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Monitoring Systems as a Service:

Walking the line between giving your devs good M&O, and setting all your money on fire

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SREcon EMEA October 2024 Dublin

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This is me.

- Monitoring & Observability
- Site Reliability
- Incident Management, Review & Analysis
- Blameless Culture Practitioner

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I work at Udemy

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75
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16K+
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Agenda

1. About Monitoring Systems as a Service
2. Our Experience
3. First Steps
4. Various good ideas
5. Results
6. Profit!

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What are “Monitoring Systems as a Service”?

And why would you use one?

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Pros

- Someone else is doing all the work
- You don’t need staff to build it
- Always new features coming out
- It grows with you
- Great UIs, less time needed for training
- Single pane of glass for your staff

Cons

- You are definitely paying for that
- You will need staff to admin it
- The pricing will reflect new features
- The bill also grows with you
- You probably neglect training
- Single pane of glass + all your other tooling

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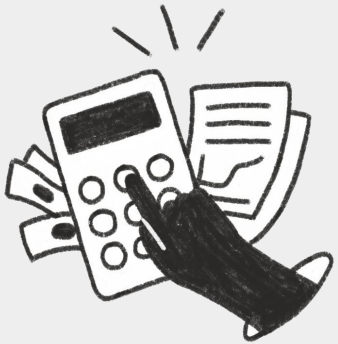
It’s a complex system

PAY ATTENTION



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WOW I HAVE WAY TOO MUCH MONEY
DAMMIT WHAT AM I GUNNA DO WITH ALL THIS MONEY
I'TS LITERALLY FALLING OUT OF MY POCKETS! WON'T SOMEBODY PLEASE TAKE SOME OF THIS MONEY?!
Monitoring Vendors
SO ANYWAY, THAT'S HOW I IMAGINE OUR TARGET AUDIANCE
MYGUMSAREBLEEDING

Udemy 2015

- Small Startup
- Less than 200 staff in total
- 120 bare metal machines
- No cloud, no VMs, no autoscaling
- Brand new SRE team
- Constant fire fighting, lots of chaos
- Monolith
- 1 main on-call team
- Only 3 teams can change/impact infrastructure

SRE team the main admins of the monitoring solution, but it's best effort

Udemy 2024

- Public company
- Approx 2000 total staff
- Much larger infra footprint
- All AWS cloud, K8S, Autoscaling
- Mature SRE org
- Problems now related to growth and increased complexity
- Services + Monolith
- 40+ teams on-call
- I.a.C. so many teams can change Infra

M&O teams are the main admins

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Passage of time

+

Busy staff + Growth

=

<u>Accidental</u> Neglect & an *Interesting* Bill

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Monitoring & Observability Team Established 2021

Goals:

1. Our Monitoring Systems costs are predictable and reasonable
2. We are providing a good M&O experience to our devs

Starting with a lot of tech debt & really expensive skeletons

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Triage & Stop the Flood

<u>But</u>

Don’t Disimprove or Reduce M&O

Don’t become the republic of NO or people will just bypass you.

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“

M&O is important and we are willing to spend money on the tooling you need.

This will be easier when we can claw money back from existing cost wastage.

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Look at your bill. *Reeeeeeeallllly look at it.*

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Is it confusing and terrible? Yes. Yes it is.

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Make a list of questions

- Is there only one account?
- What's the biggest contributor to the bill?
- Do you understand what every line is?
- Do you have access to the historical bills?
- Can someone get you a CSV of all the usage and cost stats?

Then reach out to...

