



HYNEK SCHLAWACK

SOLID SNAKES

OHAI TRAIL





Hynek Schlawack @hynek · 25 Jun 2016

Plastic cups are getting old but this boy's ready for Maui!



David Cramer

@zeeg

@hynek are you just on vacation forever

12:43 AM - 25 Jun 2016 from [Downtown, San Francisco](#)

ATTITUDE

INCENTIVES

IMPORTANT

VS

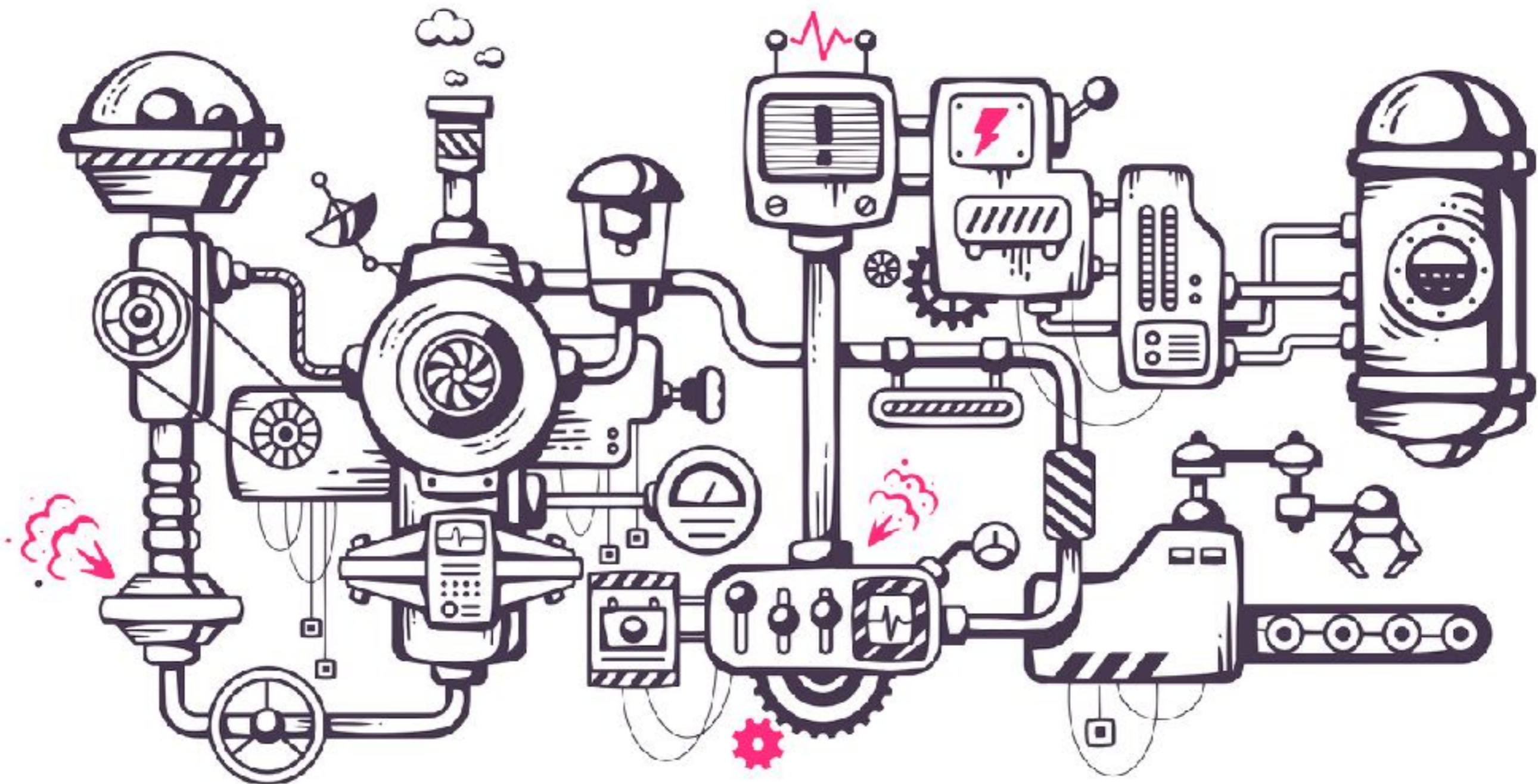
URGENT

