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
INCENTIVES
IMPORTANT VS URGENT
THE PRICE OF RELIABILITY IS THE PURSUIT OF THE UTMOST SIMPLICITY.

Sir C.A.R. Hoare
ESSENTIAL
ESSENTIAL VS ACCIDENTAL
“Also the subclassing based design was a huge mistake” is probably the most-commonly uttered sentence in programming.

10:44 AM - 6 Apr 2017
OPERATIONAL COMPLEXITY
Client

your DC

App

Work Queue

DB

Redis Cache

CDN
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
FAILURE IS INEVITABLE
FAILURE IS INEVITABLE
EXPECT
TIMEOUTS
Local

Client

Circuit Breaker

call()
call()
result
result

Remote API
CLOSED → OPEN

Local

Client → Circuit Breaker → Remote API

Client calls Circuit Breaker, which then calls the Remote API. If either call times out, the Circuit Breaker will trip and close, preventing further calls.

timeout! → timeout!
Local

Client

Remote API

Circuit Breaker

call()

open!
OPEN → HALF-CLOSED

Local

- Client
  - call() → Circuit Breaker
  - result

Circuit Breaker

- call() → Remote API
- result
DOCS
DEAL WITH IT

(¬ — —)
DON’T MAKE IT WORSE
RETRIES
EXPONENTIAL BACKOFF
EXPONENTIAL BACKOFF WITH JITTER
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
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
ZERO EXPECTATIONS
FAULT TOLERANCE
FAULT TOLERANCE
RECOVERY