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Your Account manager

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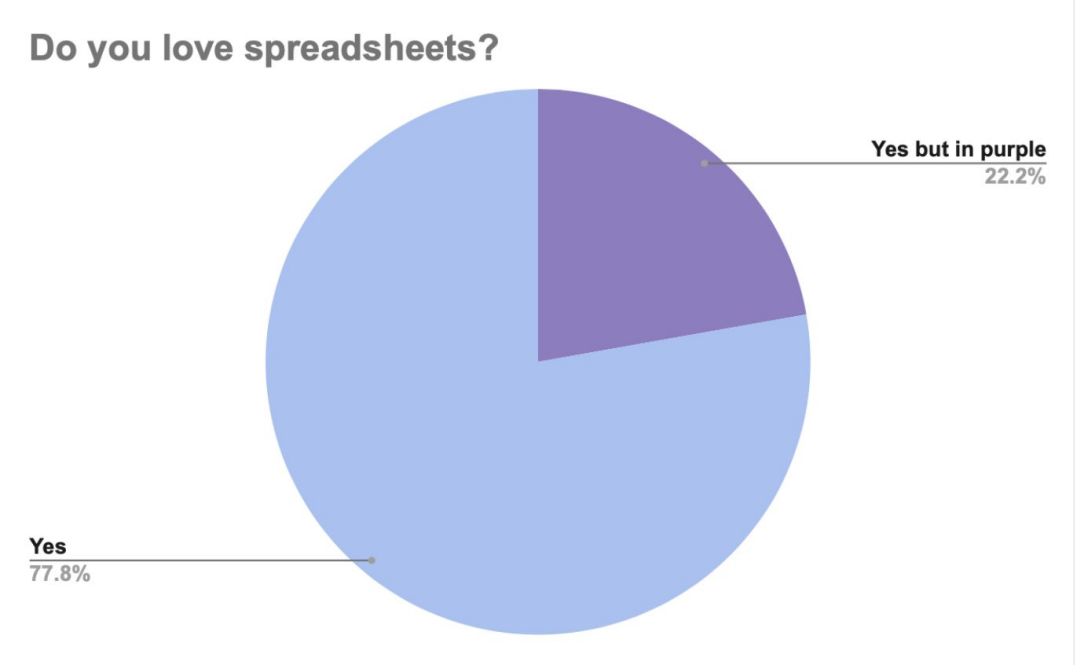
Make your own view

- Learn to love spreadsheets
- Make your own views
- Spot trends and deal with them



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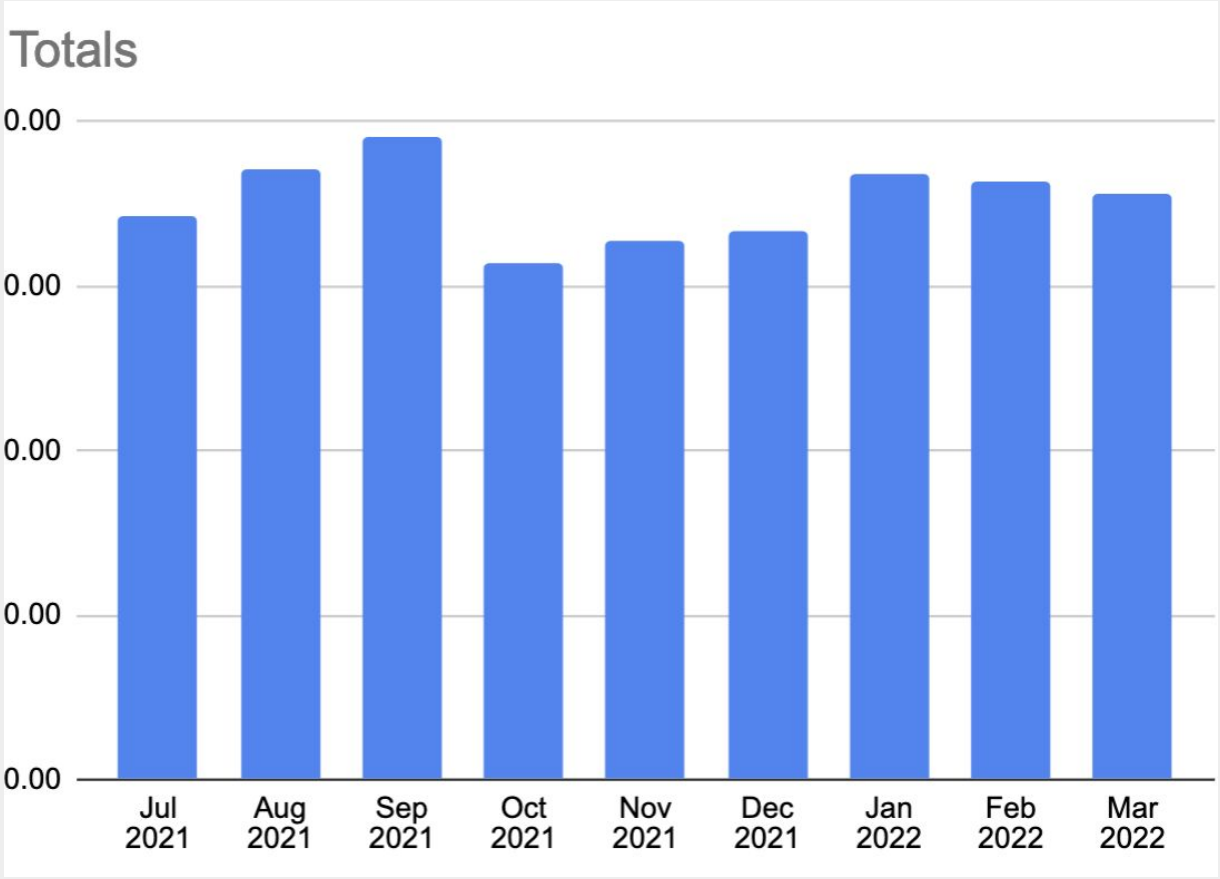
Totals
0.00
0.00
0.00
0.00
Jul 2021
Aug 2021
Sep 2021
Oct 2021
Nov 2021
Dec 2021
Jan 2022
Feb 2022
Mar 2022

