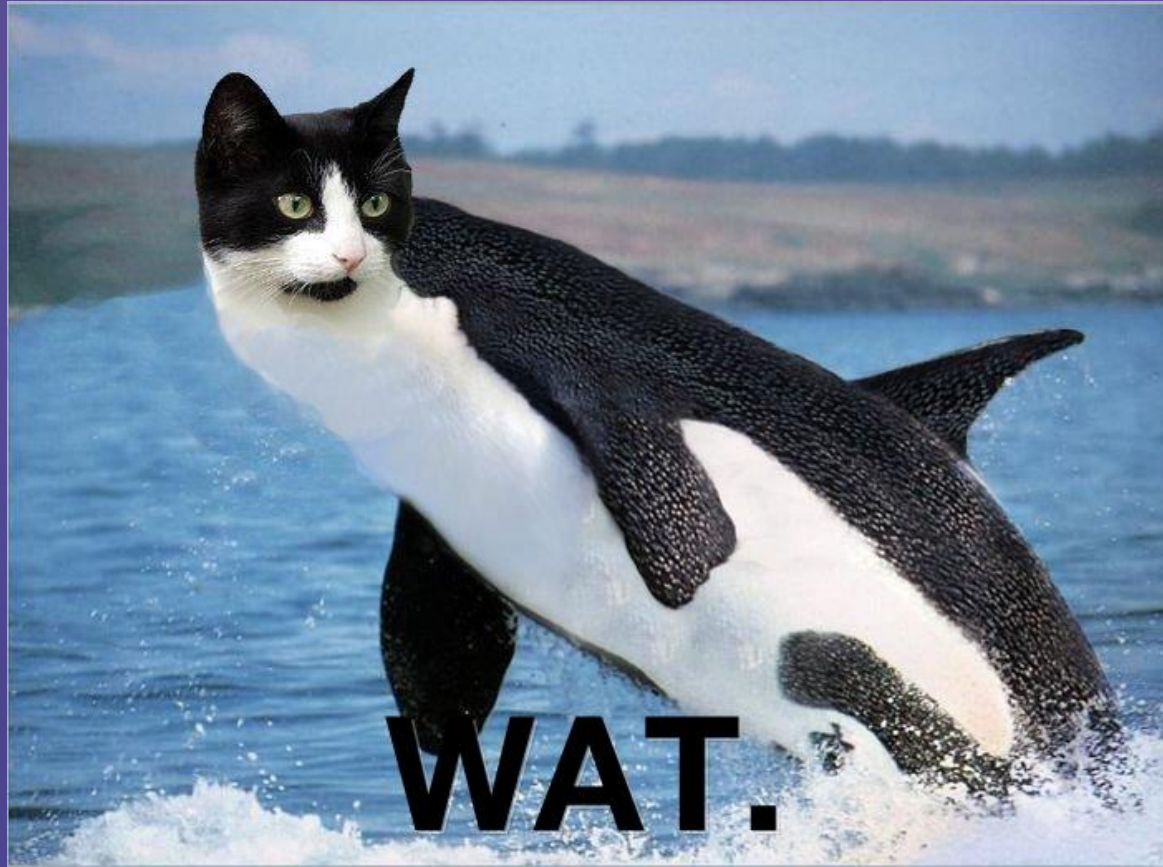
```
----> Heroku receiving push
```

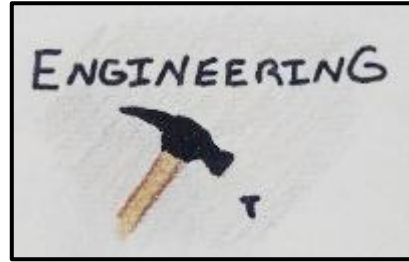
```
----> Rails app detected
```

```
----> Compiled slug size is 8.0MB
```

```
http://sushi.herokuapp.com deployed to heroku
```