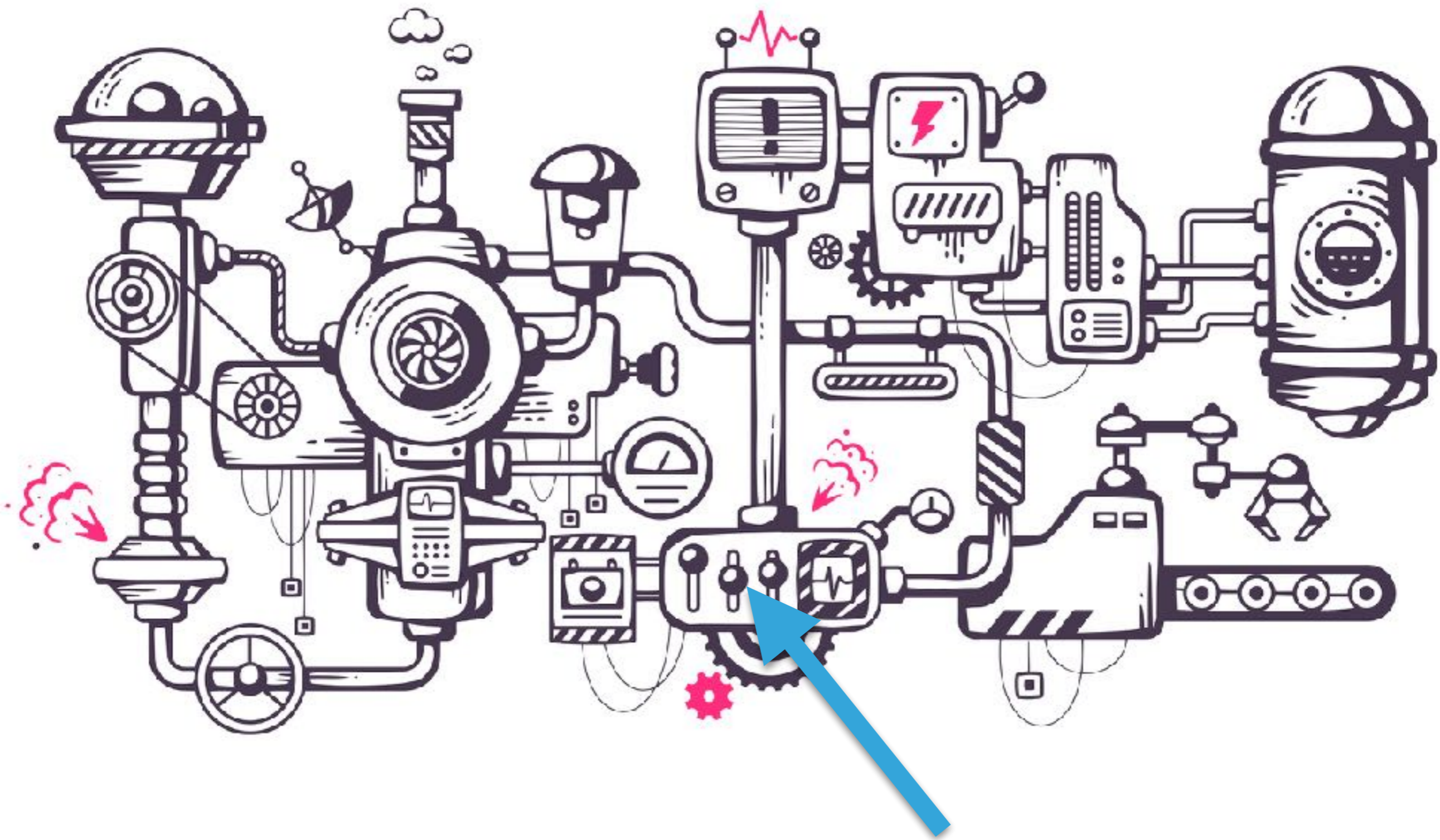
**THE PRICE OF RELIABILITY
IS THE PURSUIT OF THE
UTMOST SIMPLICITY.**

Sir C.A.R. Hoare



NORMAL ACCIDENTS





ESSENTIAL

ESSENTIAL

VS

ACCIDENTAL





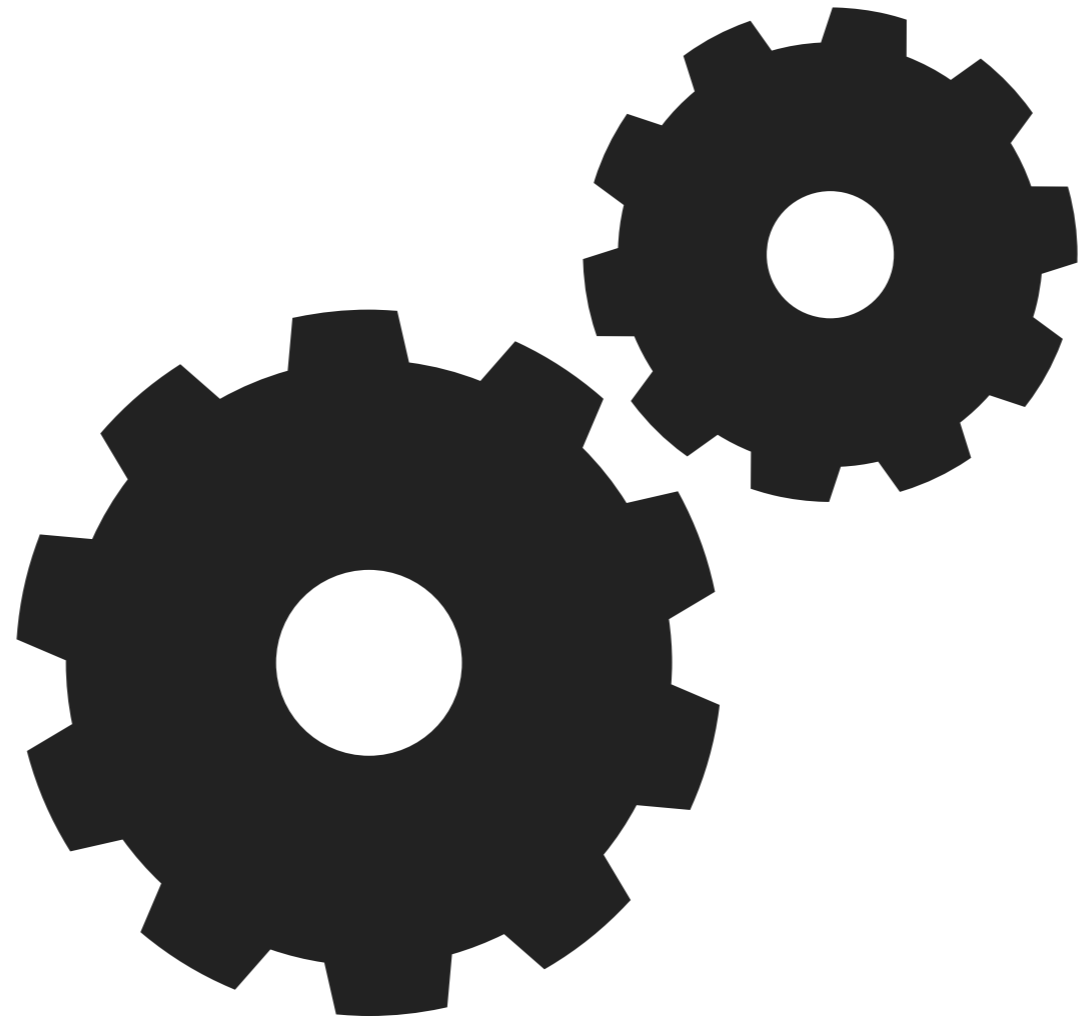


Cory Benfield

@Lukasaoz

“Also the subclassing based design was a huge mistake” is probably the most-commonly uttered sentence in programming.