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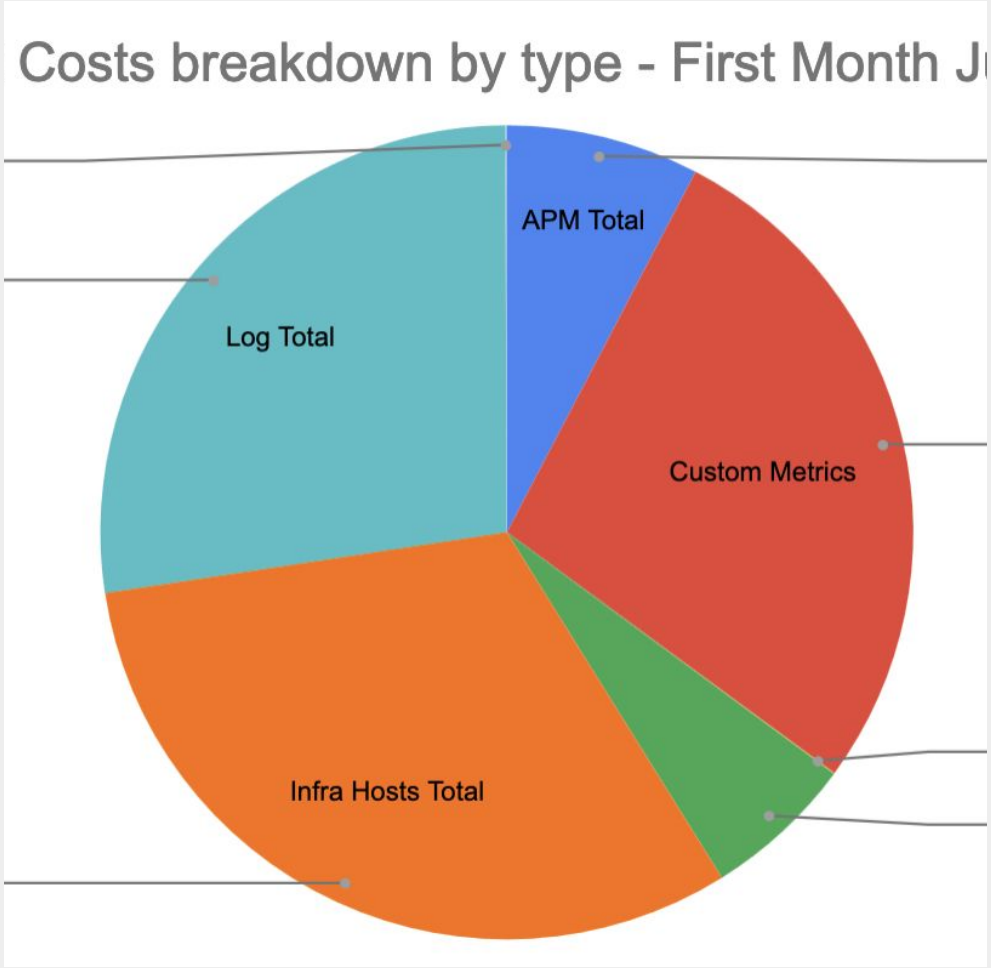
Costs breakdown by type - First Month J
APM Total
Log Total
Custom Metrics
Infra Hosts Total

