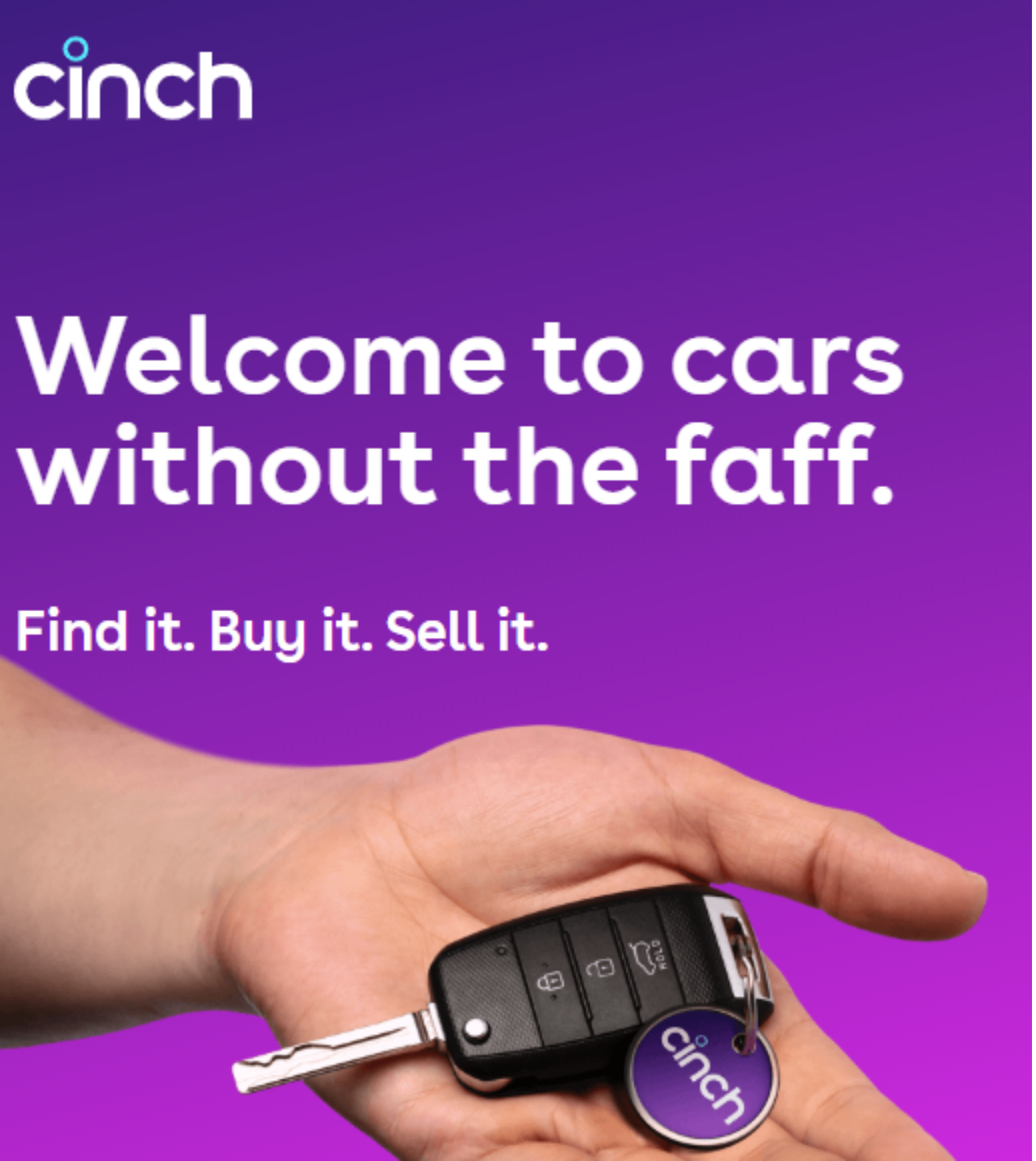
BEHIND THE BUZZWORD

A. APOSTOLIDIS (AKA TOLI)



TOLI

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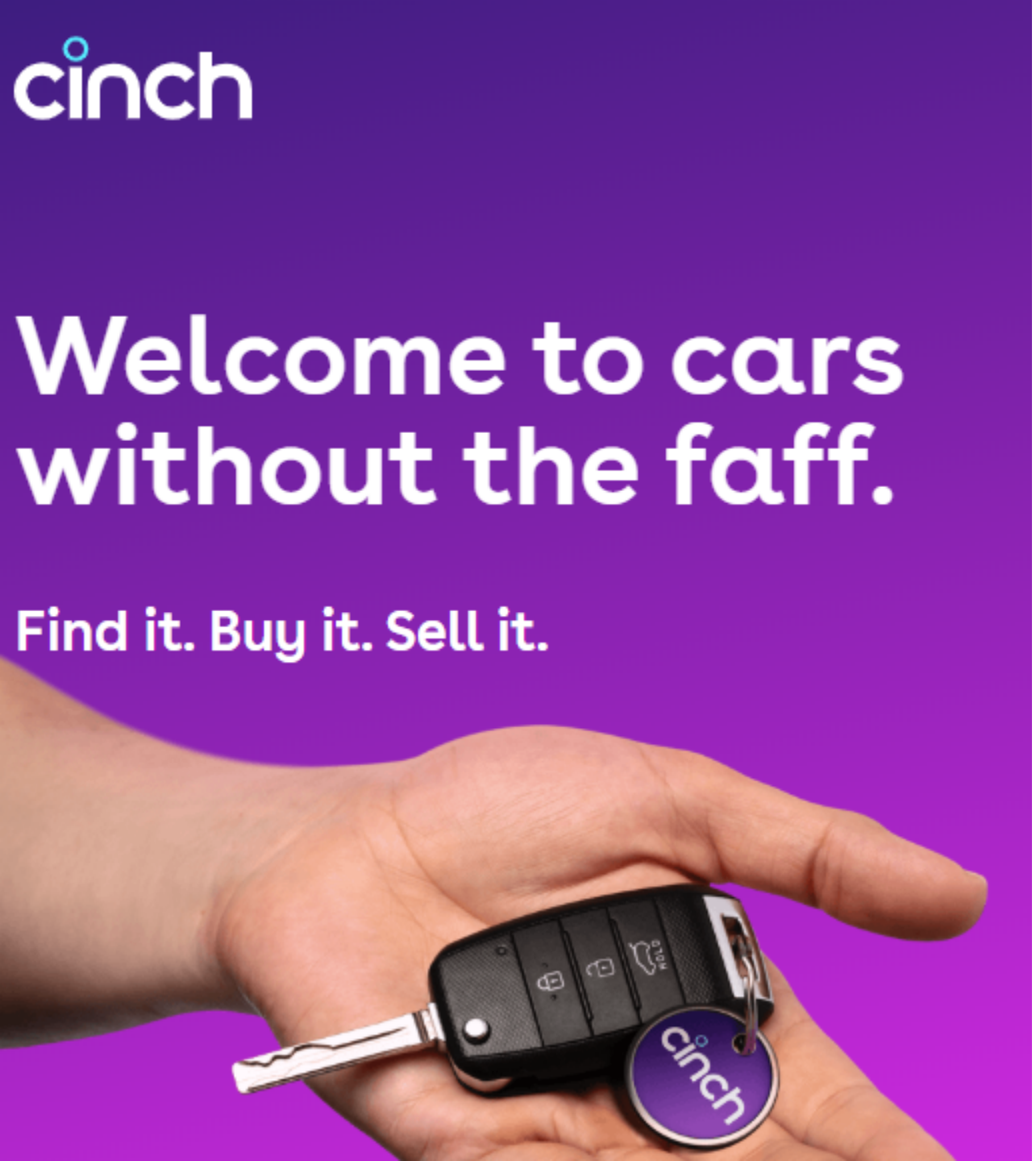

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WE'RE HIRING!

TRACING THE TALK

1. WHY OBSERVABILITY?
2. BUT WHAT DOES IT REALLY MEAN?
3. A FEW SUB-BUZZWORDS
4. HOW WE IMPLEMENTED IT AT CINCH
5. WHY OBSERVABILITY?

Discuss.

What do you do when you encounter something unexpected?

The first thing you see is JUST a sense of discomfort.

And fear. Combined with some latent curiosity.

