

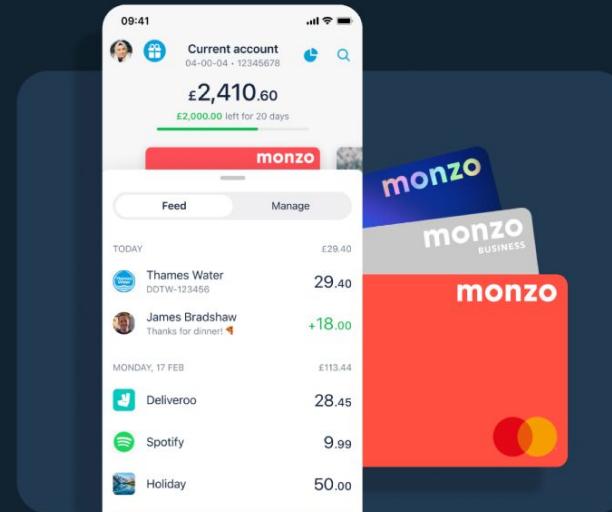
# Shipping at lightspeed with Developer Tooling

Suhail Patel (سہیل باتل) | @suhailpatel | <https://suhailpatel.com>

# Banking made easy

Spend, save and manage your money, all in one place. Open a full UK bank account from your phone, for free.

[Open a Monzo account](#)



monzo

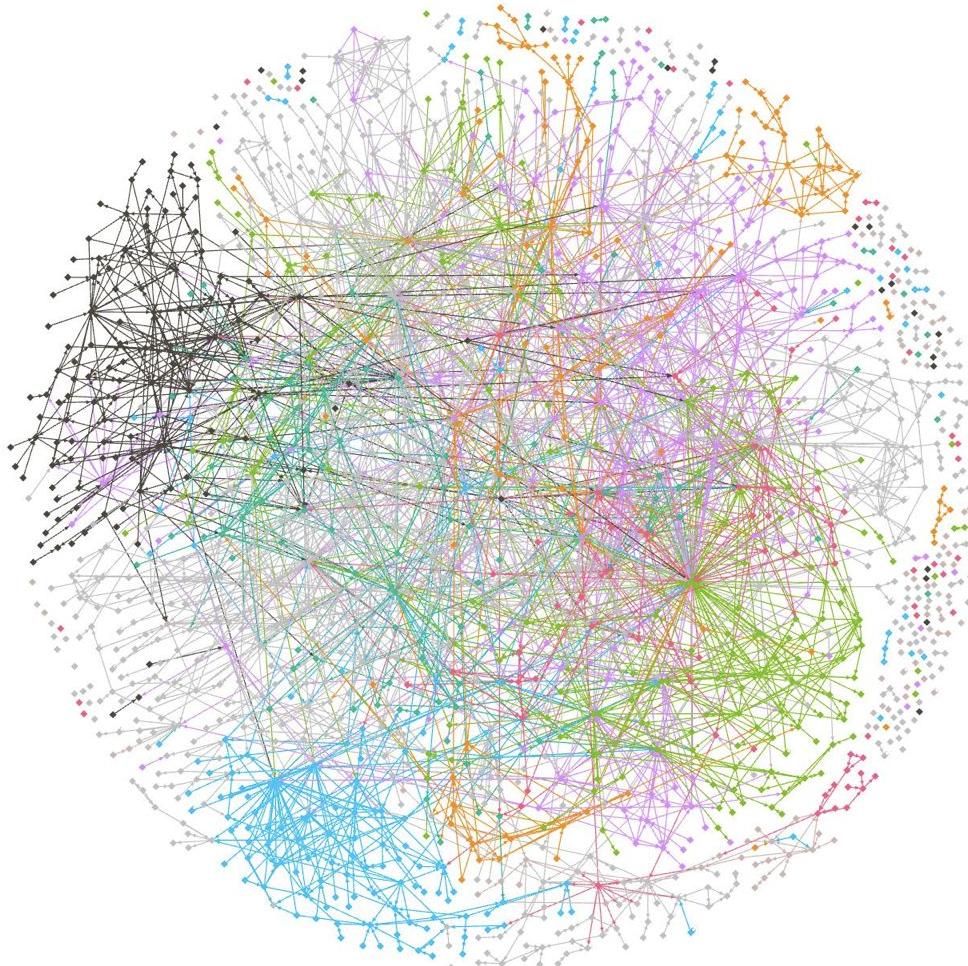


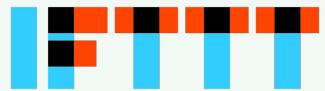
```
$ curl https://api.monzo.com/branches  
{"branches": [], "comment": "All our branches are on GitHub."}
```



**سہیل باتل** | Suhail Patel

Senior Staff Engineer at Monzo  
@suhailpatel





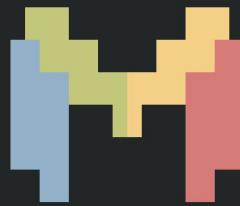
monzo



● ○ ●  1

-zsh

~ >>> £ -e s101



⚙️ Using API: https://api.tools. [REDACTED]  
🔧 Checking API connectivity... ✓  
🔑 Authenticating as suhail [REDACTED] ... ✓  
s101 ↩️ []

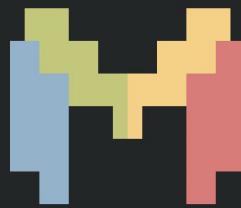
● ○ ●

~

zsh

-zsh

~ >>> £ -e s101



⚙️ Using API: <https://api.tools.> [redacted]  
📡 Checking API connectivity... ✓  
🔑 Authenticating as suhail [redacted] ... ✓  
s101👉 find user\_00009jw3puspjwJL5hdrhh|