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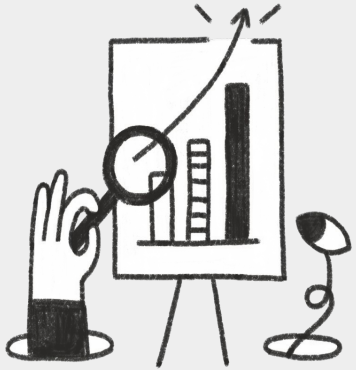
Read your Contract

- What's included? What's extra?
- Has your usage pattern changed since creation?
- What can you change?
- What changes are reversible?
- Is the package still the best fit?
- Downsize/upsize your commit
- Are there any important deadlines?
- What's the main driver? Hosts? Users? Events?



Monitoring Vendors do not tell ordinary users of the system when actions will cost extra. These users do not have any knowledge of what individual components will cost.

Nor should they need to if the system is well controlled and administered.

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~~Measure Everything~~

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LOCK IT DOWN

- Take admin of this tool seriously
- Super admins should be a tiny group
- Enabling new features should require a conversation
- Remove access to high cost triggers
- *“What is the problem you’re trying to solve?”*

WHO WATCHES THE WATCHMEN
monitors
monitoring tool

Monitor your Monitoring Usage

- If you can't monitor cost levels, monitor the related usage levels
- If high cost features can be triggered via code/PRs, and it's outside of your control, monitor and alert on anomalous usage levels
- It's not perfect but it's faster than just waiting for the bill

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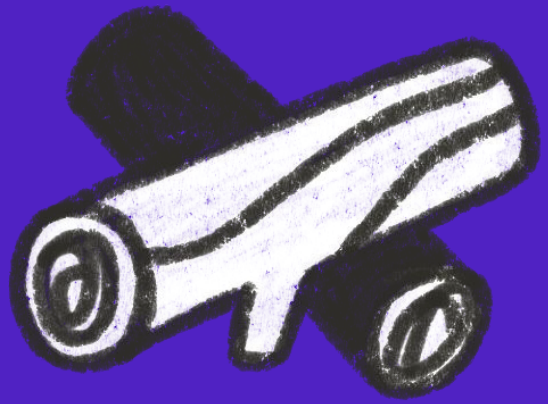
Logs



Strategies for Log Reduction

Analysis

- Not all logs are equal
- Retention periods - what you need Vs what you have
- Break down log volume by *status, source environment, service*
- Strategy for debug logs?*
- What part is costing the most? Production errors or Dev info?

Reduction

- Drop / Rate limit / Sample
- Allow list by source*
- Reduce retention period
- S3 buckets a better fit?
- Stop sending garbage
- Observability Pipeline
- Different destination indices
- Quotas with consequences

Ask your account manager to connect you with SMEs for this. They will help.