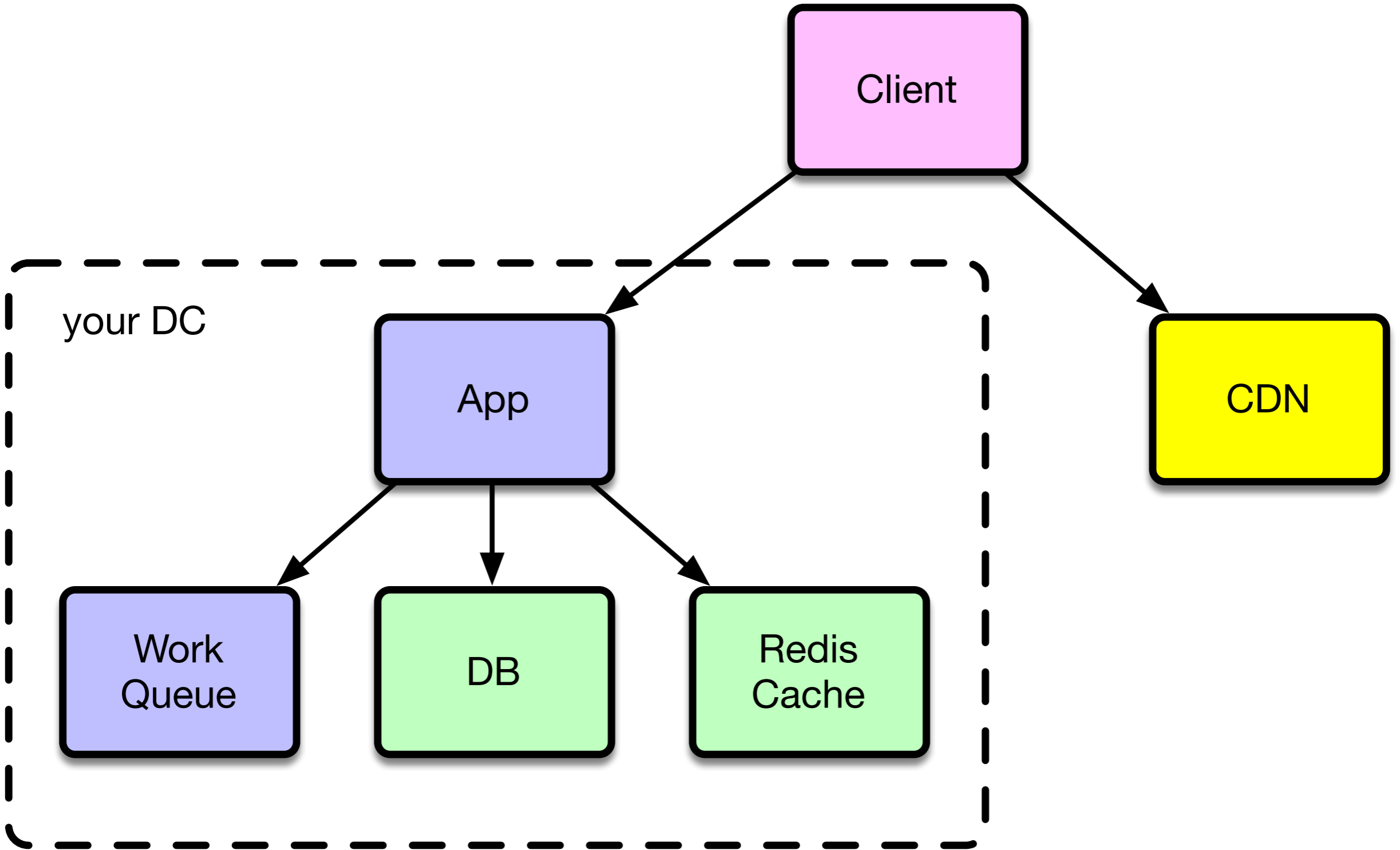
10:44 AM - 6 Apr 2017

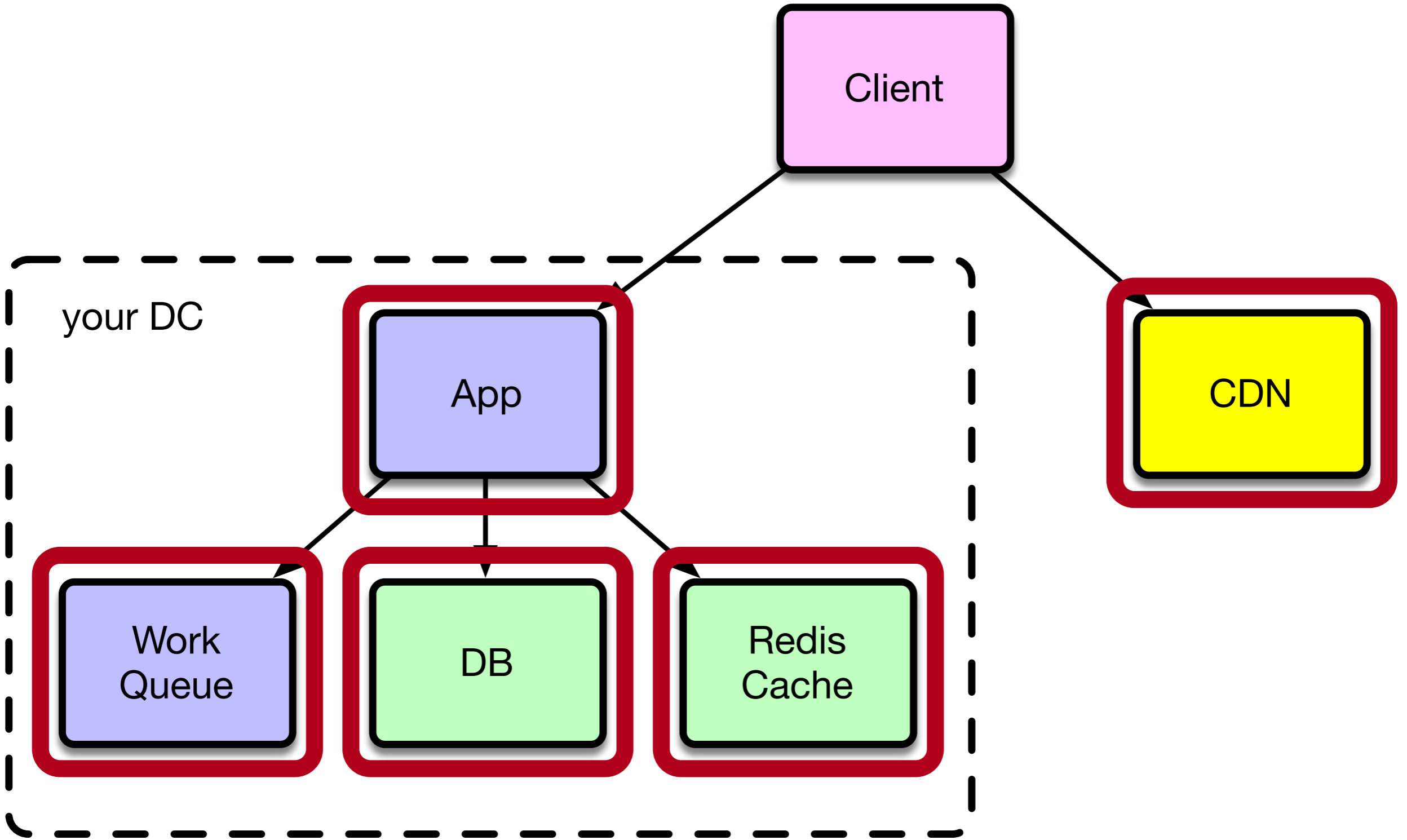


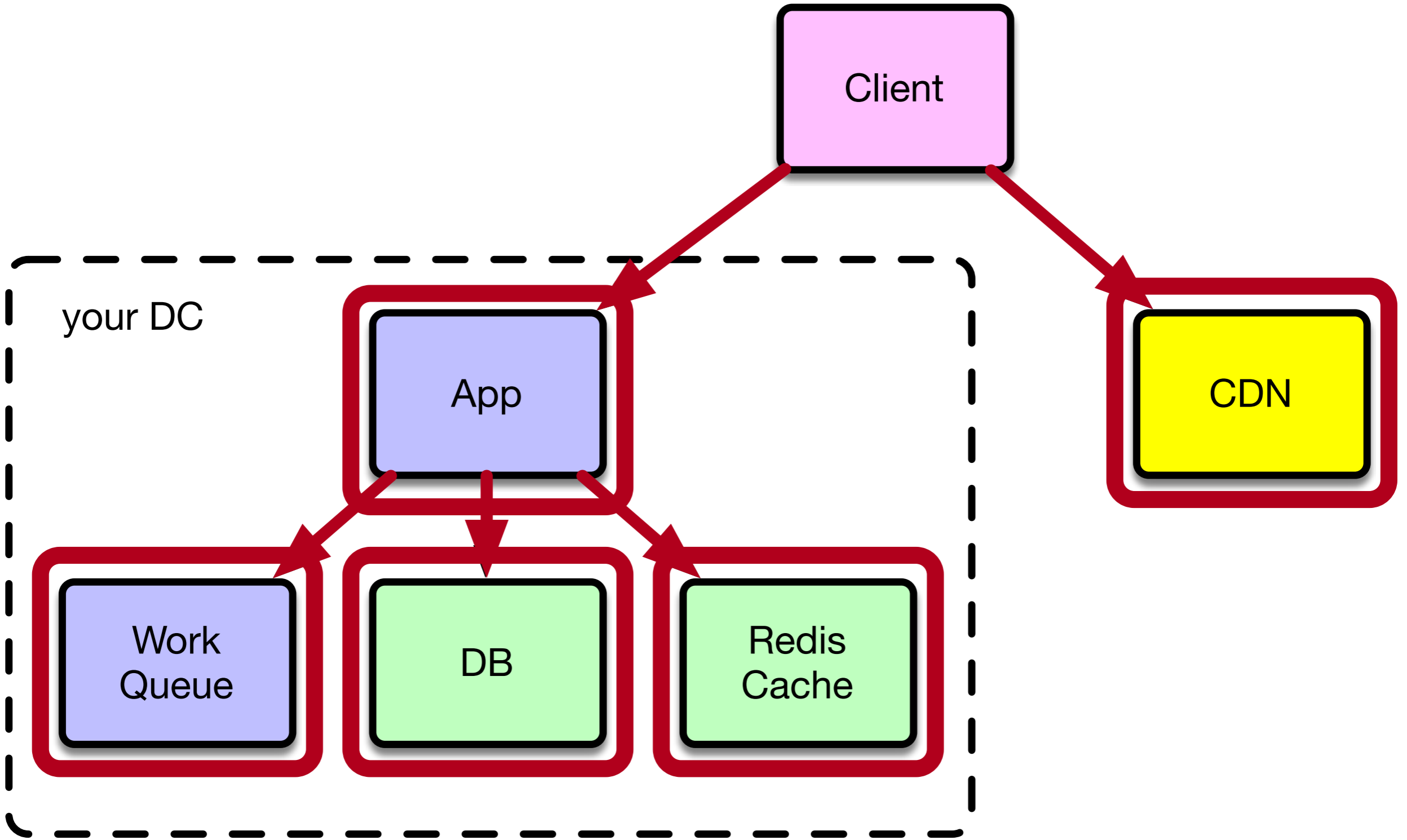
atters

OPERATIONAL

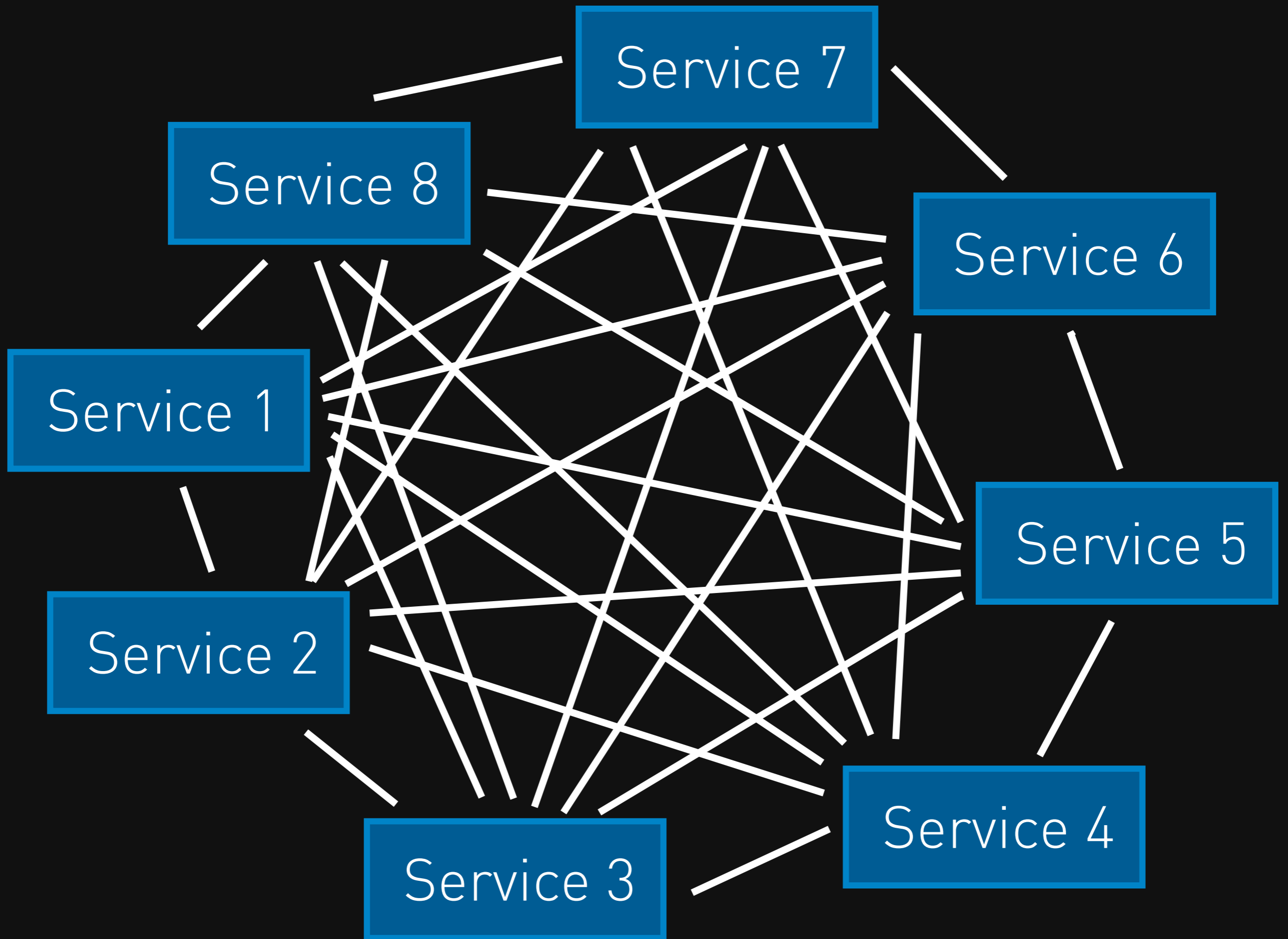
COMPLEXITY







MICROSERVICES