Total Ownership Model

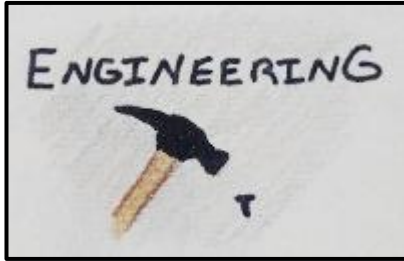




Backpressure
Pages

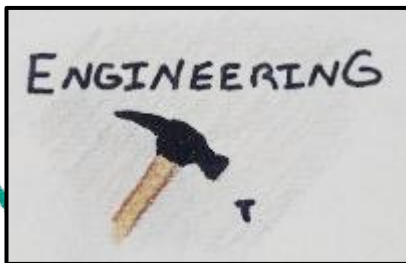
Vision
Power
Control





Backpressure
Pages

Vision
Power
Control



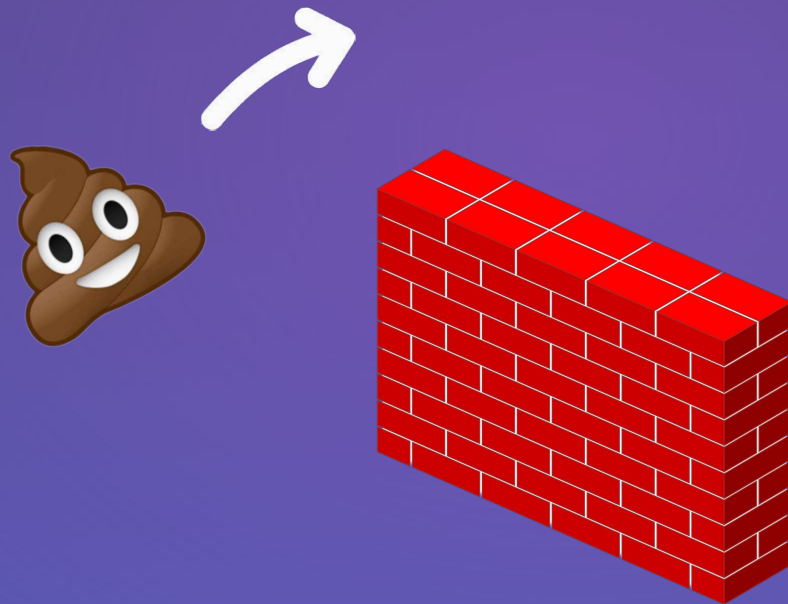
Vision
Power
Control

SRE

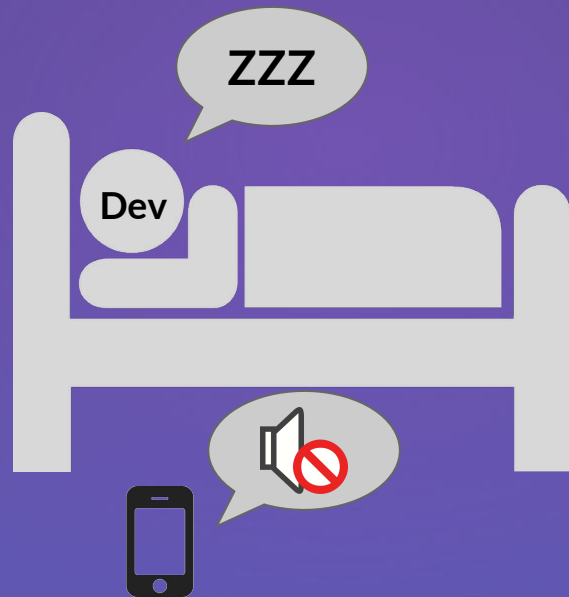
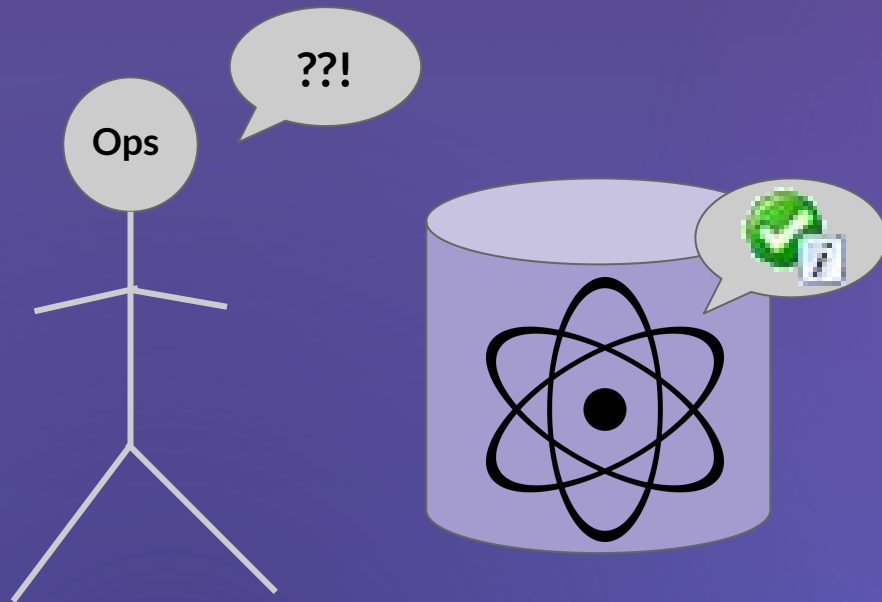
Backpressure
Pages