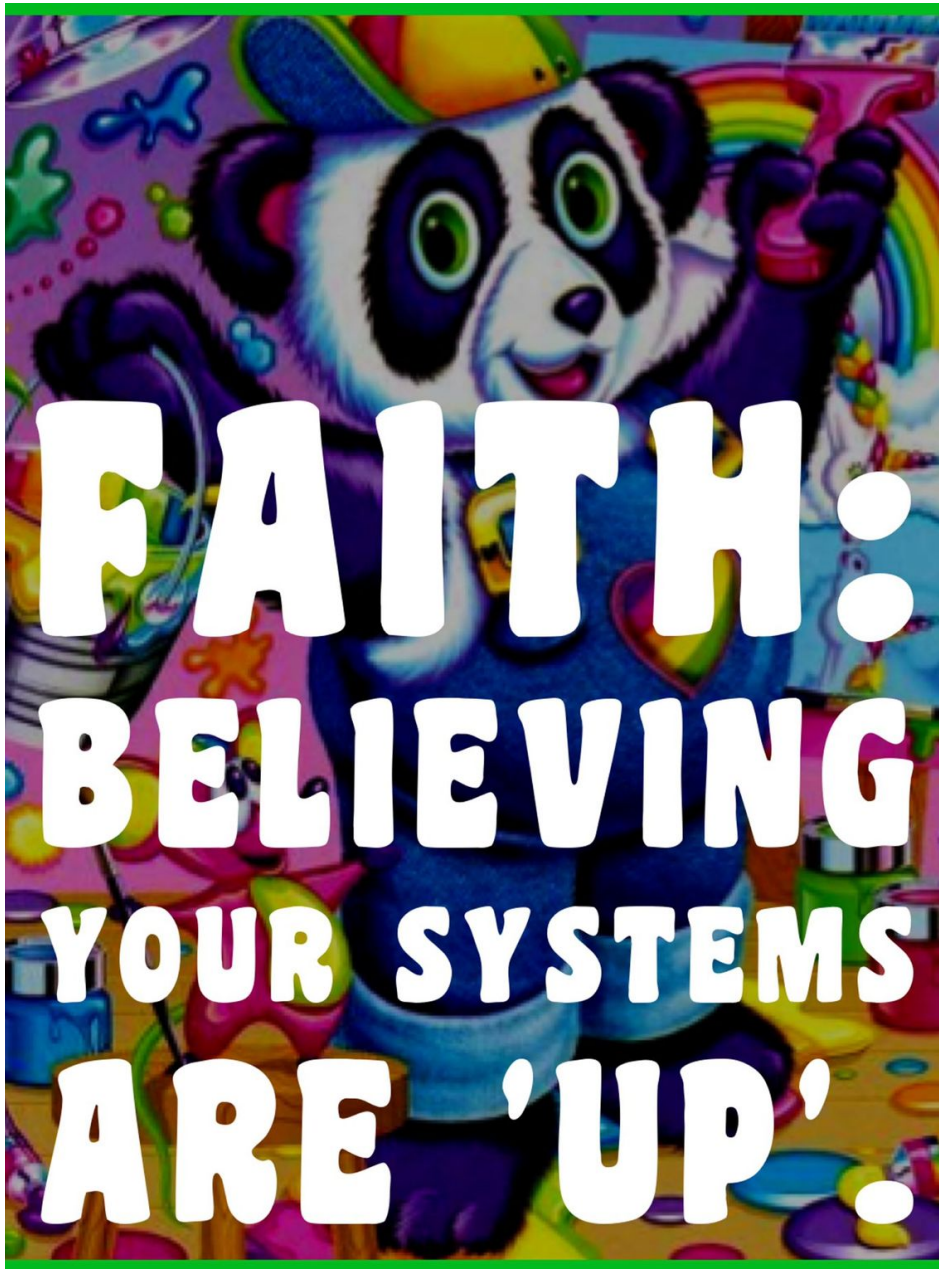
The world is not what you thought it was.

How do you find out what the world is actually like?

You have to investigate.

Find the thing that you are bordering on avoiding.

Software systems are **never** 100% green.



But what does it really mean?

Find the thing that you are bordering on avoiding. And you have to map it.

OBSERVABILITY

BUT WHAT DOES IT REALLY MEAN?

In control theory, **observability*** is a measure of how well internal states of a system can be **inferred** from knowledge of its external outputs.

But what does it really mean?

*https://en.wikipedia.org/wiki/Observability

TRADITIONAL MONITORING

- TEXT LOGS
- APP METRICS
- STRUCTURED LOGS
- HOST METRICS

But what does it really mean?

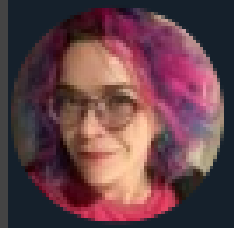
In control theory, **observability*** is a measure of how well internal states of a system can be **inferred** from knowledge of its external outputs.