COMPLEXITY

IS

REALITY



PLAN

FOR

STUPIDITY

**I DON'T BELIEVE
IN HUMAN ERROR**

John Allspaw, CTO at Etsy





DATA VALIDATION

DATA VALIDATION AT EDGES

DATA NORMALIZATION AT EDGES

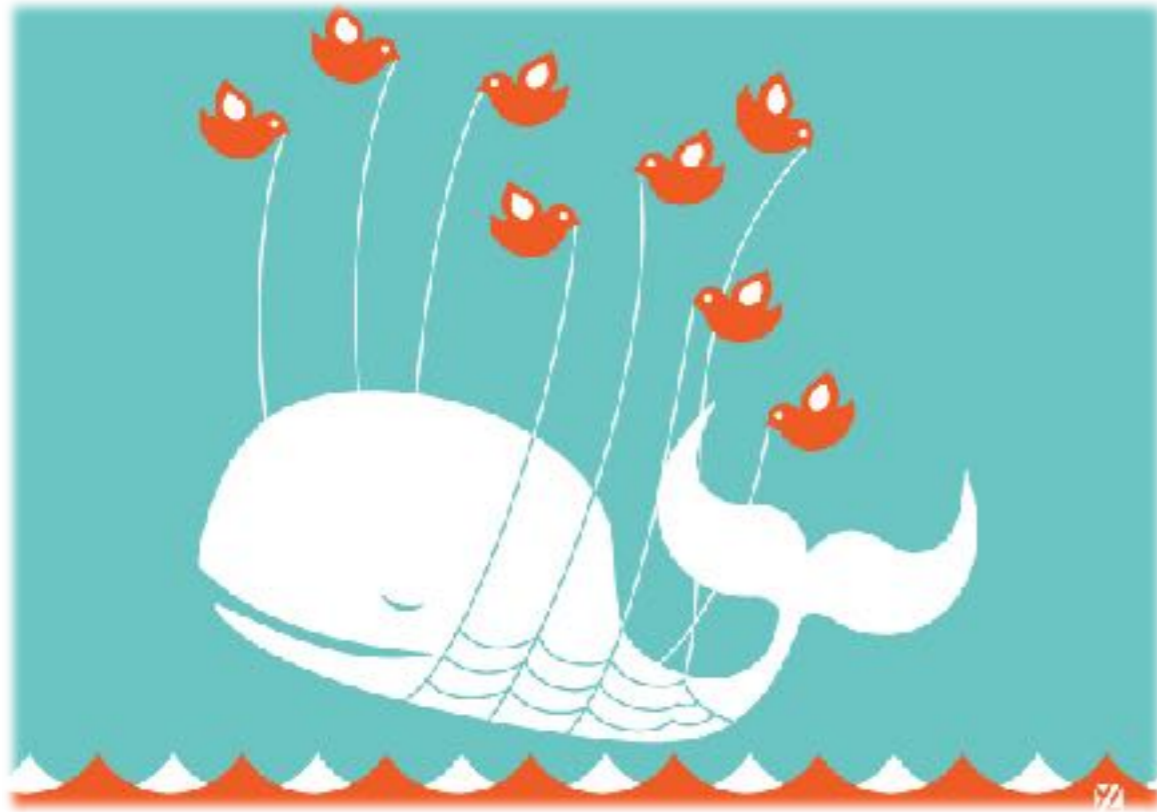
PLOT TWIST!

