



How Pinterest tracks the state of builds

A Journey through Pinterest's build program

Manuel Nakamurakare
Engineering Manager @ Mobile Builds
@mnakamurakare



Pinterest

Our mission is to bring everyone the inspiration
to create a life they love

460M+ Global Monthly Active Users

Mobile @ Pinterest

~ Millions
lines of code



~ Hundreds
contributors

~ Ten of Thousands
builds / month

~ Thousands
commits / month

Why should you care about builds?

Why is a build score important?

$$\frac{\partial}{\partial a} \ln f_{a, \sigma^2}(\xi_1) = \frac{(\xi_1 - a)}{\sigma^2} f_{a, \sigma^2}(\xi_1) = \frac{1}{\sqrt{2\pi\sigma}} \exp\left[-\frac{(\xi_1 - a)^2}{2\sigma^2}\right]$$

$$\int_{\mathbb{R}_n} T(x) \cdot \frac{\partial}{\partial \theta} f(x, \theta) dx = M\left(T(\xi) \cdot \frac{\partial}{\partial \theta} \ln L(\xi, \theta)\right)$$

$$\int_{\mathbb{R}_n} T(x) \cdot \left(\frac{\partial}{\partial \theta} \ln L(x, \theta)\right) \cdot f(x, \theta) dx = \int_{\mathbb{R}_n} T(x) \cdot \left(\frac{\frac{\partial}{\partial \theta} f(x, \theta)}{f(x, \theta)}\right) \cdot f(x, \theta) dx$$

$$\frac{\partial}{\partial \theta} M T(\xi) = \frac{\partial}{\partial \theta} \int_{\mathbb{R}_n} T(x) f(x, \theta) dx = \int_{\mathbb{R}_n} \frac{\partial}{\partial \theta} T(x) f(x, \theta) dx$$



What are some ways to measure
the state of builds?

DORA

Deployment frequency

Change failure rate

Time to restore

SPACE

Well being

Performance

Communication

Collaboration



Build Metrics

Build dev experience

Local

CI Builds

Android 85% (B)

iOS 70% (C)