But what does it really mean?

*https://en.wikipedia.org/wiki/Observability

Inferring internal states of a system is *hard*.

But what does it really mean?



Charity Majors @mipsytipsy · Nov 26, 2019

Observability, short and sweet:

- can you understand whatever internal state the system has gotten itself into?

...just by inspecting and interrogating its output?

...even if (especially if) you have never seen it happen before?

> 
>
> **Gregory Paciga** @GregPaciga · Nov 25, 2019
>
> Love description of #observability from @mipsytipsy: "Observability is about being able to ask arbitrary questions about your environment without---and this is the key part---having to know ahead of time what you wanted to ask." (h/t @lisacrispin via @testautomationu)

OBSERVABILITY CONCEPTS

- **INSTRUMENTING CODE**

  Think ahead of writing your feature of how, what and where

- **TRACING**

  A Go Pro on your http request and response cycle

- **SLIS/SLOS**

  Indicators/Objectives, not dashboards

- **EVENTS**

  Events are built up over time, gaining context as they go, whereas metrics are updated individually, and don’t carry that same context.

- **STANDARDS**

  Open Tracing, Open Census -> Open Telemetry

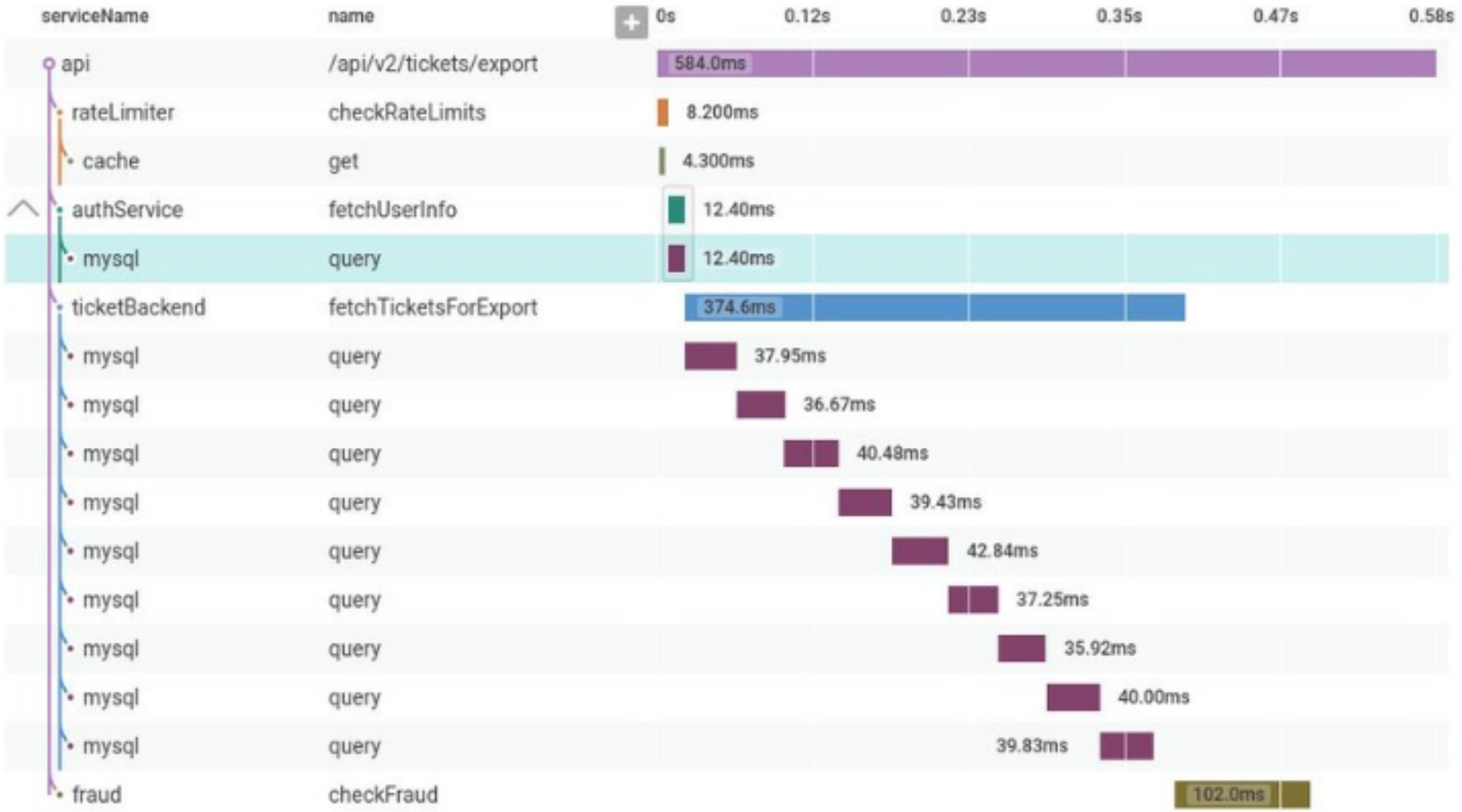
- **ERROR BUDGETS**

  How much does this error matter?

A few sub-buzzwords

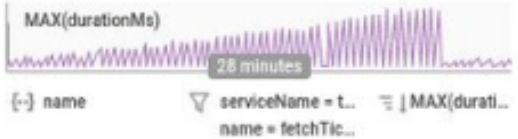
Query at 5/31 3:35PM > Trace e6ee35b206e1c9e5

1 of 10



Query Details

3:35 pm



Selected Span

Timestamp	2018-05-24T13:07:23.278924805Z
durationMs	12.4
id	84775f5a2c0fb5c5
name	query
parentId	db422247c7a0aa8f
query	SELECT * FROM users WHERE id=?
serviceName	mysql
traceId	e6ee35b206e1c9e5
user_id	20109

Datasets / production-website

Add a description for this query

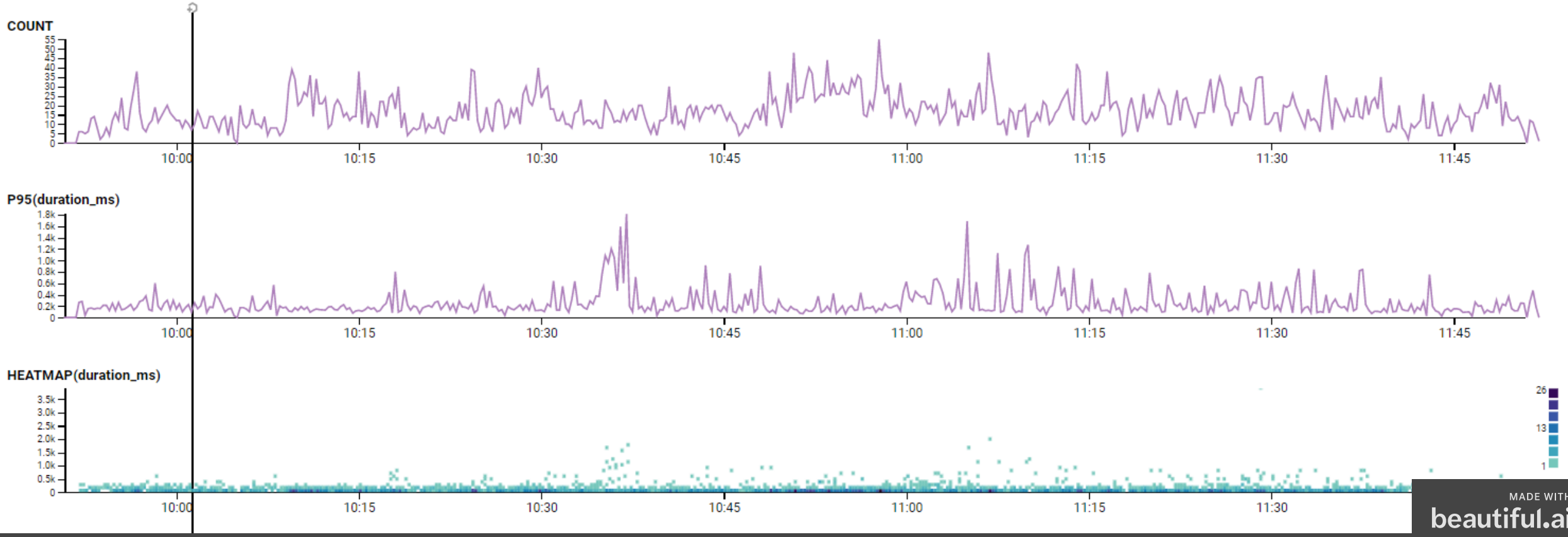
VISUALIZE	WHERE	GROUP BY	ORDER BY	LIMIT
COUNT P95(duration_ms) HEATMAP(duration_ms) AVG(sli.slow_response_time_250ms)	http.path = /api/vehicles	None; combine all rows	COUNT desc	None