FAILURE IS
INEVITABLE

RELIABILITY

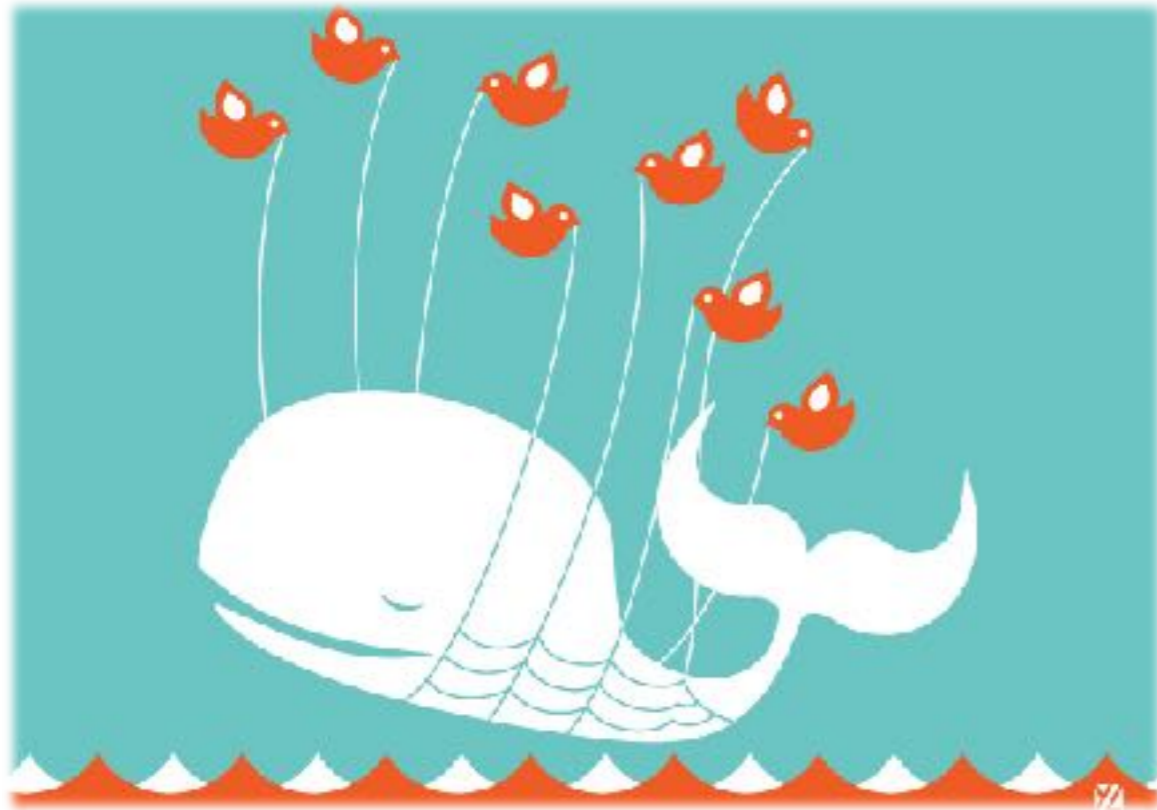


RELIABILITY

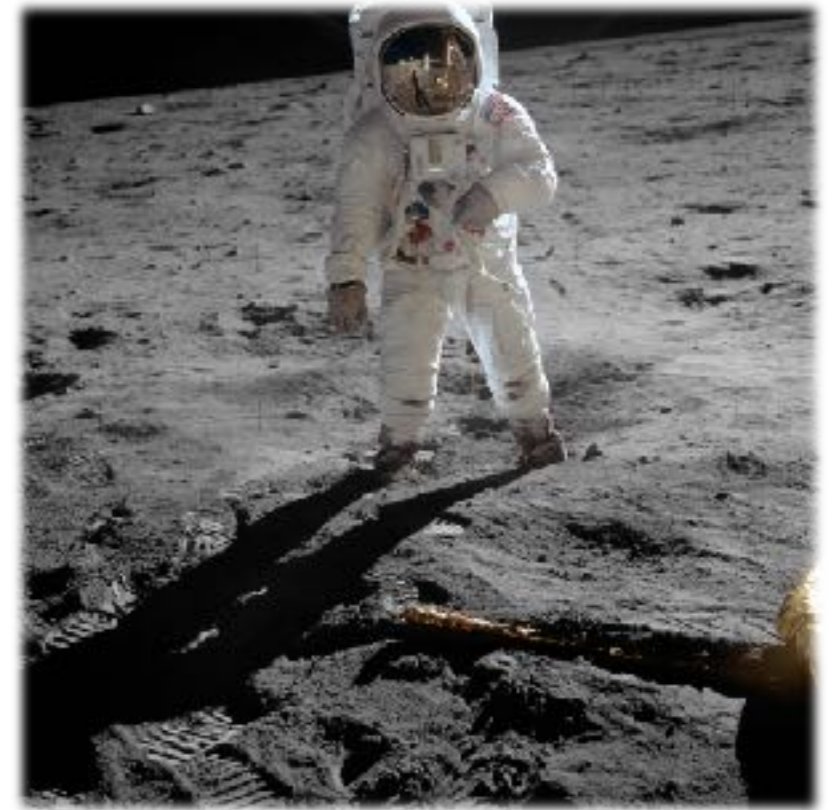


Twitter 2007

RELIABILITY



Twitter 2007



NASA 1969



MT0A - S
CR1A - C
MT1A - X1
MT2A - X2
CR1A - BI
CP1A - BO
CPJA - PU
TY1A - TY
CR1A - SI
LP1A - LO
MT2A - GO

FAILURE IS
INEVITABLE

**FAILURE IS
INEVITABLE**



EXPECT



TIMEOUTS

Switch
OPHW

SMOKE
ARM

W/S 8/3/10
S/10/25

Cat CB-108
8A
 250V~ **ON**

1.5kA OFF

N11829
 Made in Belgium

HPM

ABB S91
16
 250V~
 1.5 kA
 N 11887

16A

STOTZ