The Old Model

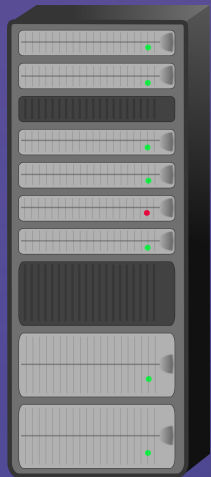
- Dev writes it, Ops runs it
- Dev: move fast
- Ops: protect their on-call
- Ops says “No” a lot



Ops Knowledge Gap



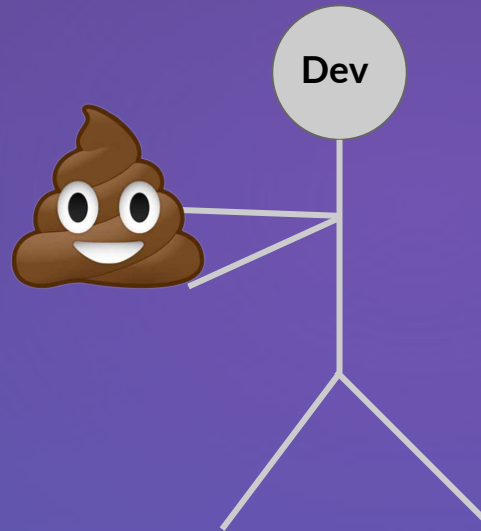
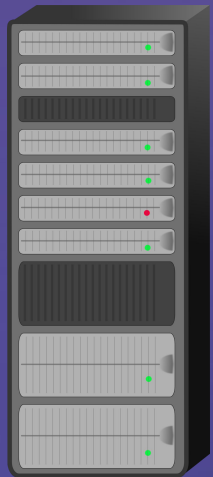
Saying “No” Isn’t Scalable!



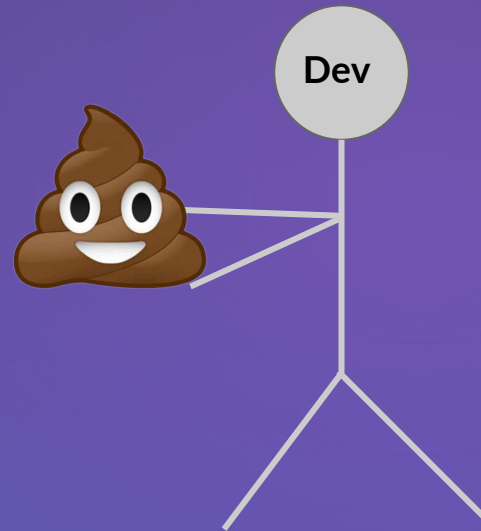
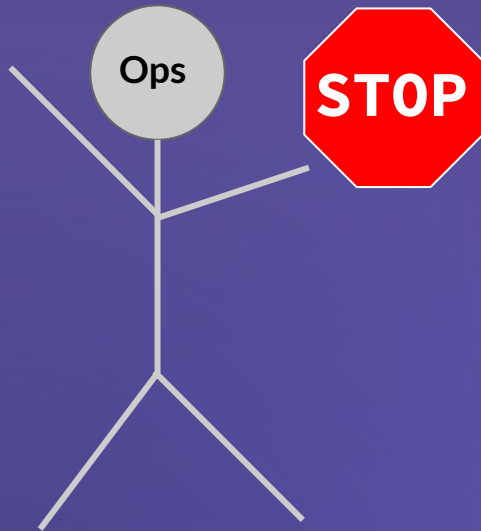
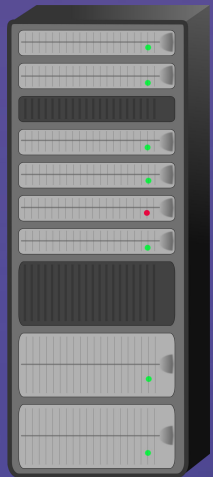
Ops