Run Query

Run a few seconds ago

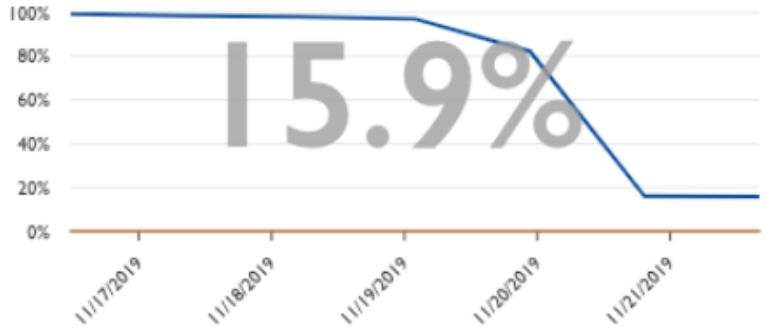
Feb 27 2020, 9:50 AM – Feb 27 2020, 11:50 AM Granularity: 15 sec

Results | BubbleUp | Traces | Raw Data | Graph Settings



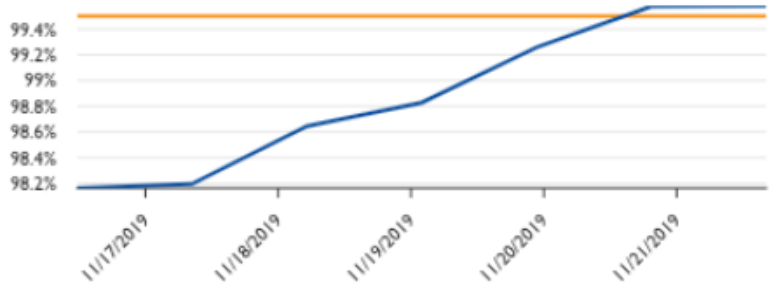
Remaining Budget

How much of the error budget remains after the last 7 days.



Historical SLO Compliance

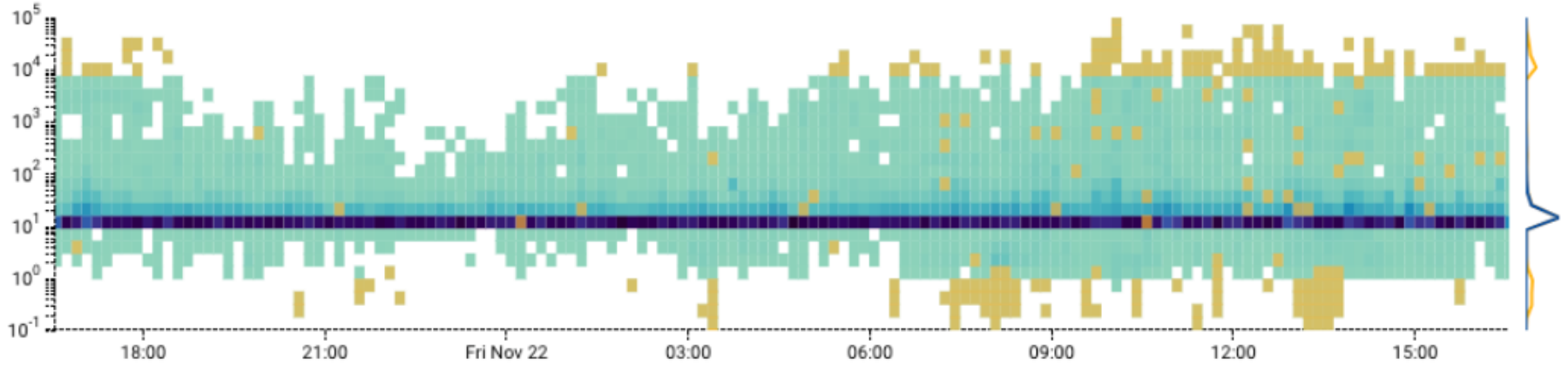
For each day of the past 7, how often this SLO has succeeded over the preceding 7 days.