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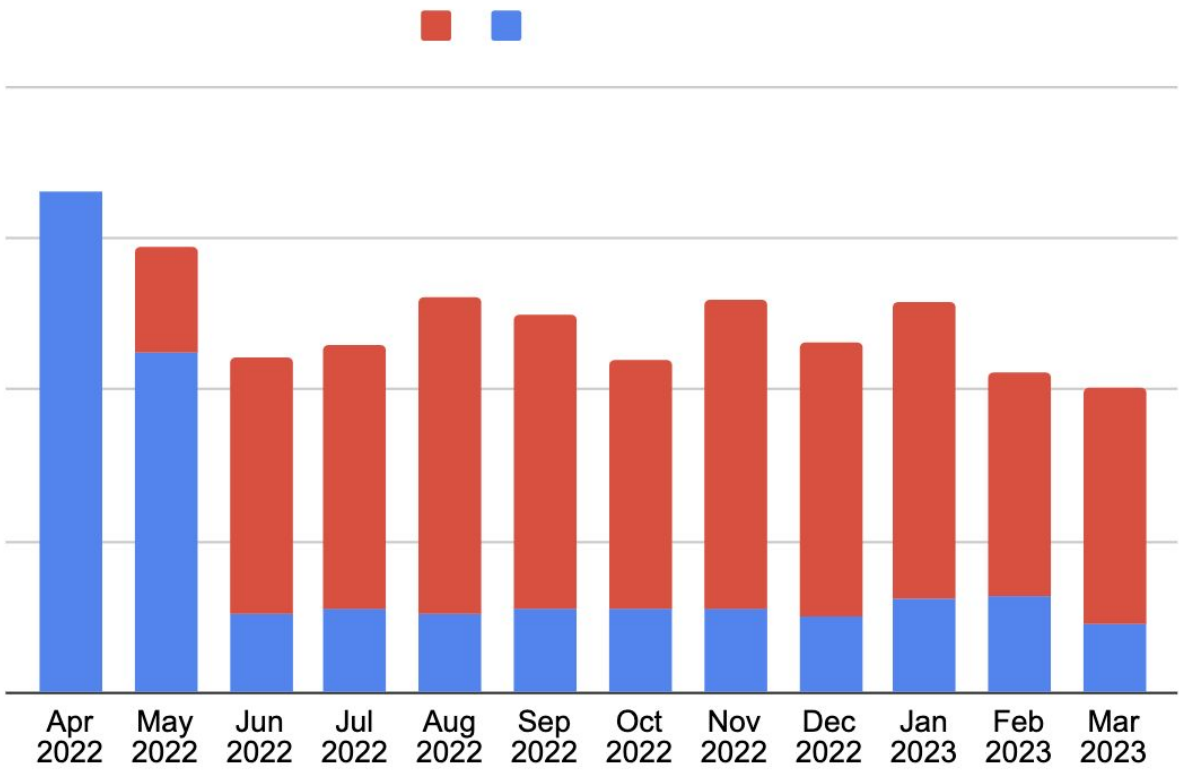
Impact of Adjusting Retention Period