Good



Acceptable



Needs work



Lots of issues



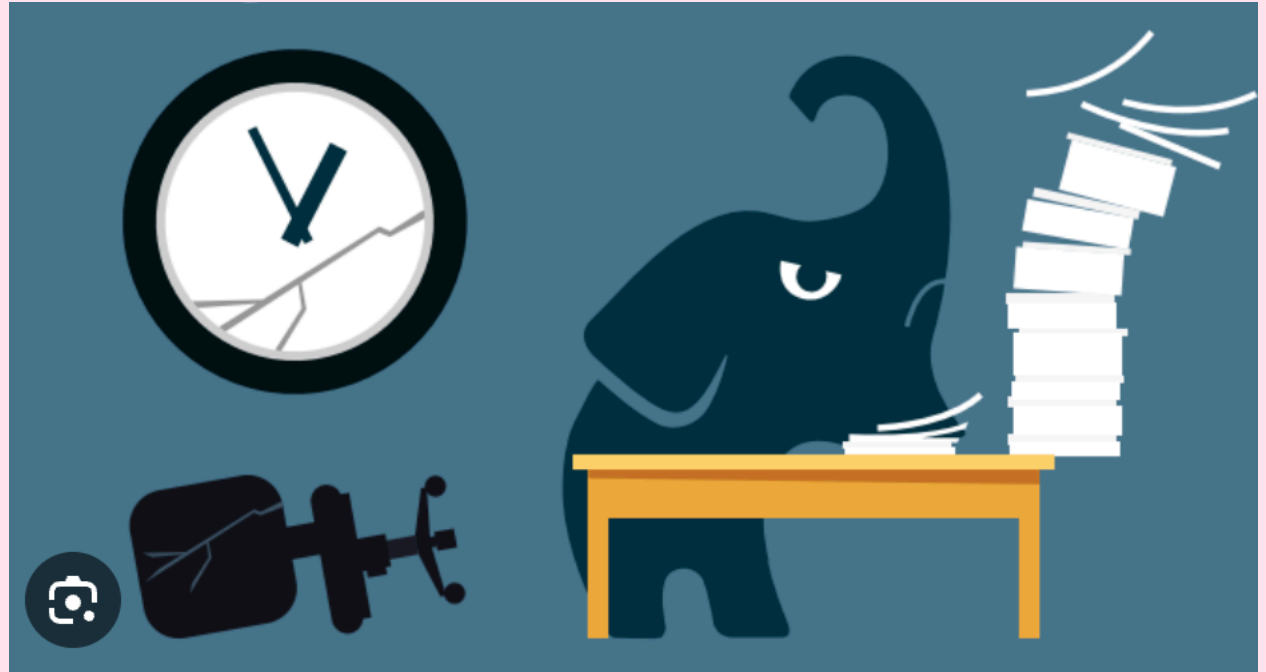
Unacceptable
Code Yellow

How is it calculated?

Local / CI Build time

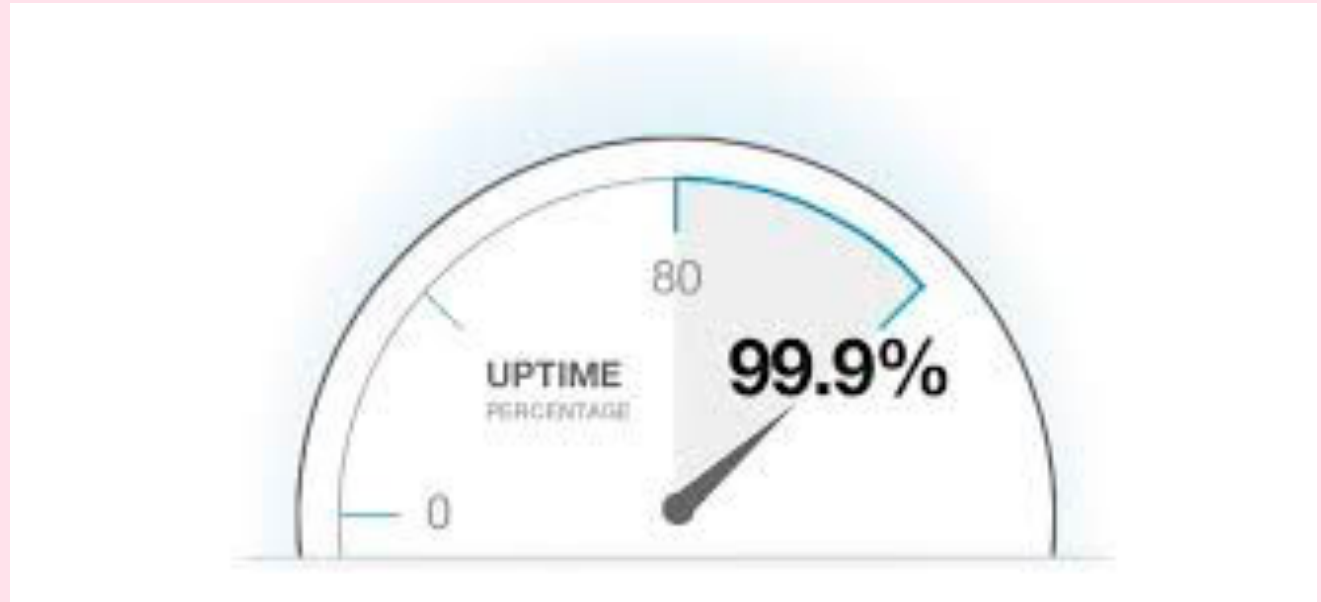
Metrics

Pipelines



CI Uptime

Pipelines



Formula

Multiply all of the following:

- % of local builds times below a threshold
- % of CI builds times below a threshold
- CI Uptime