Cat CB-120
20A
 250V~ **ON**

3kA OFF

N11829
 Made in Belgium

HPM

SUPERSWITCH
32A
 250V~ **ON**

S&C

1,5 kA OFF

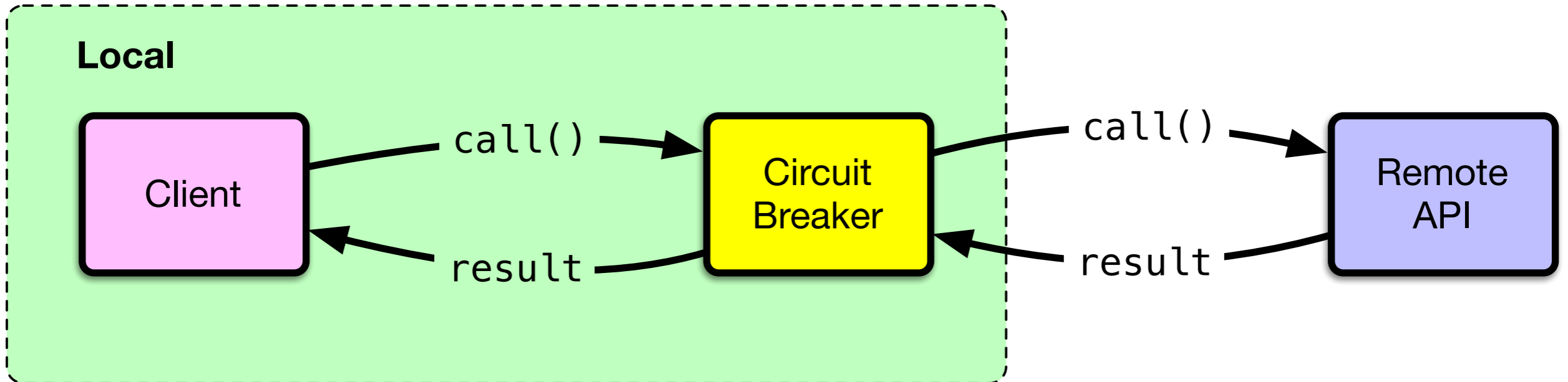
N 10177

S&C

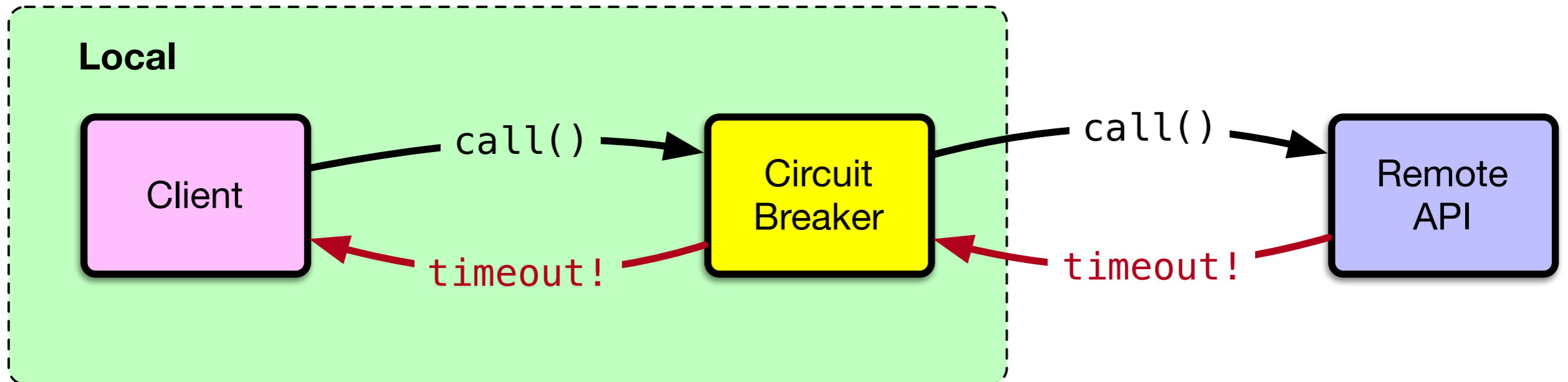
oke
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 nature

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 PPS
 PPS
 4
 Stove

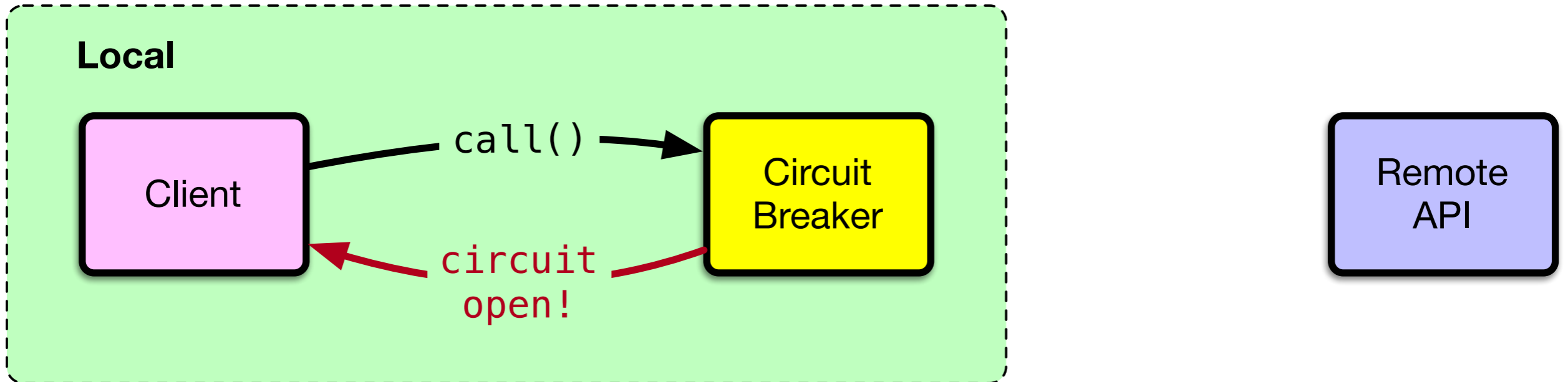
CLOSED



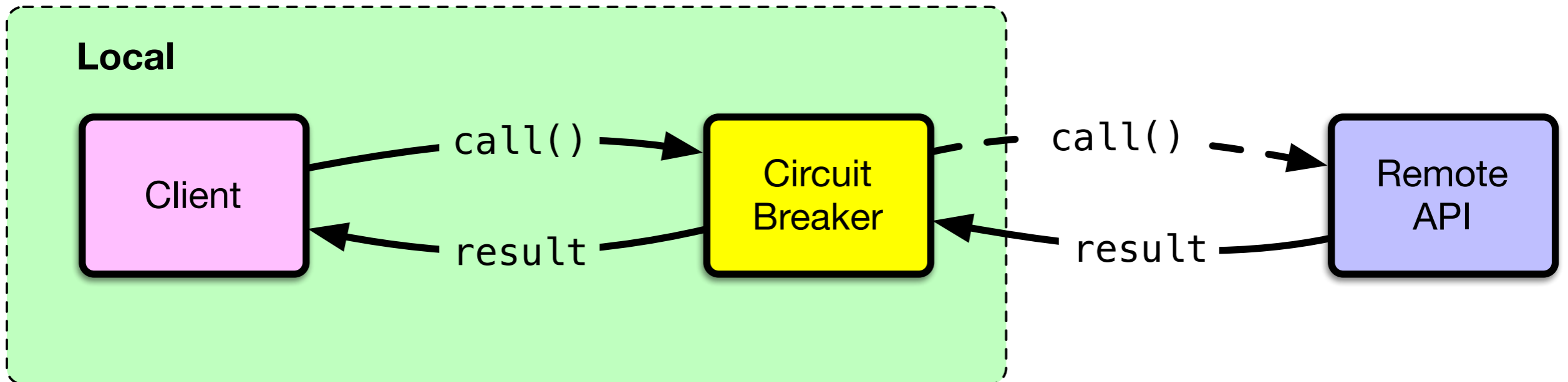
CLOSED → OPEN



OPEN



OPEN → HALF-CLOSED



REDUNDANCY



DOCS

DEAL WITH IT

(_ _ _)