Dev

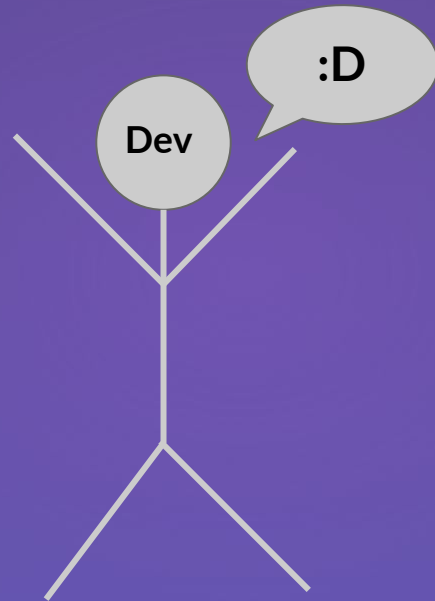
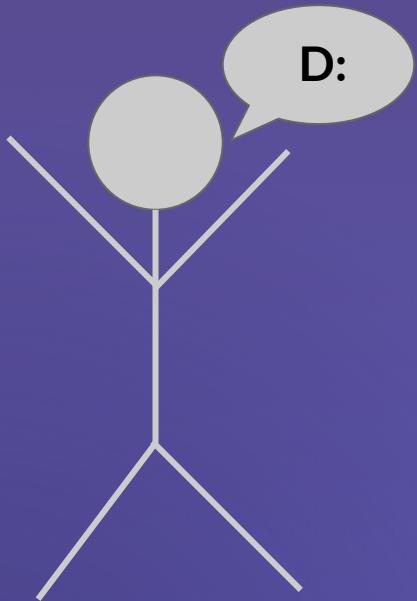
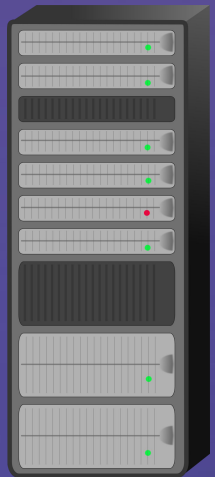
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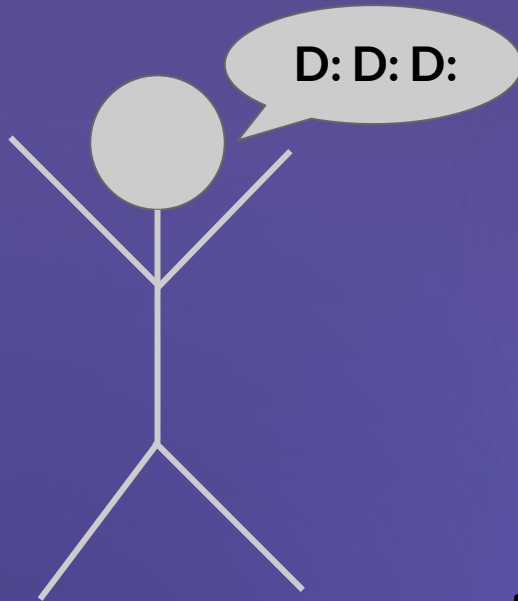
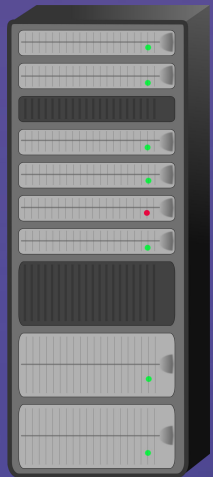
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Saying “No” Isn’t Scalable!