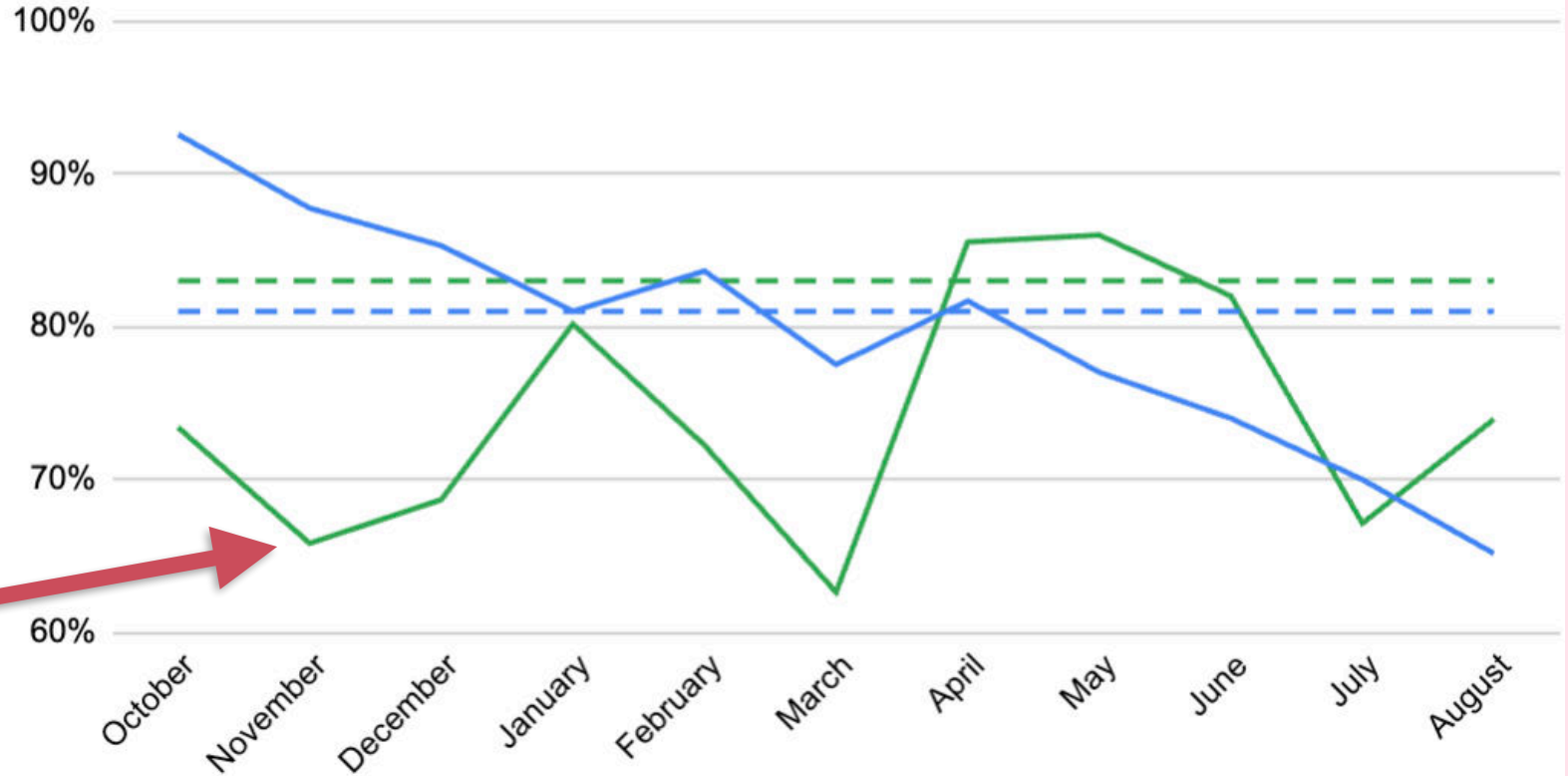
Tips

- Use existing metrics
- Iterate
