How we built 'BARITO' to enhance logging

Building a logging infrastructure commensurate to GO-JEK's scale

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Imagine coming home from a tiring day of work and your white-fenced house is suddenly pink. You'd have questions. Many of them. Did I arrive at the correct house? Who did this? When did this happen? For what? And why pink? You'd look around frantically for clues. Did any of your neighbours see anything? You'd

want answers. So imagine how glad you'd be once you realized you've installed security cameras in front of your house not long ago. All you have to do now is take a look at the log and get all the answers.

Now, what about complex applications and infrastructures systems? That's thousands of white fences turning into every colour imaginable. How can you ensure security cams record everything? At this point you'd agree that **logging** is one of the most critical parts of any system. It gives us the visibility on how a system is doing and the ability to identify what went wrong when something goes haywire.

What about GO-JEK? Well, the absence of logging infrastructure brings us nothing but havoc. We've been through more than our fair and we critically need to improve in some areas:

Mean Time To Respond (MTTR)

At GO-JEK, we need to improve our MTTR. We have millions of bookings each day. If our MTTR is high, can you imagine the number of drivers missing potential orders? The number of people who may now be late for their appointments with each additional minute we take to solve an issue? Without proper logging, it's akin to finding a needle in a haystack — because you have to check across thousands of machines in the faint hope that you might just stumble across the problem.

ELK scale

At GO-JEK's scale, the conventional ELK stack (without sharding) we used did not scale for the quantity of logs. Each team has their own ELK cluster, but maintaining ELK clusters while everyone in the team has other pressing responsibilities is becoming a luxury we can't afford. Another problem is that some of the teams grow too fast and the ELK became inadequate and overwhelming to support enormous amount of logs.

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