Distribution of Events failing SLI by flt duration_ms

Last 24 hours

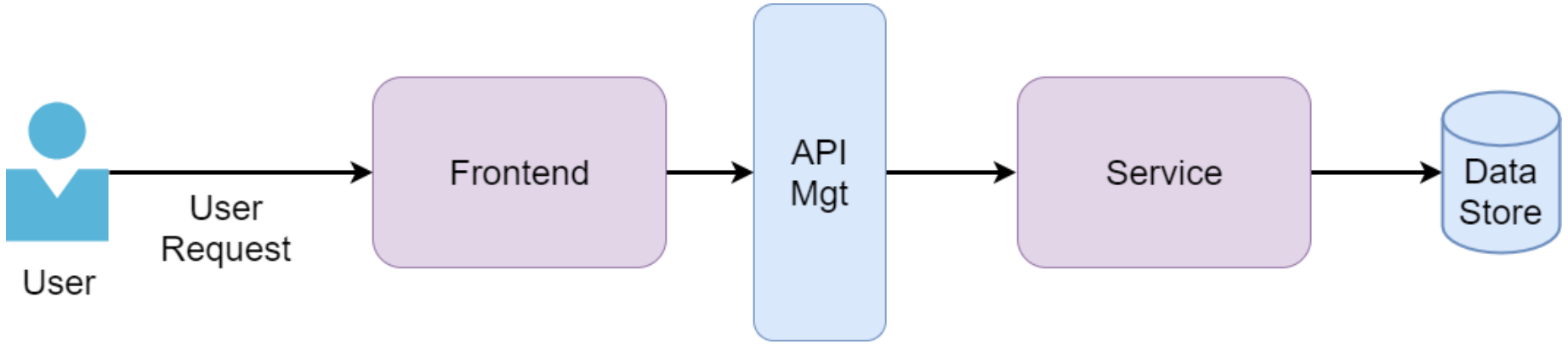
Nov 21 2019, 4:33 PM – Nov 22 2019, 4:33 PM