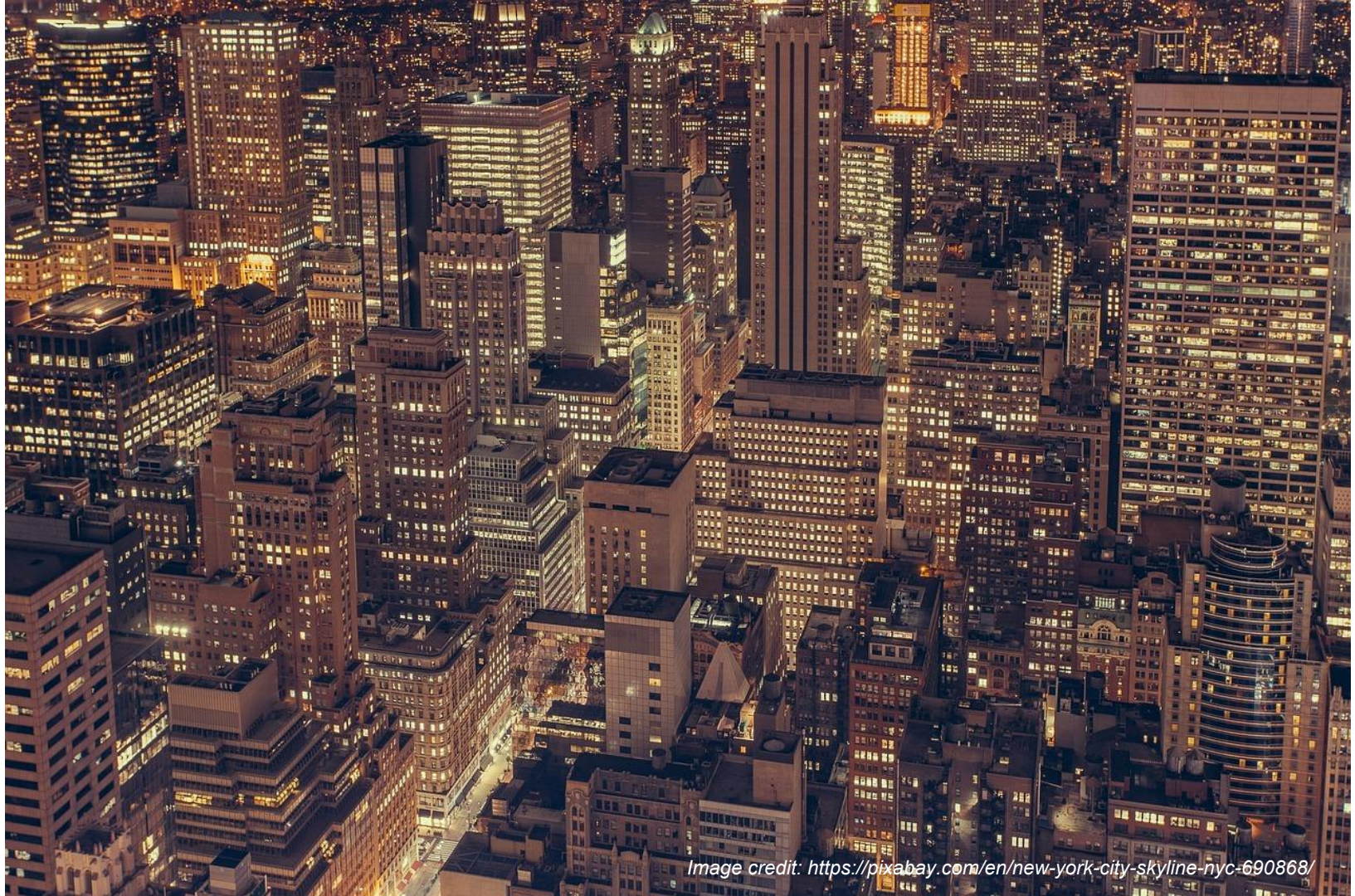


Image credit: <https://pixabay.com/en/new-york-city-skyline-nyc-690868/>



Image credit: https://www.flickr.com/photos/jonas_lowgren/4997514953

Burnout



Image credit: https://www.nps.gov/features/yell/slidefile/history/1946_1999/structures/Images/15066.jpg