● ○ ●  281

less

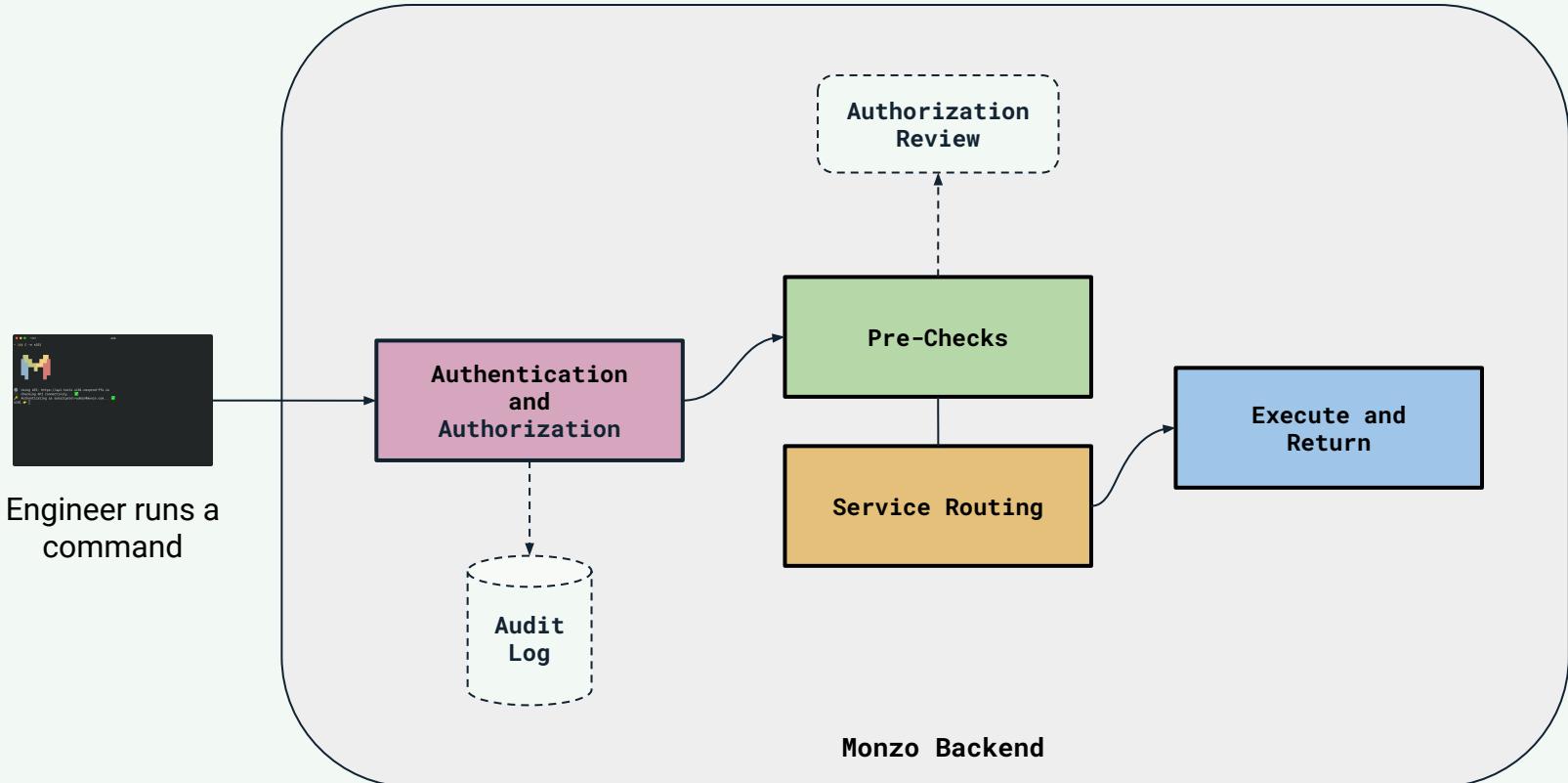
```
[  
//  
// rpc GET /service.personal-customer-profile/profiles/read {"user_id":"user_00009jw3puspjwJL5hdrhh","ar  
//  
{  
    "user_id": "user_00009jw3puspjwJL5hdrhh",  
    "created": "2019-06-17T10:53:18.565Z",  
    "updated": "2021-05-07T13:24:33.511Z",  
    "verified": true,  
    "legal_name": "Groundskeeper Willie",  
    "preferred_name": "Groundskeeper Willie",  
    "name_hints": {},  
    "date_of_birth": "1960-01-01",  
    "email": "willie@willie.com",  
    "phone_number": "+99712121212",  
    "address": {  
        "address_lines": [  
            "Flat 1, 230 City Road",  
            "London"  
        ],  
        "postal_code": "W12 0AA",  
        "country_code": "GBR"  
    },  
    "status": "active",  
    "parsed_preferred_name_full_latin": {  
        "full_name": "Groundskeeper Willie",  
        "first_name": "Groundskeeper",  
        "last_names": "Willie",  
        "given_names": "Groundskeeper",  
    }  
},  
lines 1-29]
```

● ○ ● ↵%1

-zsh

s101 ➜ find merch\_000097FrvrnH1S5fwLhyRl

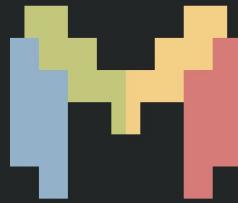
```
[  
//  
// rpc GET /service.merchant/group/read {"merchant_group_id": "grp_000094K1Qo3UVca0T2twcT", "bypass_cache": true}  
//  
{  
    "id": "grp_000094K1Qo3UVca0T2twcT",  
    "logo": "https://lh3.googleusercontent.com/HUz0NzYH0Q2IhkMVJ06af09fVCWExdcilwok5jSmv_3qqbf0fPvakcmG7mv2SzUelPxJF  
LRPXYwqZBylmyZ-fzJaNUQet4s",  
    "name": "McDonald's",  
    "emoji": "🍔",  
    "created": "2016-01-19T17:51:10.668Z",  
    "updated": "2020-02-07T16:32:20.802Z",  
    "metadata": {  
        "created_for_merchant": "merch_000094K1Qo2QZZfpp1g6wz",  
        "foursquare_category": "Fast Food Restaurant",  
        "foursquare_category_icon": "https://ss3.4sqi.net/img/categories_v2/food/fastfood_88.png",  
        "foursquare_id": "4bbeeb1330c99c74a36c5411",  
        "foursquare_website": "http://www.mcdonalds.co.uk",  
        "google_places_icon": "https://maps.gstatic.com/mapfiles/place_api/icons/restaurant-71.png",  
        "google_places_id": "ChIJn3YcYEwbdkgRjxdh9_uIomw",  
        "google_places_name": "McDonald's",  
        "suggested_name": "McDonald's",  
        "suggested_tags": "#food",  
        "twitter_id": "mcdonaldsuk",  
        "website": "http://www.mcdonalds.co.uk/ukhome/Restaurants/restaurant_locator.html"  
    },  
    "updated_by": "user_00009CEeWlnguGapGj5zdp",  
    "category": "eating_out",  
    "status": "ACTIVE"  
},  
//
```



● ● ● % 1

-zsh

~ >>> £ -e s101



```
⚙️ Using API: https://api.tools.██████████
🔧 Checking API connectivity... ✓
🔑 Tip: you can select 'Always Allow' for Keychain
🔑 Authenticating as suhai ██████████ ... ✓
s101 🤲 config get BASE:service.stooge/slog
{
    "logHandlerErrors": true
}

s101 🤲 config edit BASE:service.stooge/slog[]
```

```
$ svcquery
Learn things about services, based on your local git checkout.
```

Usage:

```
  svcquery [command]
```

Available Commands:

analyze	Extract information from API and IAPI services.
endpoints	List the typhon endpoints of a service
help	Help about any command
history	Count the number of services and handlers at different points in time.
owners	List the owners a service

Use "svcquery [command] --help" for more information about a command.

```
$ droid  
Controls your connected Android device from your computer
```

Usage:

```
droid [command]
```

Available Commands:

app-info	Gets the app info on your device
app-version	Get the version of the currently installed Monzo Debug App
clear-data	Clears data on your monzo app
dark-mode	Toggle dark mode on the device
deeplink	Goes to a deeplink on your android connected device
dev-options	Goes to the developer options app
help	Help about any command
log	Logs the monzo app on your device
login	Auto logs in the specified user
power-button	Simulates a tap of the power button
record	Records a video on your connected android device
screen	Shares your android screen with your computer
screenshot	Takes a screenshot on your connected android device
talkback	Enable and disable talkback

Use "droid [command] --help" for more information about a command.