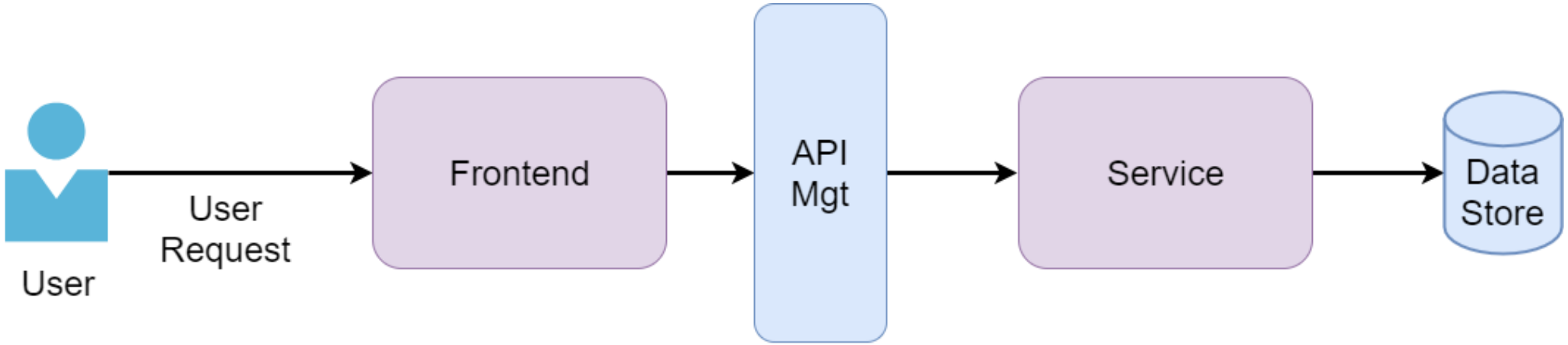
CLOUD

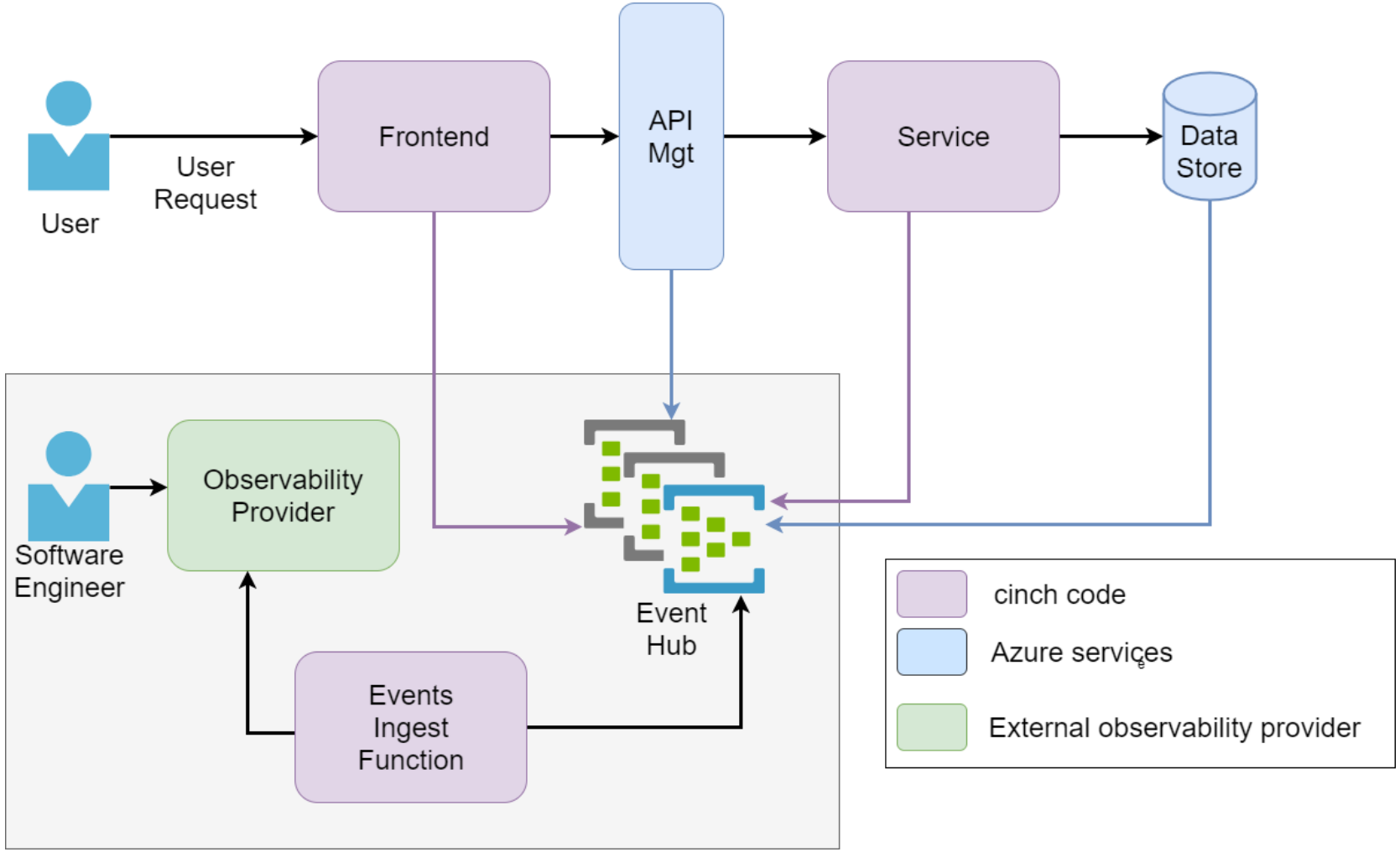
TRACING INSTRUMENTATION*

*A cinch journey



Observability at cinch





Observability at cinch

WHY INVEST IN OBSERVABILITY?

1. O11Y-FIRST APPROACH TO DEVELOPMENT
2. DEBUG DISTRIBUTED SYSTEM EFFICIENTLY ACROSS DISTINCT ENTITIES
3. ASK QUESTIONS TOMORROW THAT YOU DON'T KNOW YOU WANT TO ASK TODAY
4. CONTEXT
5. STRONG, PASSIONATE COMMUNITY
6. STANDARDS EXIST

O11Y GOTCHAS

1. SETTING O11Y UP IS HARD
2. ADOPTING O11Y TAKES TIME
3. STANDARDS IMMATURE
4. DO YOU HAVE A DISTRIBUTED SYSTEM?

O11Y RESOURCES

- **HONEYCOMB OBSERVABILITY**
  https://docs.honeycomb.io/learning-about-obs
- **O11YCAST PODCAST**
  heavybit.com/library/podcasts/o11ycast/
- **CHARITY MAJORS**
  https://twitter.com/mipsytipsy
- **SLAYING THE DRAGON WITHIN US**
  https://www.youtube.com/watch?v=REiUkEi1(