How to Make On-Call not Deadly

- primary/secondary pager rotation
- work-life balance (go the heck home)
- make sure enough people are in the on-call rotation
- 4-hour incident-response shifts





Attrition is a Reliability Risk

“

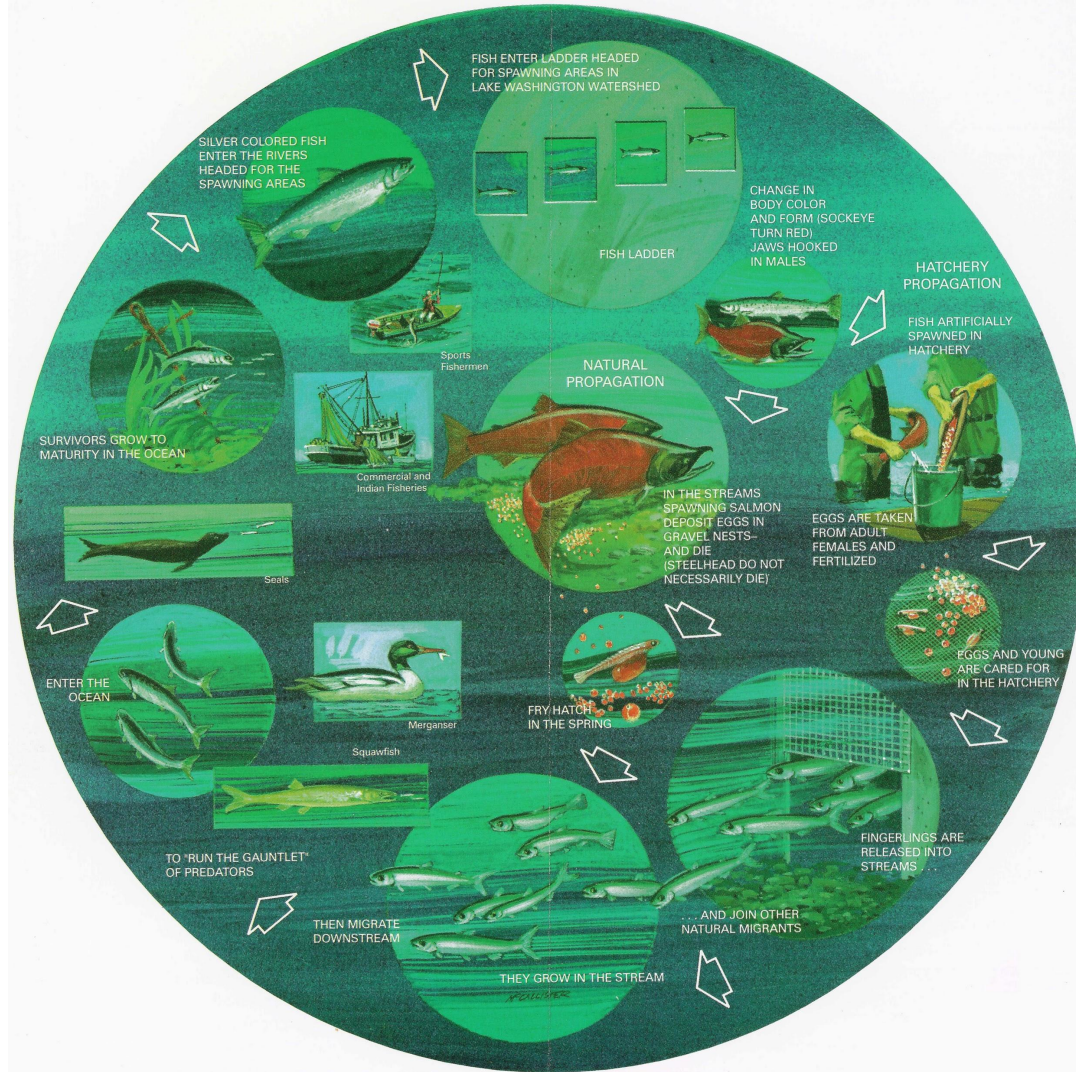
*I don't want to have to
backfill your a\$@.*