● ○ ●  1

-zsh

```
~ >>> shipper deploy --s101 b1dd0147ed service.api.teapot
```

```
🐙 Using wearedev
```

```
↳ Commit b1dd0147ed09
```

```
Services: service.api.teapot
```

```
🌐 s101 deployments:
```

```
↳ s-api-teapot: 8c95d42e821f, needs deploying
```

```
🚢 Started deploy_0000 [REDACTED]
```

```
✓ Already built: io.gmon.service.api.teapot
```

```
✓ Ready to deploy
```

```
👉 service.api.teapot
```

```
🤖 Will deploy with progressive rollouts (automated rollback)
```

```
💬 You'll receive updates on your deployment via Slack
```

```
? deploy to s101? Yes
```

```
⌚ Rollback commands:
```

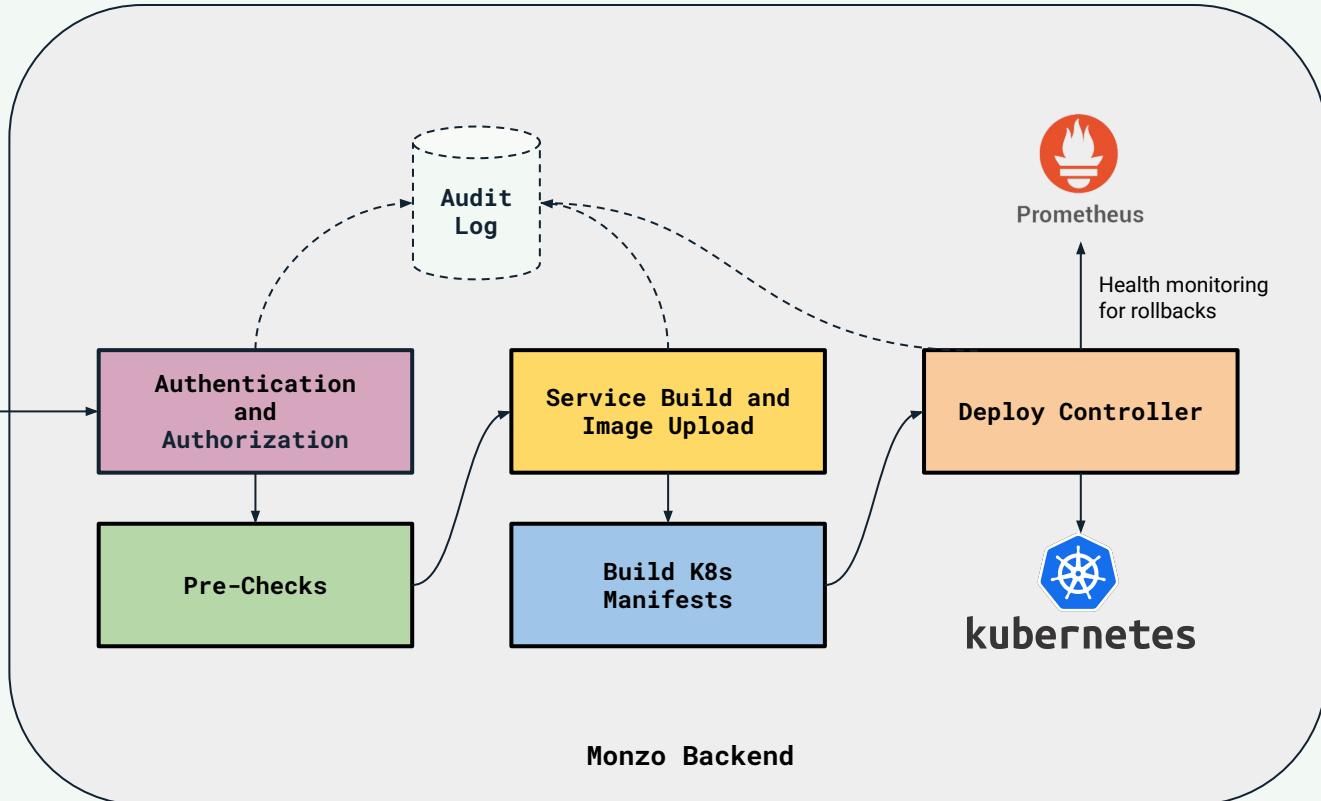
```
shipper deploy --s101 8c95d42e821f service.api.teapot
```

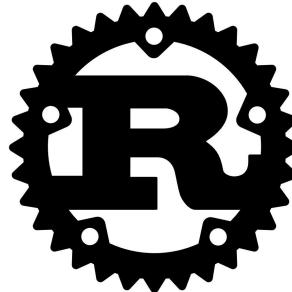
```
✓ Progressive rollout started
```

```
~ >>> [REDACTED]
```