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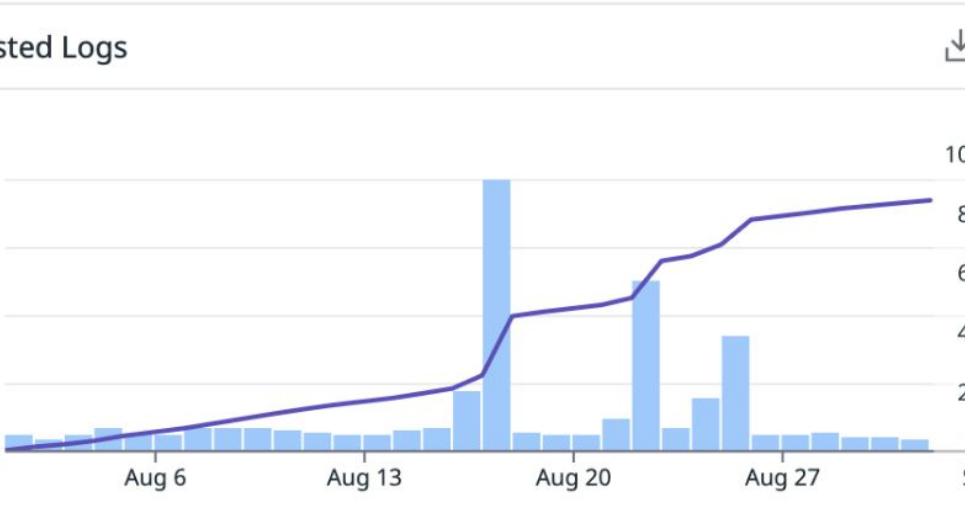
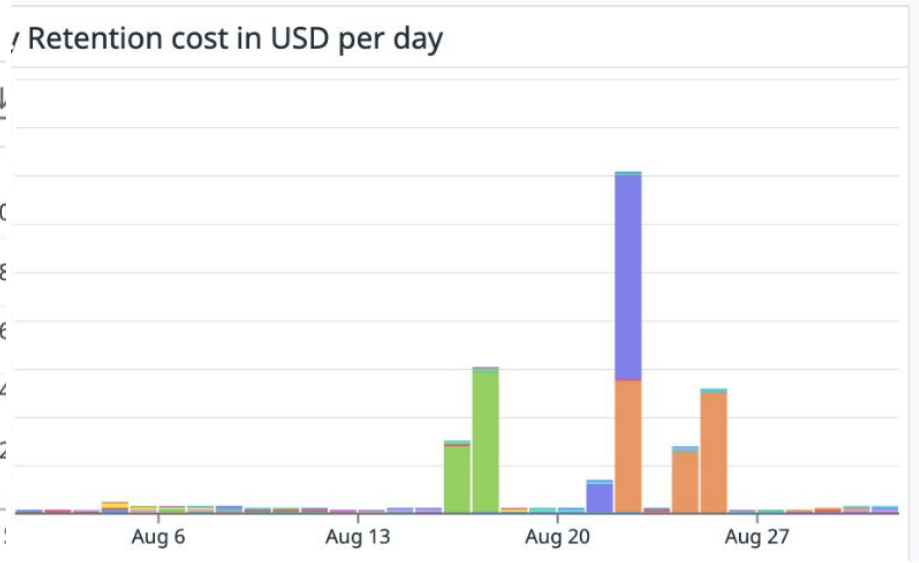
Before Observability Pipeline Installation