– Lex



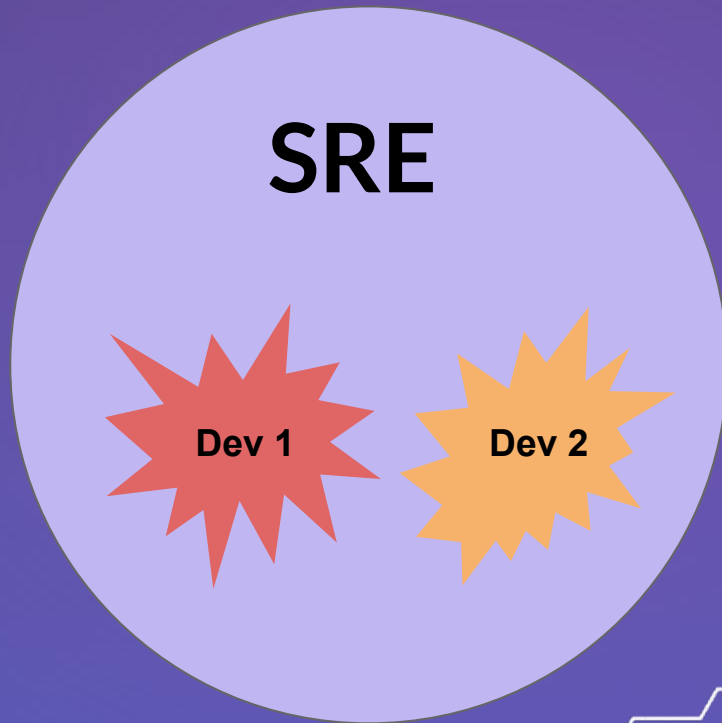
Incident Lifecycle Process

SRE is involved in every incident we have,
so we write and update how it's done

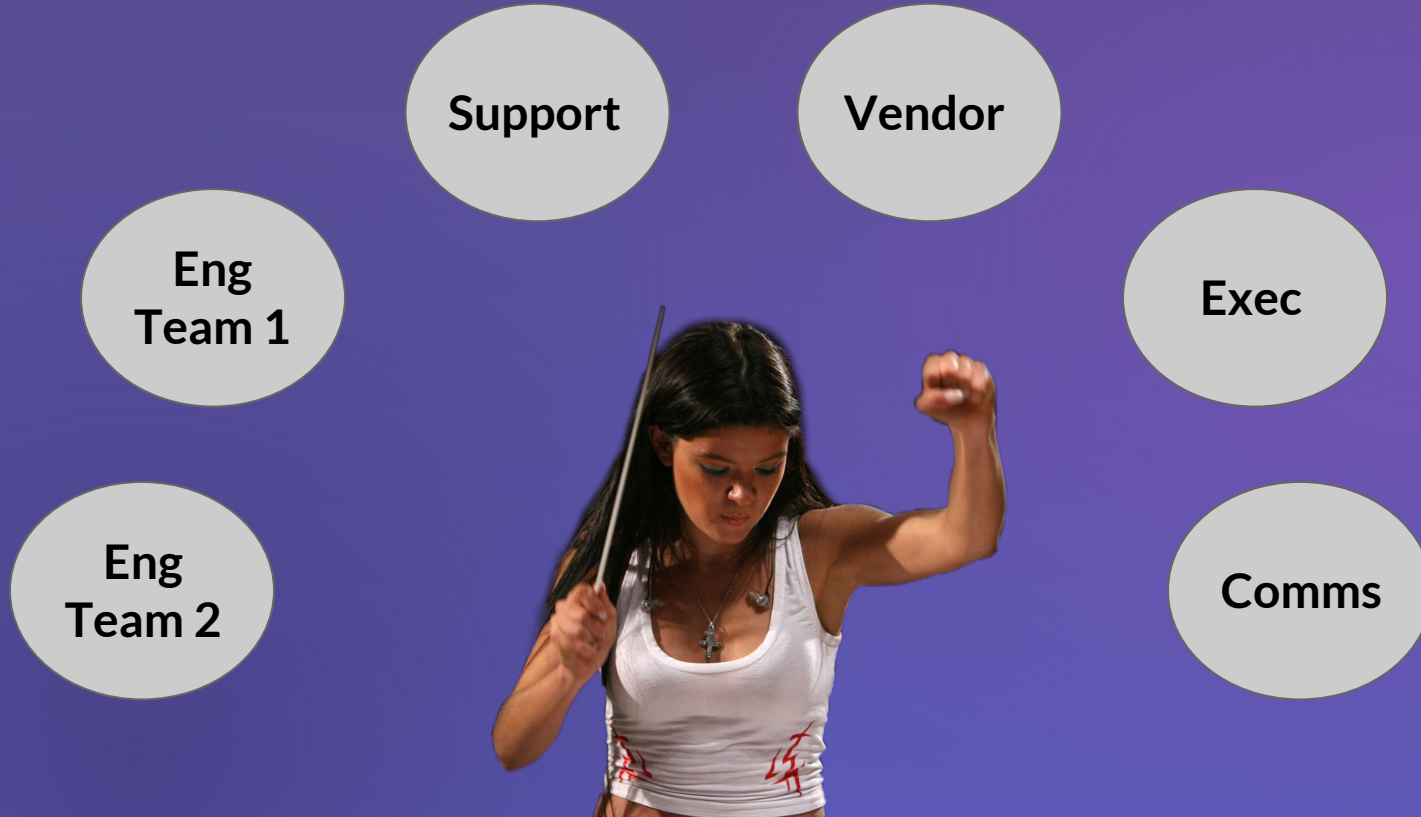


Division of Responsibilities

- Dev
 - incident response
 - service health
- SRE
 - incident *coordination*
 - holistic platform health



Incident Commander



Incident Retrospective

What happened, and how can we prevent
it from happening again?



Image credit: <http://www.wsdot.wa.gov/Projects/SR520Bridge/Photos/Damage.htm>

Complex failures

“The loads that created significant leakage were the combined effects of all accumulations of water, including rain after the wind storm, longitudinal flow on the surface of the bridge, and pumping through Nov. 24, 1990. These loads caused static moments [...] that exceeded the threshold for leakage. [E]xisting cracks were open[ed] sufficiently to allow water to leak into the pontoon. Progressive and accelerating sinking began at this time.”

Dusenberry, D., Zarghamee, M., Liepins, A., Luft, R., and Kan, F. (1995). "Failure of Lacey V. Murrow Floating Bridge, Seattle, Washington." J. Perform. Constr. Facil., 9(1), 4–23.

This was almost a good retrospective

Let's do better

Use a template