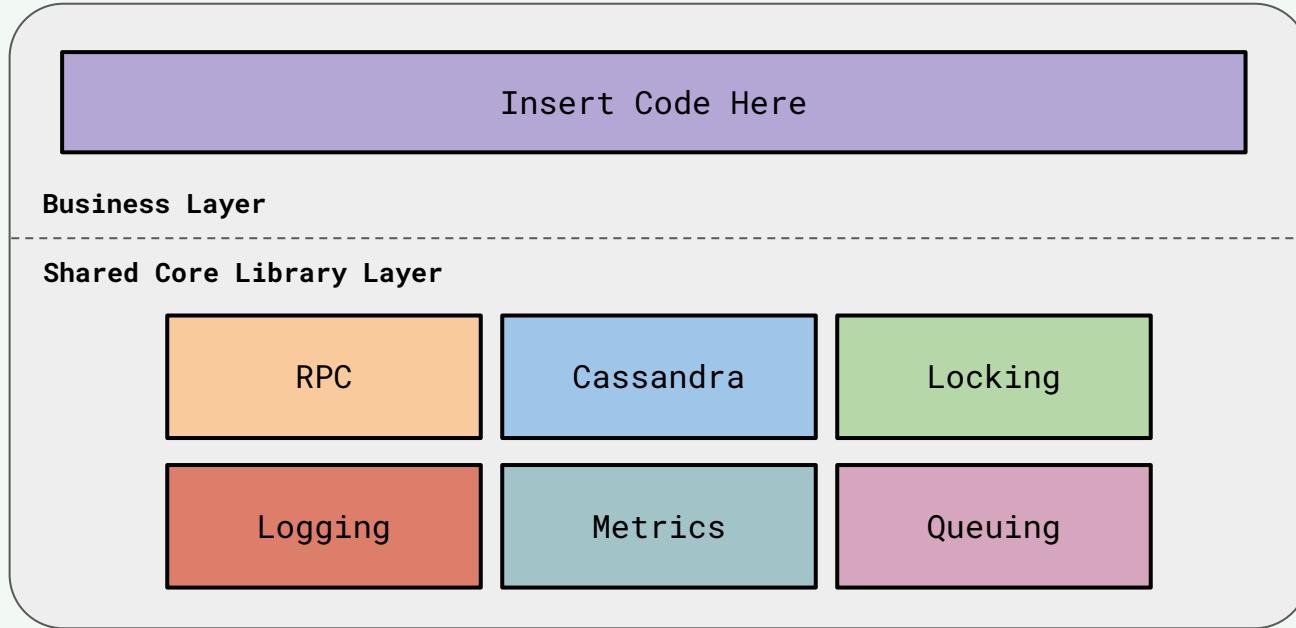


Engineer wants to  
deploy a change



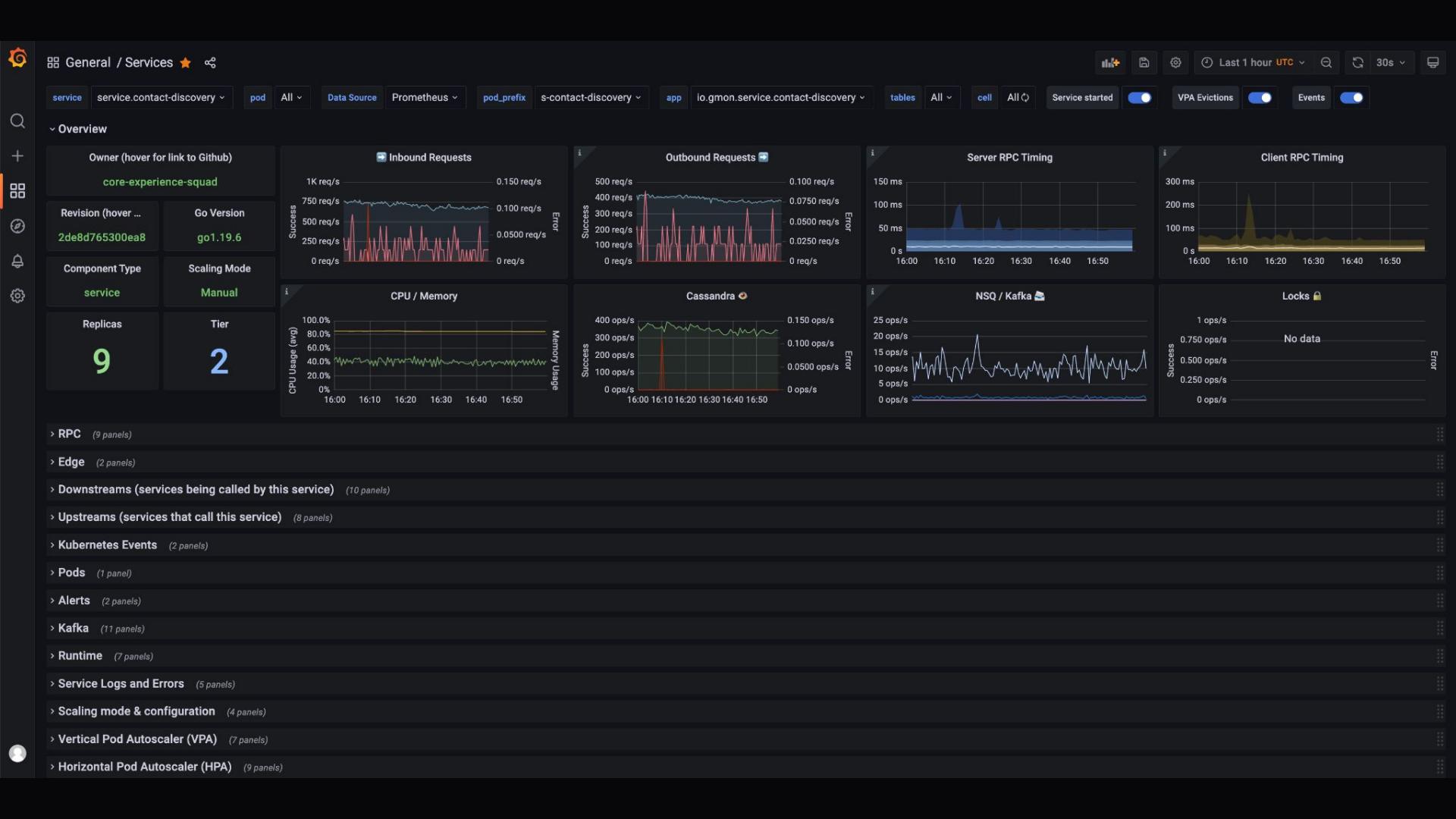


**The Rust  
Programming  
Language**





monzo



27 JANUARY 2023

Technology

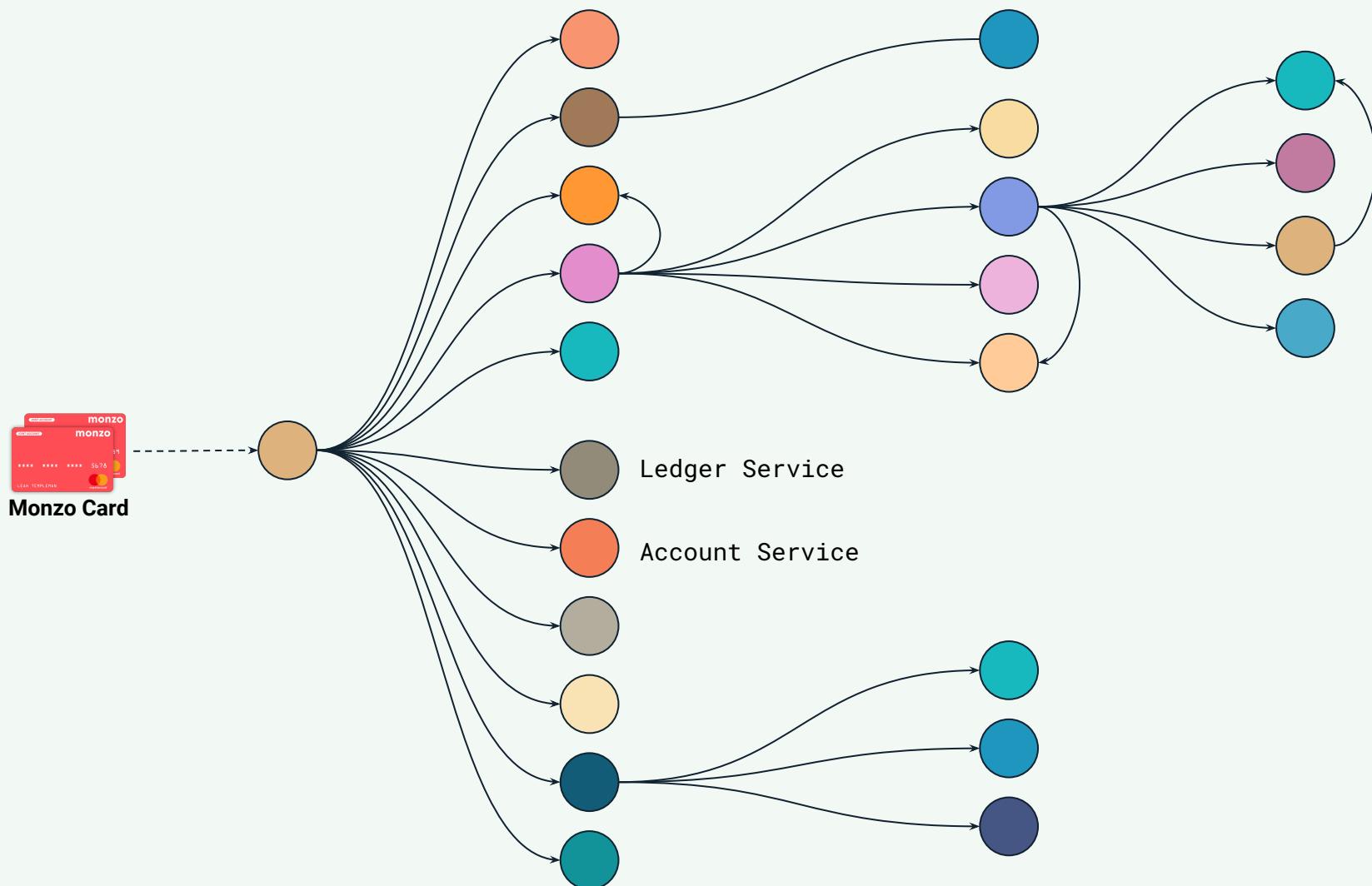
## How we prepare for huge spikes in traffic as millions of our customers get paid early