- Remember the objective

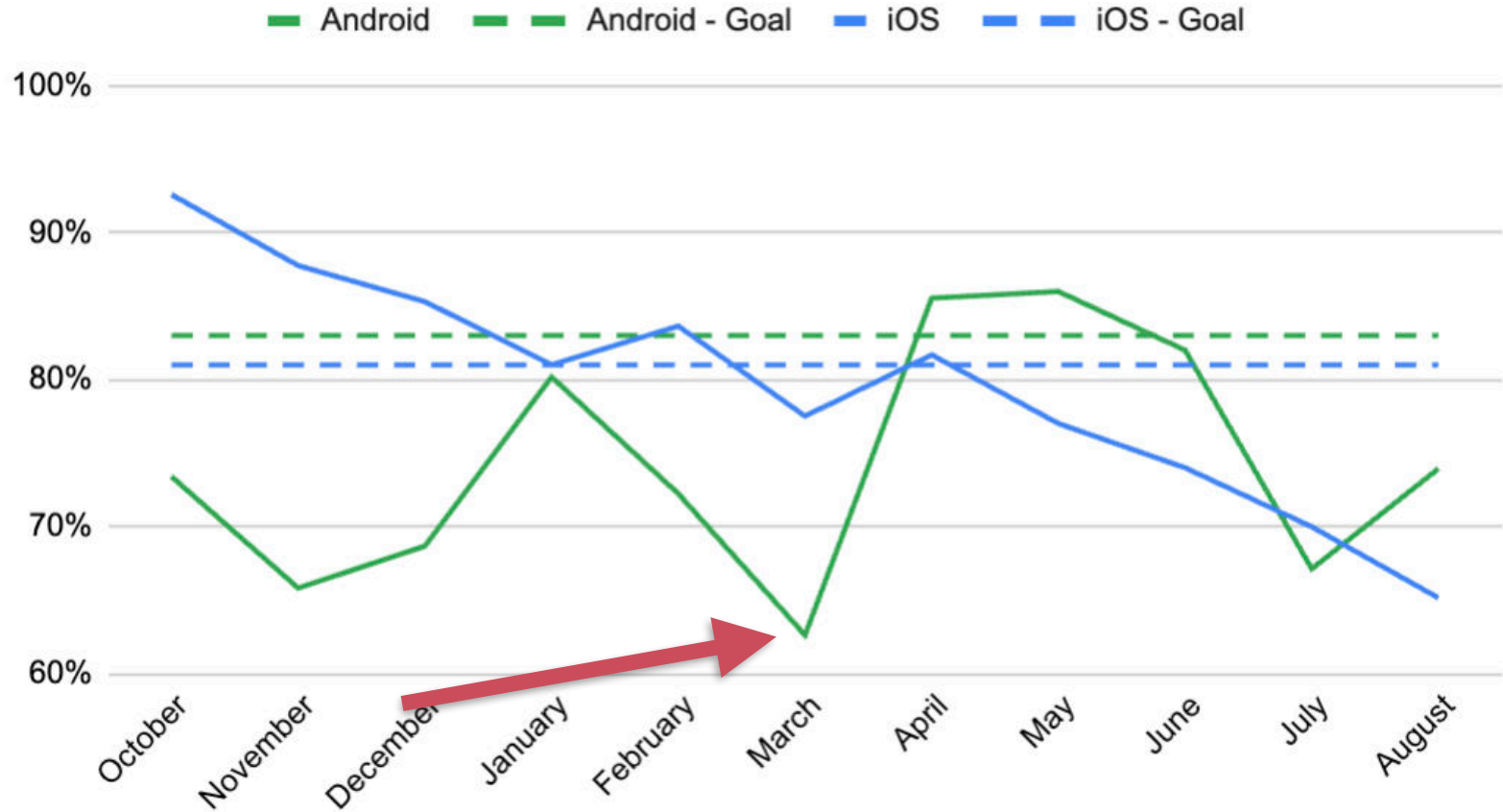
The Build Score in Action!