Holistic View of Reliability



Image credit: **dougwoods@Flickr** <https://www.flickr.com/photos/deerwooduk/579761138>

Human Error is not a Root Cause

“

*...human error as a root cause isn't where you should end, it's where you should **start** your investigation.*

- John Allspaw, referencing Sidney Dekker, David Woods, and others

The Human “Problem”





“Try Harder” is not a Remediation

“

*The beatings will continue
until reliability improves.*

– some combination of my colleagues





15-DEC-2005 23:09 ADULT:ADULT 0

V5

SP02

RR II

PVC 0

179/67
30 MIN 22:38
ADULT

94

NBP
200
80

RATE 74

96

SPO
105
90

NBP M HI 148
SPO2 LO 88
SPO2 LO 85

13:39
13:16
12:28

ALF

24

MORE
MENUS

The Design of Everyday Things



Donald A. Norman

Conway's Law

organizations which design systems ... are constrained to produce designs which are copies of the communication structures of these organizations
--Melvin Conway, in **1968**

GOSSIP

It's a sign of human connections

Everything is a people problem

Figure out how to love and support your
people

Incident retrospective template:

<https://github.com/peculiaire/incident-lifecycle/blob/master/retrotemplate.md>

Thanks for listening <3

Questions?





Hello
my name is

TECHNICAL DEBT