At Monzo our goal is to make money work for everyone, and what better way to do that than by giving our customers their money as soon as we can? That's why we built our [Get Paid Early](#) feature, also known as GPE. This lets customers request upcoming payments a day early (technically three days early if the payment is due on a Monday, as you can get it on Friday ready for the weekend!). Unsurprisingly, this is a much loved and heavily used feature, and while we love being able to offer it, it isn't without its challenges.

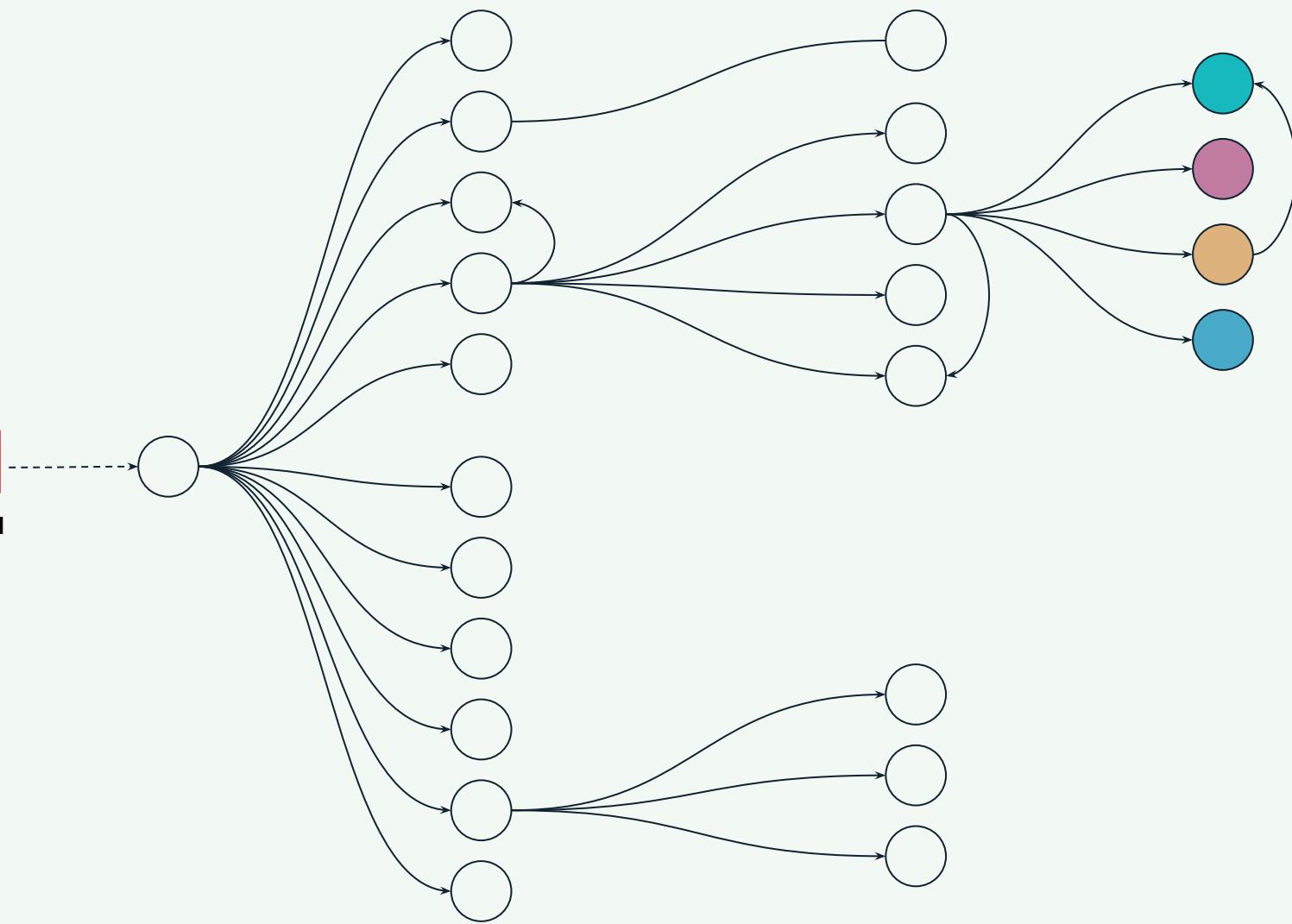
In this post I'll explain the problems that occur when hundreds of thousands of customers all request their millions of payments







Monzo Card



```
$ ls -lah
lrwxr-xr-x@ 20 Jan 19:40 Makefile -> ../Makefile-service
-rw-r--r--@ 26 Nov 17:59 README.md
drwxr-xr-x@ 26 Nov 17:59 config
drwxr-xr-x@ 26 Nov 17:59 consumer
drwxr-xr-x@ 26 Nov 17:59 dao
drwxr-xr-x@ 26 Nov 17:59 domain
drwxr-xr-x@ 26 Nov 17:59 handler
-rw-r--r--@ 26 Nov 17:59 main.go
drwxr-xr-x@ 10 Feb 15:59 manifests
drwxr-xr-x@ 26 Nov 17:59 proto
```

```
rules:  
  - id: no-print-usage  
    pattern: print($X)  
    message: Use logging.debug() instead of print()  
    severity: INFO  
    fix: logging.debug($X)  
languages:  
  - python
```



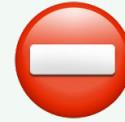
**Write a static analysis rule**



**Identify & allowlist existing usages**



**Get existing usages to zero**



**Enforce rule across codebase**



## Changes approved

1 approving review by reviewers with write access. [Learn more.](#)

[Show all reviewers](#)

✓ 1 approval

👤 1 pending reviewer

### ✓ All checks have passed

28 successful checks

[Hide all checks](#)

✓  ci/circleci: graphql\_schema\_and\_stitching\_validation — Your tests passed on CircleCI! [Details](#)

✓  ci/circleci: integration\_tests — Your tests passed on CircleCI! Required [Details](#)

✓  ci/circleci: k8s\_yaml\_integrity — Your tests passed on CircleCI! Required [Details](#)

✓  ci/circleci: keyspaces\_static\_analysis — Your tests passed on CircleCI! [Details](#)

✓  ci/circleci: makefile\_files\_check — Your tests passed on CircleCI! Required [Details](#)

✓  ci/circleci: proto\_static\_analysis — Your tests passed on CircleCI! Required [Details](#)

### ✓ This branch has no conflicts with the base branch

Merging can be performed automatically.