Ingestion Volume Spikes



Cost Spikes



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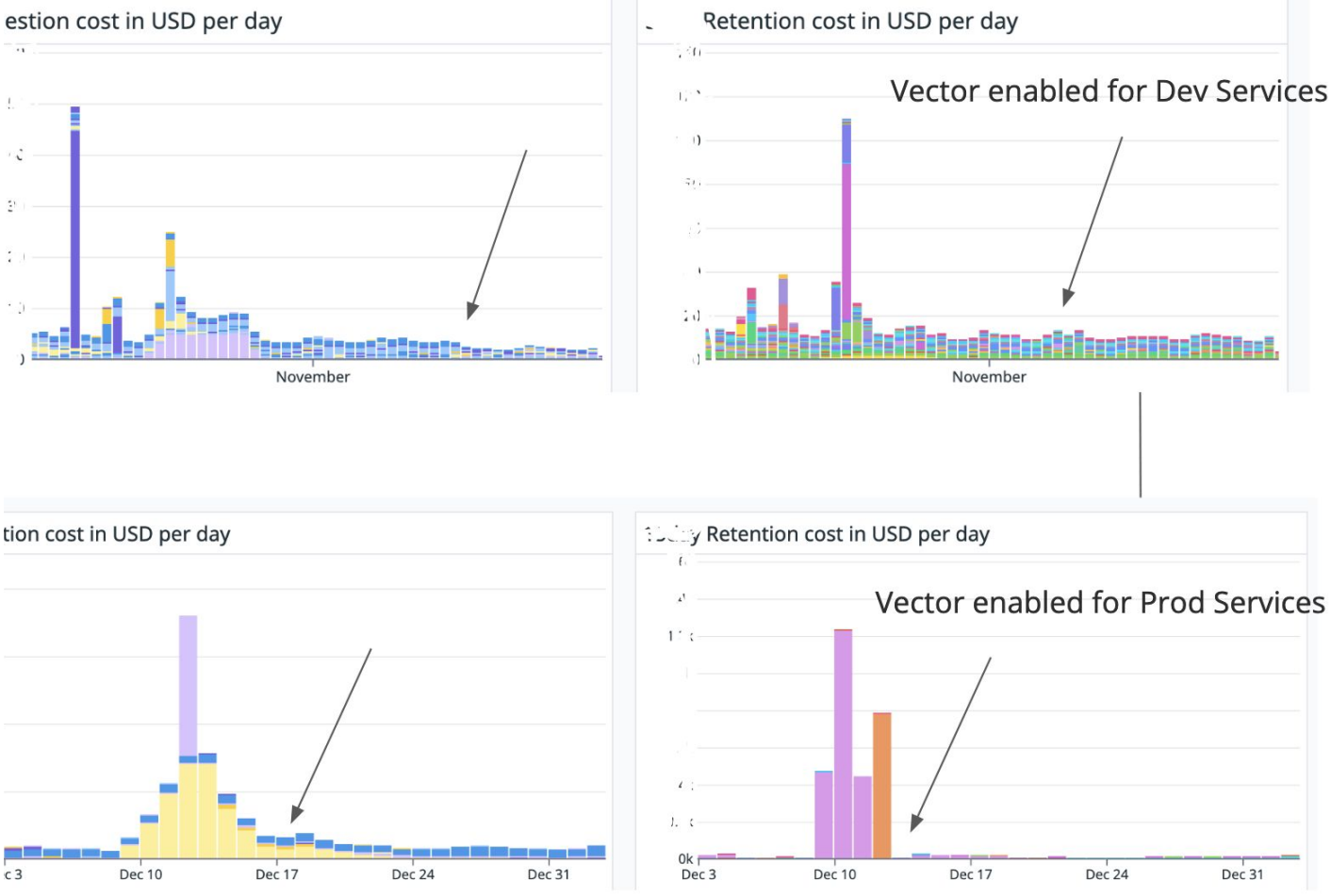
Observability Pipeline Impact - bye bye spikes