BHV Score

Android Android - Goal iOS iOS - Goal

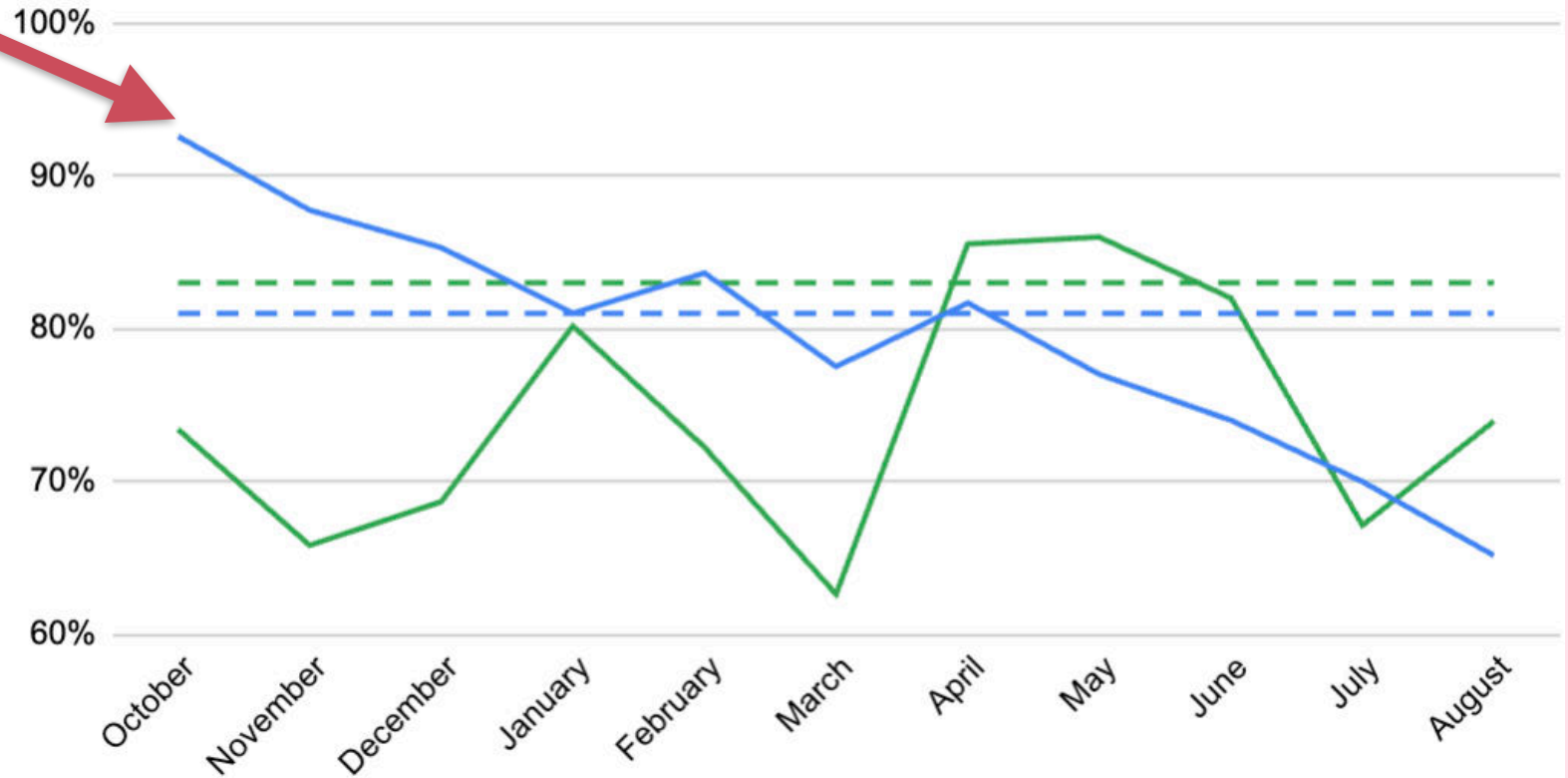


BHV Score



BHV Score

Android Android - Goal iOS iOS - Goal



Thank you