[Squash and merge](#)

You can also [open this in GitHub Desktop](#) or view [command line instructions](#).

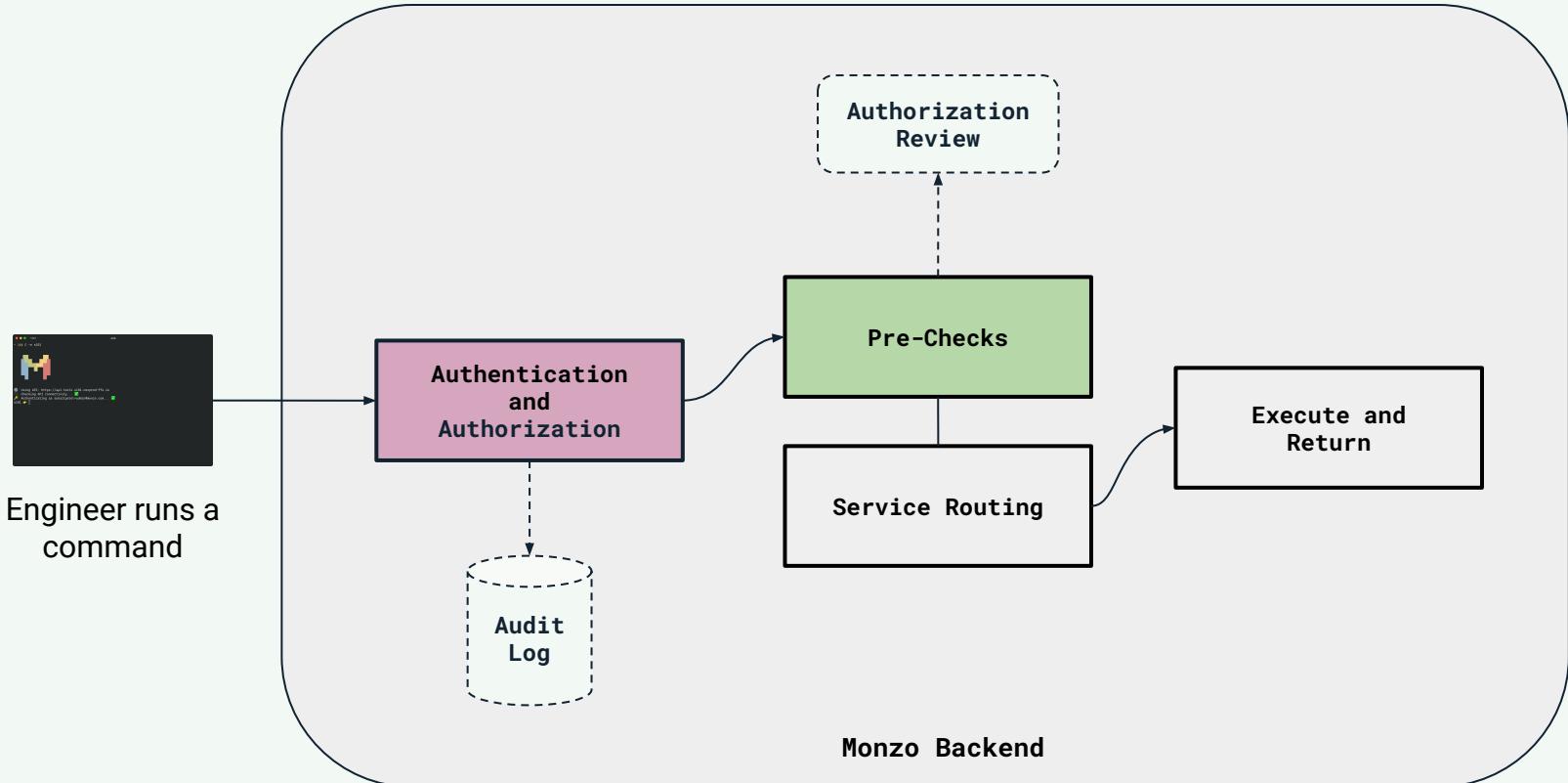
```
syntax = "proto3";
package slackproto;

import "tools/protoc-gen-typgon/proto/typgon.proto";
import "tools/protoc-gen-validator/proto/validator.proto";

service slack {
    option (router).name = "service.slack";

    // Post a message to a channel
    rpc POSTMessage(PostRequest) returns (PostResponse) {
        option (handler).path = "/post";
    }

    // Returns message history for a given channel
    rpc ChannelHistory(ChannelHistoryRequest) returns (ChannelHistoryResponse) {
        option (handler).path = "/channel_history";
    }
}
```



```
// Post a message to a channel
rpc POSTMessage(PostRequest) returns (PostResponse) {
    option (handler).path = "/post";
    option (who_can_rpc) = CONTRIBUTORS_WITH_APPROVAL;
}
```



**tobi lutke** ✅ 🔒  
@tobi

For software engineering, my sense is that the phrase “premature optimization is the root of all evil” has massively backfired. Its from a book on data structures and mainly tried to dissuade people from prematurely write things in assembler. But the point was to free you up to think harder about the data structures to use, not leave things comically inefficient. This context is always skipped when it’s uttered.

**Not all fast software is world-class, but all world-class software is fast.** Performance is \_the\_ killer feature. [...]

We need the engineers in all companies fight for this more. Product leads are not the right owners of the end performance of the software. This needs to be encoded in the professional pride of the software engineering discipline. Leaders in companies need to encourage it and hold engineering accountable. It's simply not ok to fritter away the performance of the products for random reasons. Every user of your products cares exactly as much about latency as engineers do when typing in their terminal. They just don't have the words to describe what they don't like about the experience and neither should they.