DON'T

MAKE IT

WORSE

RETRIES

BACKOFF

EXPONENTIAL

BACKOFF

EXPONENTIAL

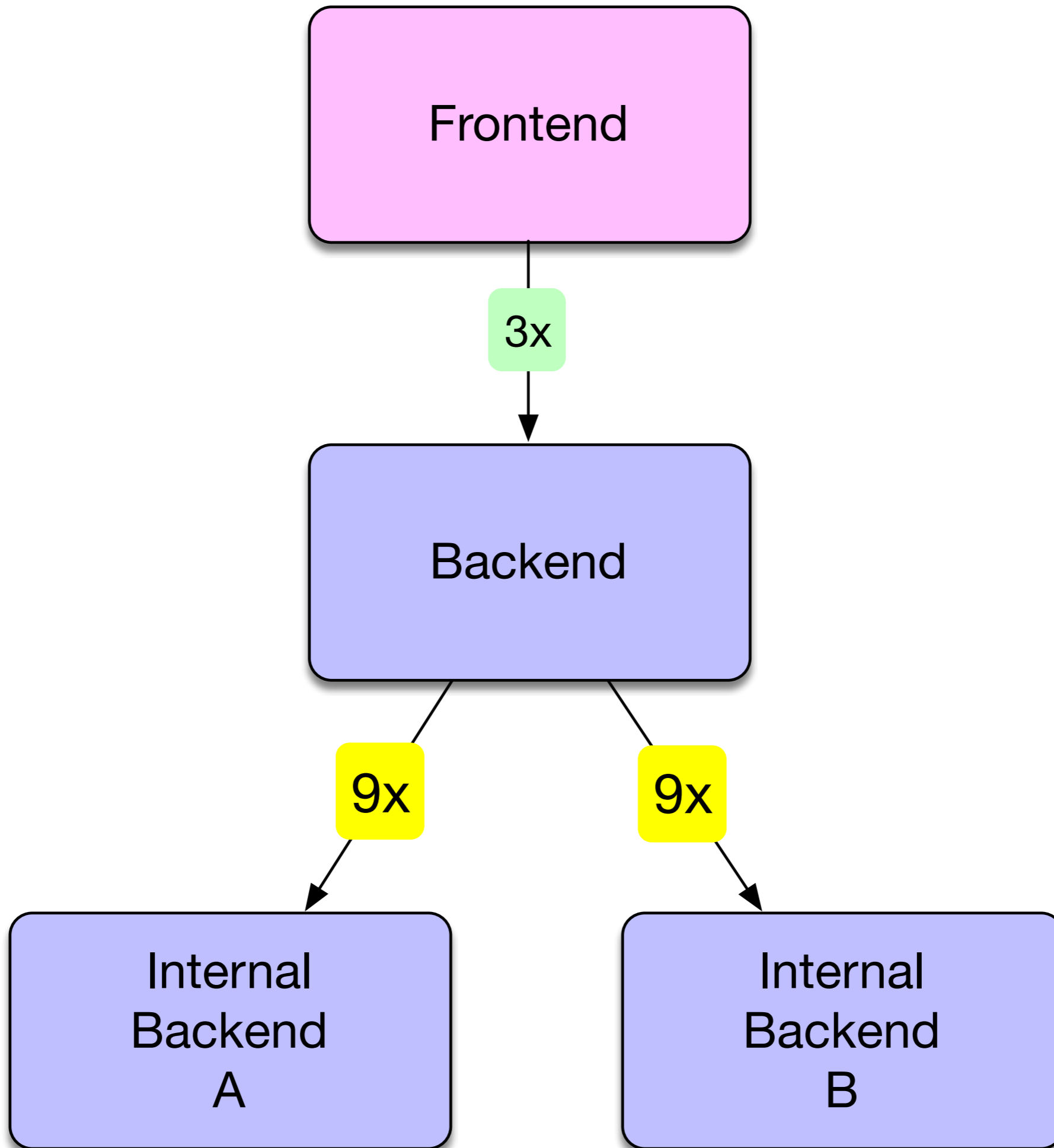
BACKOFF

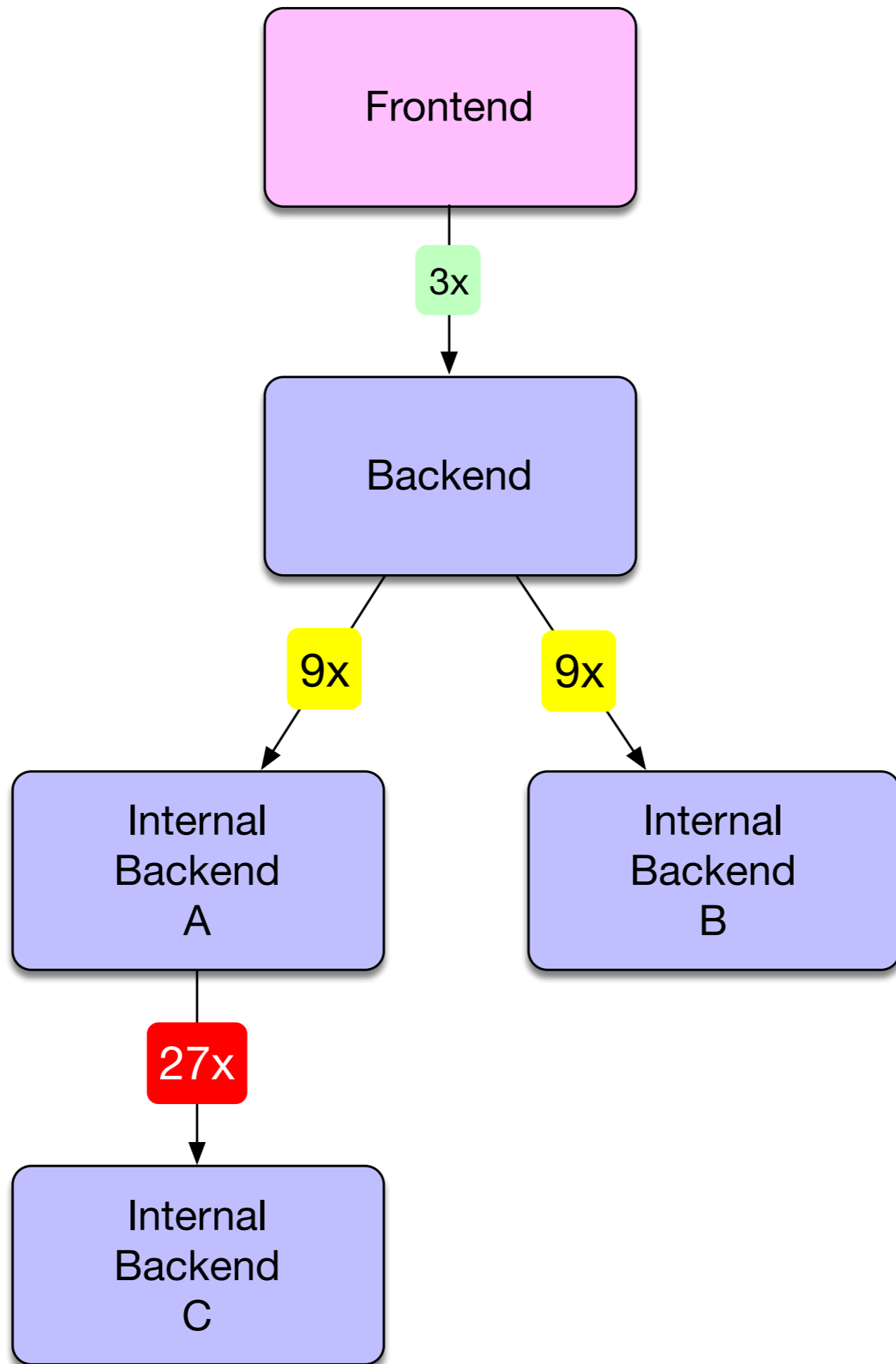
WITH JITTER

Frontend

3x

Backend





DON'T

SWALLOW

ERRORS

```
try:  
    do_something()  
    return True  
except Exception:  
    return False
```

```
try:  
    do_something()  
except Exception:  
    raise AppException()
```

```
try:  
    do_something()  
    return True  
except Exception as e:  
    raise AppException() from e
```

from e

```
try:
```

```
    do_something()
```

```
    return True
```

```
except Exception as e:
```

```
    raise AppException()
```

```
from e
```



```
AppException().__cause__ == e
```