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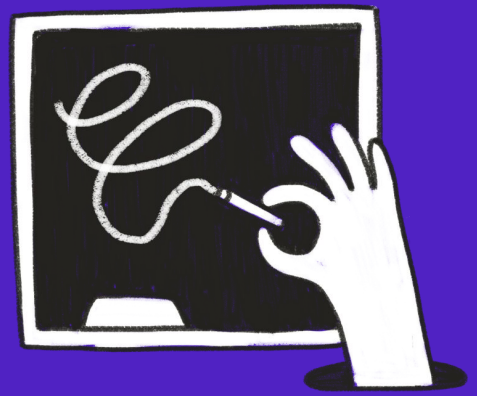
Custom Metrics

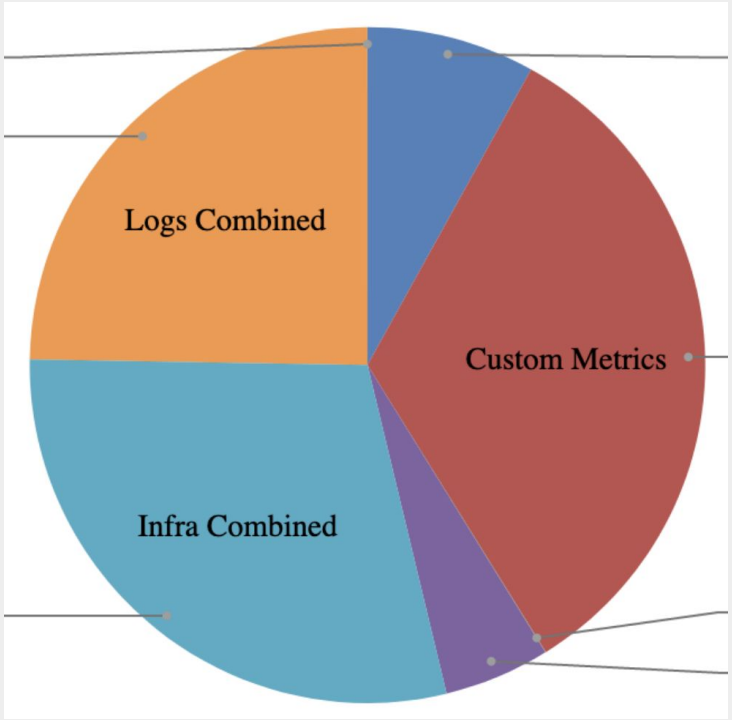


Custom Metrics

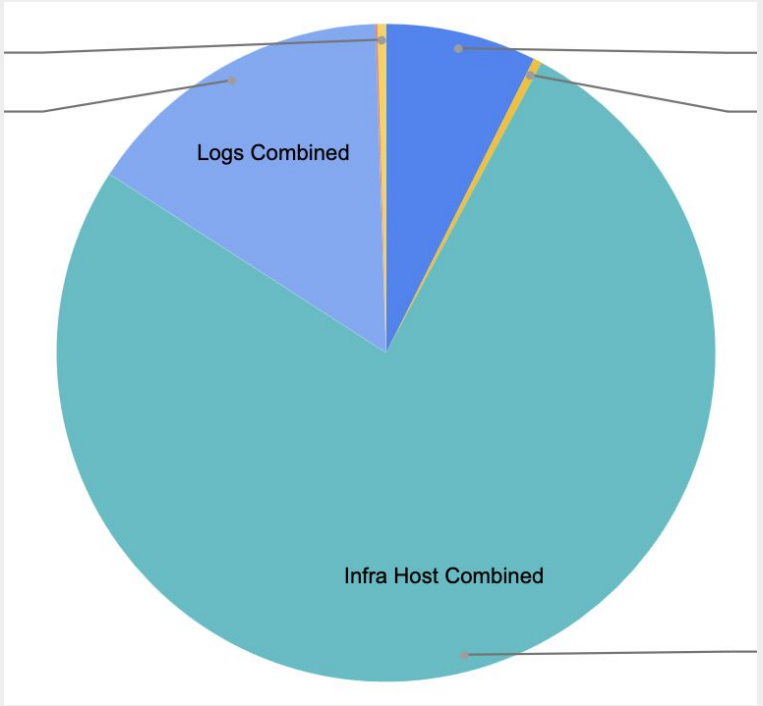
- Custom metric creation wasn't a problem, until it was
- Growth in learners, traffic and features led to higher cardinality
- **83**% of custom metrics generated were not actively queried in Dashboards and Monitors [the API is your friend]
- Lots of conversations
- Lots of PRs opened
- Switched to "free" metrics wherever possible*

Custom Metrics note: this shows costs not usage

June 2021



August 2022



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Go Talk to People

- Are teams even using the features we're paying for?
- Should they be?
- What do they really want? You need to know to plan your work.

Videos, tips of the days, office hours, AMAs, in person demos, team consultations, tech talks, onboarding training.

Automation & Safety Nets

- Do what you can, it doesn't have to be pretty
- You are trying to keep pace with lots of engineers and lots of Vendor product managers. You are outnumbered - automate.

Our methods:

- Rate limits via Observability Pipeline, Quotas, Alerts for usage pattern changes

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How to measure progress?

Baseline or Monitoring cost per host

Within the first year of our M&O team formation we:

- Kept the bill at the same amount
- Didn't lose any M&O, in fact, we added extra features
- Even as our company grew our monitored Infrastructure by **65%**
- Have a much better understanding of the tool and how our devs actually use it

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Glory!

Proclaim your victories from the ~~highest mountains~~
OKR summary meetings

- Execs need to know why your team exists
- Finance needs to know you are doing due diligence
- Devs need to know you're adding features and value, not just cutting costs

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Conclusions

Are we dissing Vendor Monitoring solutions?
No, but like *anything_as_a_service*, you need to have controls and discipline around the usage.*

Are we finished? Also No.

The needs of devs & the product are changing all the time. We still have a lot of agents of change. There's always room for improvement.

If you think you've got it all covered, go and talk to your teams again :)

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Thank you!

I’m on Linkedin - look for Joan at Udemy & the SREcon slack, say Hi!

Questions?

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