<https://twitter.com/tobi/status/1787139157078188180>



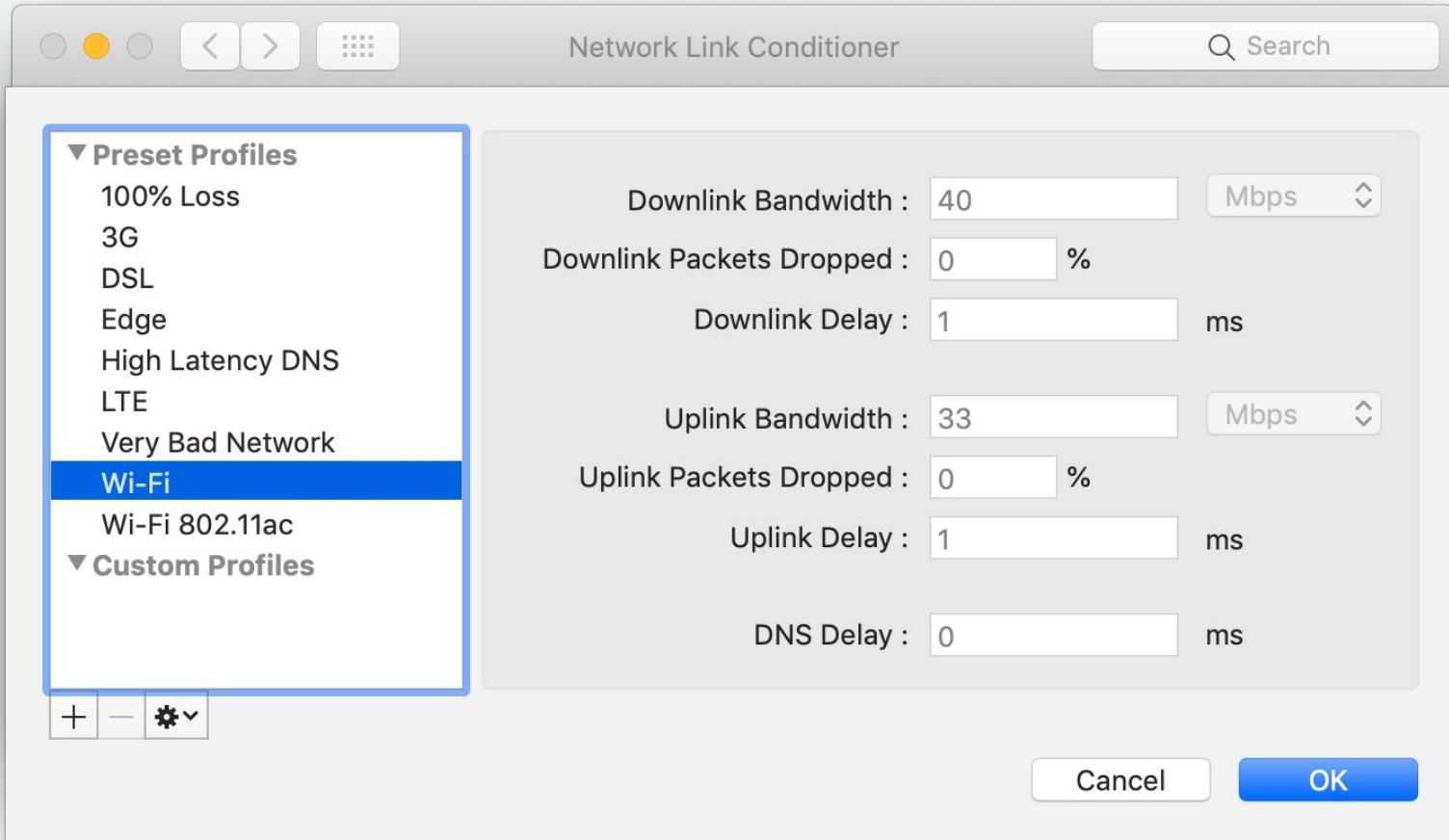
**tobi lutke**    
@tobi

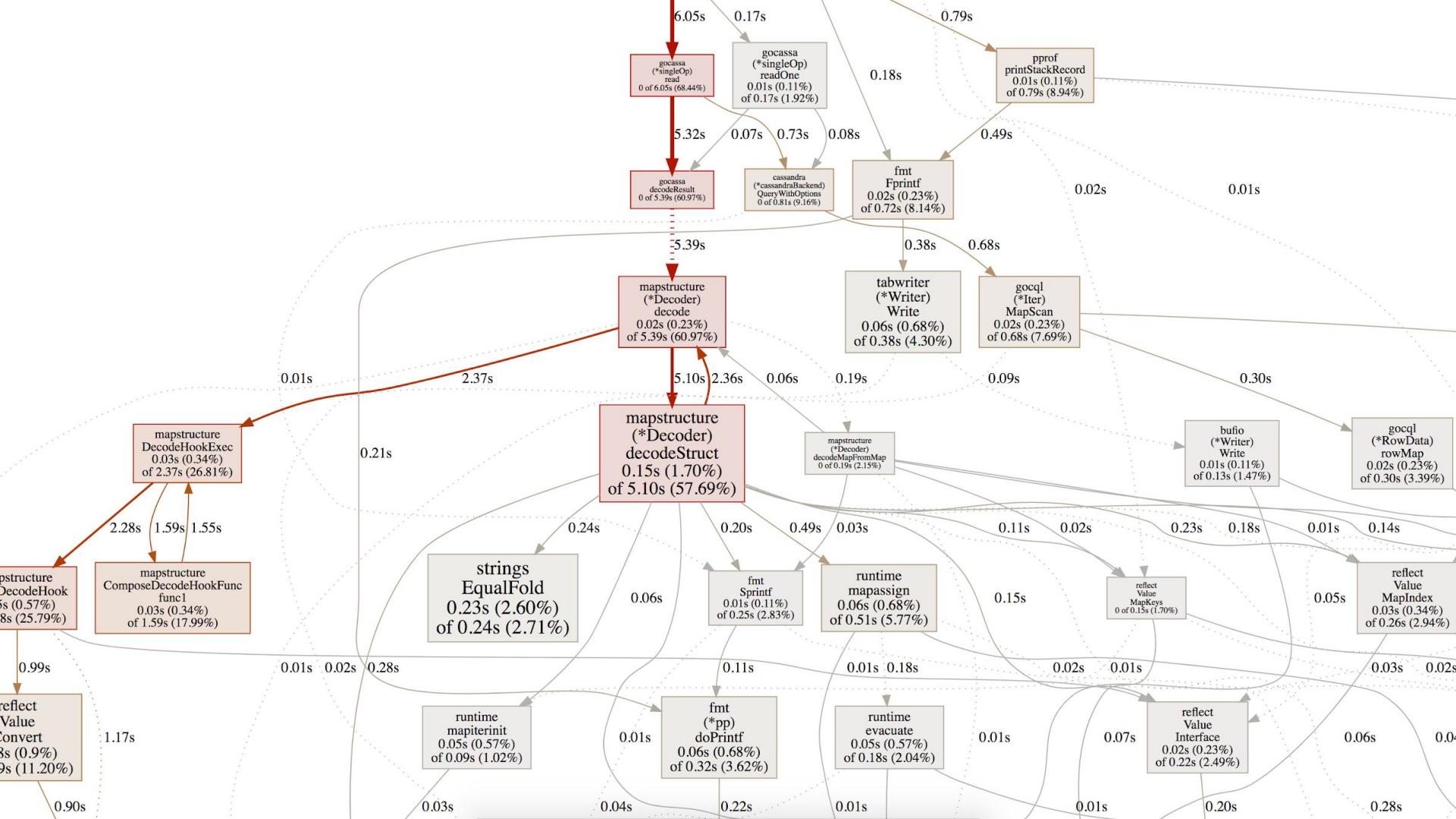
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<https://twitter.com/tobi/status/1787139157078188180>









# Backend Engineering 101

◀ 33 backlinks

[Welcome to Backend Engineering 101!](#)

[How to use this tutorial](#)

[Get help](#)

[Tutorials](#)

[Sessions and reading](#)

[Other resources](#)

## Welcome to Backend Engineering 101!

These tutorials will walk you through creating your first backend services at Monzo, and introduce you to the tools, processes, and ways of working we use every day as backend engineers.