**DON'T TRY
TOO HARD**

```
sys.exit(1)
```

CRASH-ONLY

FAIL FAST

FAIL LOUDLY

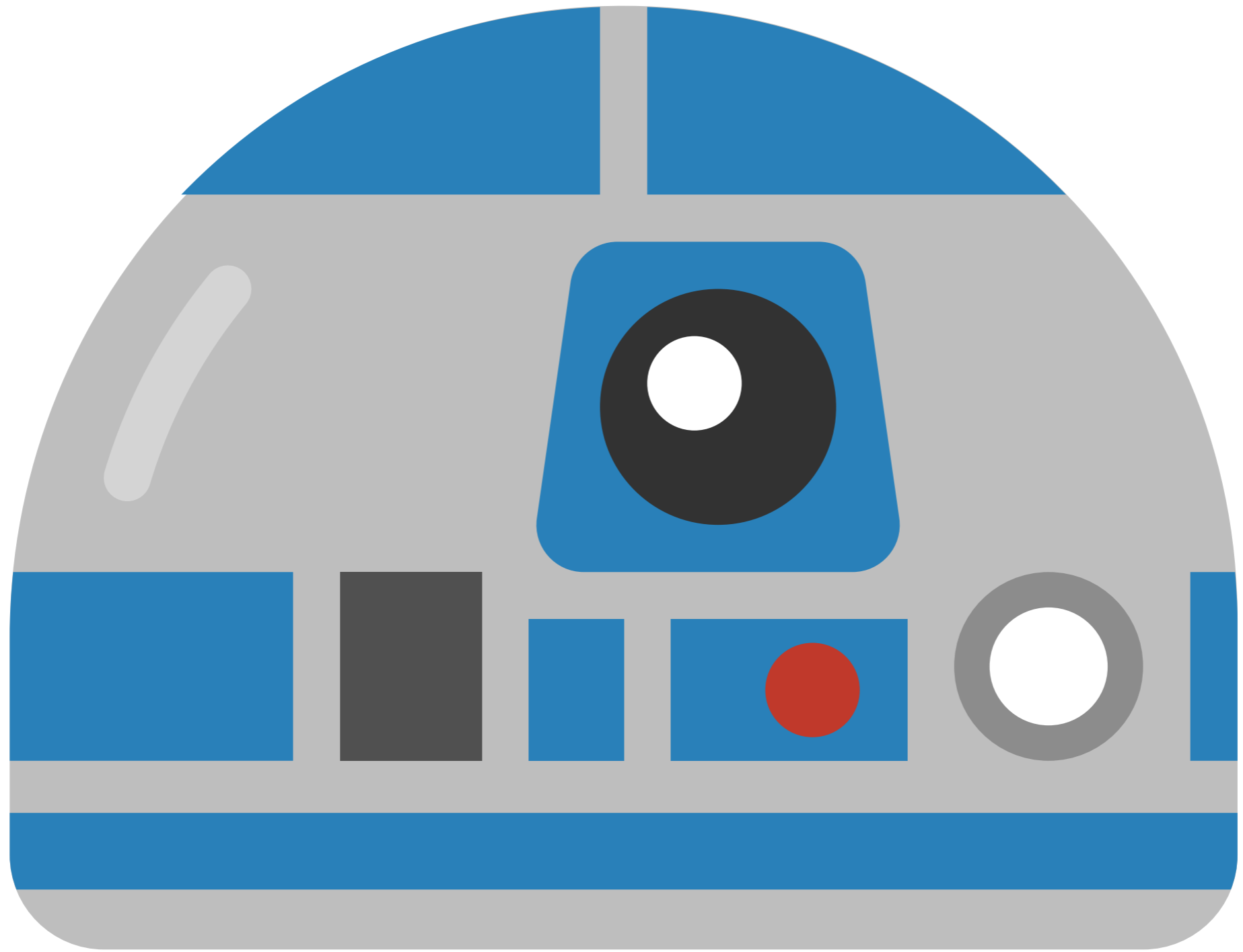
FOCUS

ON

RECOVERY



MTTR



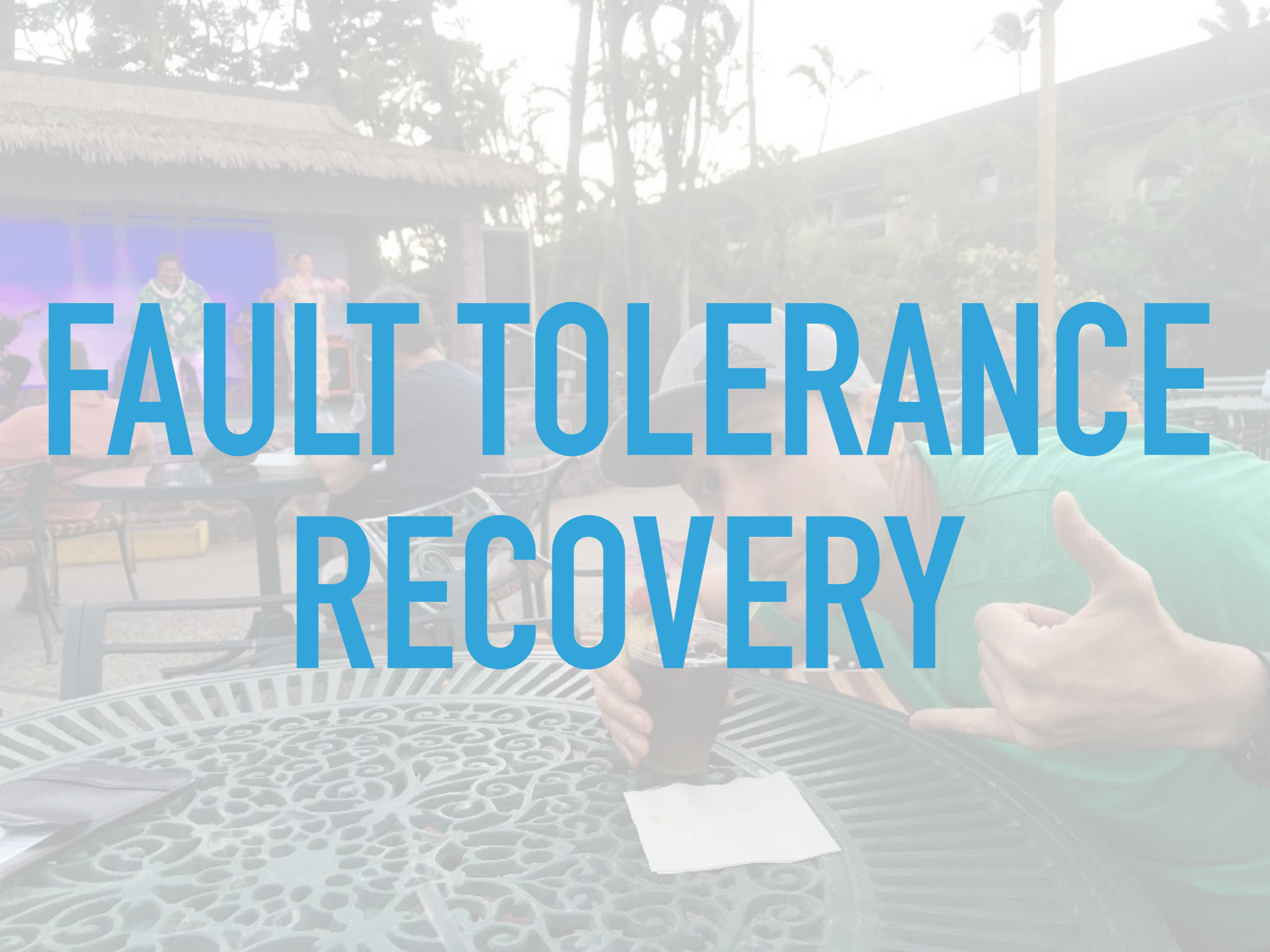
ZERO

EXPECTATIONS





FAULT TOLERANCE



FAULT TOLERANCE RECOVERY

OX.CX/SS

@HYNEK

VRMD.DE

