What is even happening in prod!?

A journey into getting insights into prod systems, with metrics by Prometheus.

Me

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Anything useful will be posted to Twitter.

Software engineer @ Sitewards

Ops is a hobby. If you need an ops engineer, I'm not your guy.

———

Please Interrupt.

Please Share!
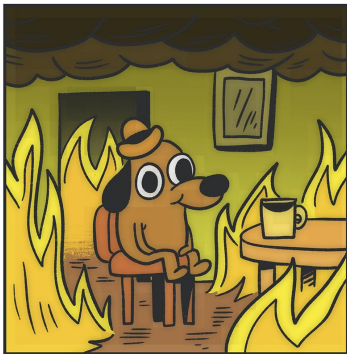
Thanks <3

Fabxc · Anton Bortiskiy · Patrick Kubica · Winston Nolan · Matthew Beane · Prometheus Team

The problem

- Occasionally, stuff breaks.
- We don't really know what effects our changes are having
- We don't really know what's happening in production

Solution

Get some metrics!

Monitoring

Observe and check the progress or quality of something over a period of time.

The goal

So, what are metrics even

What do we even collect

Numbers. Not logs, events, labels. Just numbers.

There are two (main) types of numbers:

Counts - How often something has happened

Gauges - At what rate is ${THING} happening

Other stuff that is related

What do we even monitor

Saturation
% Utilisation
# Error Count

Websites · Applications · Networks · Hardware · Queue Length · Latency · Upstream Apis · PHP Errors · Page Load Time · Cron Jobs · Job Success · Metrics Missing · Everything

Making sense of all that information
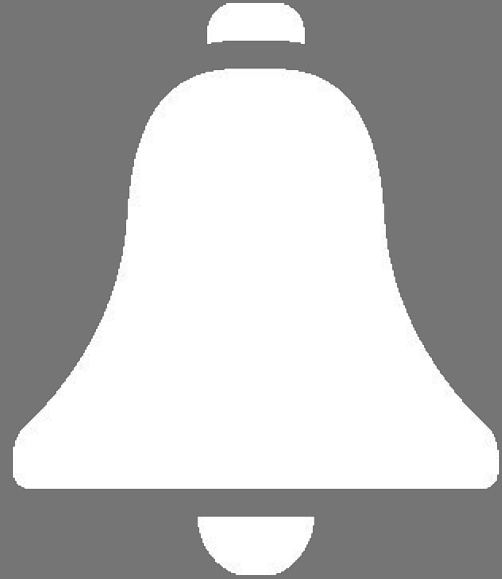
99% of the monitoring we ignore

1% is super important

So, we make bells ring when something exciting happens.

Ringing the bell

A "good" alert?

[S]pecific

- An alert must specifically explain the nature of the issue.

[A]ctionable

- An alert must provide the user with clear instructions, and must generate user action.

[R]elevant

- An alert must reach the right person.

INSTANCE db01 IS REFUSING CONNECTIONS

The database instance "db01" is refusing new MySQL connections. This has been an issue since 2016-10-11 15:45:12. Please see the following resources:

- Playbook [https://wiki.yourorg.com/db/playbooks]
- Acknowledgement [https://alerts.yourorg.com/2138s-1]
- Dashboard [https://dashboard.yourorg.com/21312]
- Metrics [https://prometheus.yourorg.com/?search=whatever]

You are the incident leader for this issue. Please begin the incident response process immediately.

Email is dead. Long live ...Email?

Wait we do this?!

Our Stack

Prometheus	Exporter	Alert Manager	Grafana
Collects the metrics, stores them in its database	Queries an application, exposes metrics for Prometheus to collect	Sends alerts	Makes pretty dashboards

I want to play with it

http://demo.robustperception.io

You are welcome to play with it right now. I don't mind; the point is to get familiar with the stack!

Prometheus

Prometheus is a tool for collecting, storing and querying numeric data. You use it for:

- Noting information about your computer, process or whatever.
- Querying that information later when you're looking for something.

How does it work?

1. HTTP/gRPC request to the application to read the data.
2. Store the data in a database
3. Later, query the data.

Alerts can be created from these queries.

```
# HELP node_disk_bytes_read The total number of bytes read successfully.
# TYPE node_disk_bytes_read counter
node_disk_bytes_read{device="nvme0n1"} 1.3840384e+07
node_disk_bytes_read{device="sda"} 5.762806784e+09
# HELP node_disk_bytes_written The total number of bytes written successfully.
# TYPE node_disk_bytes_written counter
node_disk_bytes_written{device="nvme0n1"} 0
```

—

Alert Manager

Sends alerts.

(Pretty dull)

Pretty Graphs!

Grafana

Magento Extension

- New
- Gonna be in a client as soon as I can get the PM to sign off

https://github.com/sitewards/magento-prometheus

Plz Help

Results

Nothing breaks?

Lets Encrypt All The Things

- Now we know when things stop working
- We know far enough ahead we can fix it

I am bad at guessing how much things need

- Prometheus lets us snapshot predicted usage (and resource allocation) against actual usage
- I'm bad at guessing how much things actually use
- MySQL is a memory hog

Automatic in Kubernetes

- Based on Annotations
- Very little configuration required
- Automagic monitoring

Turns out, backups were killing a client.

- For some reason, at 1am backups took longer.
- We moved them to 2am. #problemsolved

I didn't get what you just said

Brian Brazil, and Fabxc are very nice maintainers. There's also a mailing list. Lastly, there's a tonne of stuff on youtube.
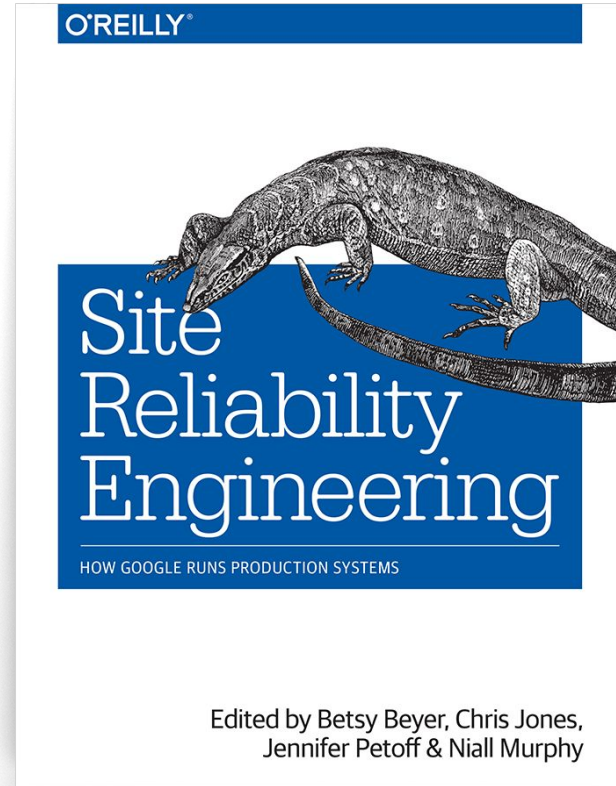
You should buy this book. Oh wait, It's free.

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Questions + Feedback

Find all information at:

https://git.io/vbXkH

Give feedback at:

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