The tutorials will teach you how to create a new service, implement RPC handlers, query Cassandra (our database), publish and consume messages from the Firehose (our pub/sub abstraction), write unit tests, and deploy your code.



### Before you start

1. Carefully complete all the [backend onboarding steps](#). You'll find yourself looking at error messages if you don't.

2. Set up your code editor of choice. Check the guide below for advice getting the most out of your code editor with Go.

☰ [Code editors and Golang](#)

## How to use this tutorial

Work through this tutorial at your own pace. If you are new to Monzo, you'll see your onboarding

13 MAY 2020

Technology

## How we moved our Faster Payments connection in-house



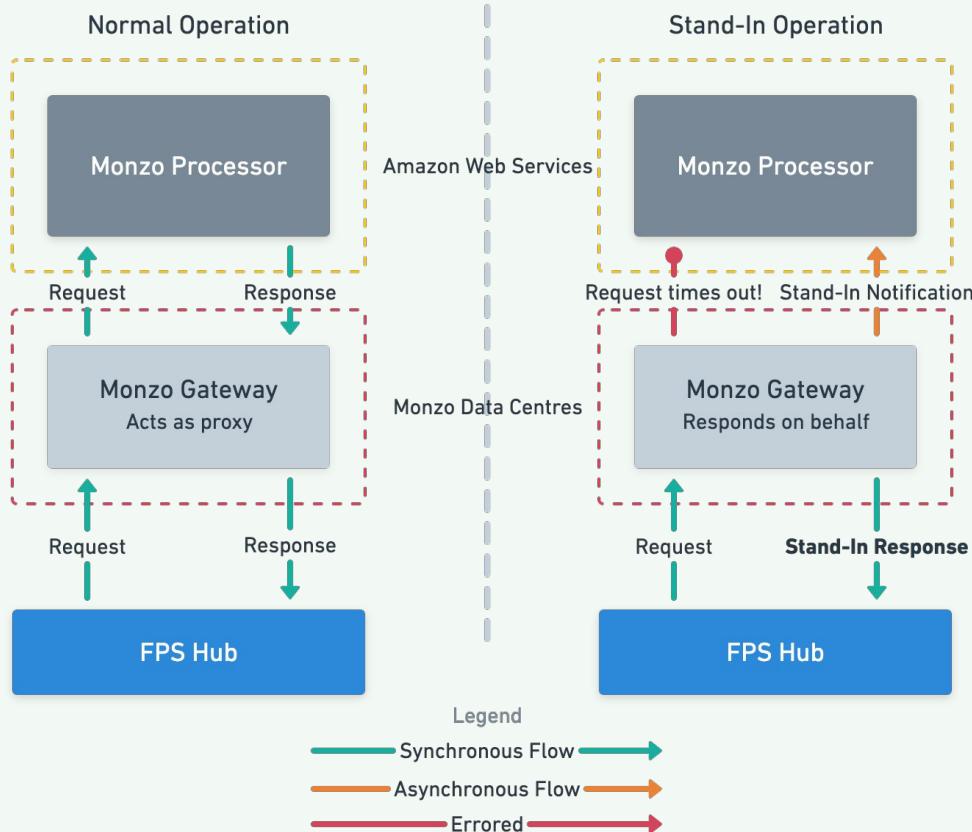
At Monzo, we constantly strive to provide industry-leading reliability for our customers. But we [let our customers down](#) on the 30th May last year, when we experienced problems making and receiving bank transfers, leaving people feeling rightly frustrated.

At the time of the incident, we relied on a third party provider to operate the component which connects Monzo to the UK bank transfer network. This component is known as the gateway. As an outcome of the incident, [we promised you that we'd build our own gateway within our internal systems](#). We recognise that operating our own infrastructure and systems is the key to reliability, and we needed to establish more specialised expertise into Monzo.

Our in-house gateway has been running since November 2019, and we wrote a blog post earlier [announcing the successful outcome of the project](#). In this post, we want to give you some insight into how we approached this as an engineering challenge.



### How does Faster Payments work?



monzo

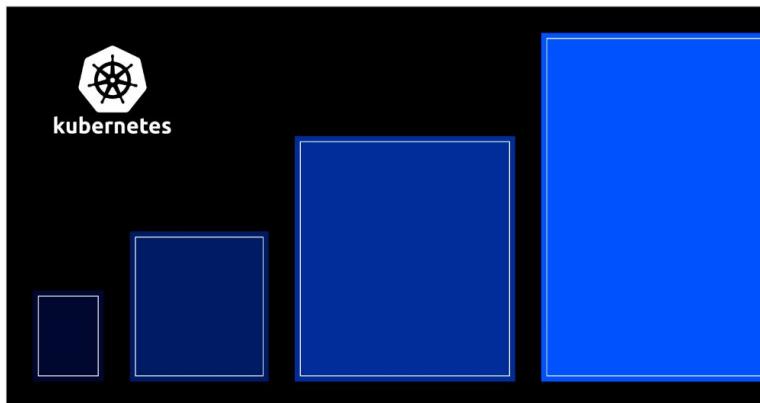
# Scaling Container Technologies at Coinbase with Kubernetes

Share



**TLDR:** Our recent evaluation of Kubernetes underscored its suitability for scaling Coinbase into the future. In the past, a migration to Kubernetes raised concerns due to the operational burden of running and securing the control plane in-house. We've now concluded that managed Kubernetes offerings reduce this operational burden without compromising our stack security.

By Clare Curtis [Engineering](#), 6 June 2022, 3 min read time



Almost two years ago we released a blog post detailing [why Kubernetes is not part of our technical stack](#). At the time, migrating to Kubernetes would have created a whole new set of problems that outweighed any near-term benefits. However, as these technologies have matured, our newly-formed Compute Team devised a strategy for leveraging Kubernetes in a way that can deliver a more flexible and scalable version of our current system.



You

What is the best shawarma in Amman, Jordan



ChatGPT

The best shawarma in Amman, Jordan, often depends on personal taste preferences, but several places frequently come up in discussions due to their popularity and the quality of their offerings:

1. **Reem Al-Bawadi** - Located on the Second Circle, this is one of the most famous shawarma spots in Amman. It's particularly known for its classic beef shawarma.
2. **Al Dayaa** - Known for offering a slightly more refined dining experience with a variety of shawarma options including chicken and meat. Their branches can be found in multiple locations across Amman.
3. **Shawarma 3a Saj** - Famous for its unique style of serving shawarma on a saj bread rather than the usual pita, which adds a distinctive taste and texture.
4. **Gerard** - A favorite among locals, Gerard offers both chicken and meat shawarmas. They are known for their generous portions and tasty sauces.
5. **Abu Jbara** - While primarily famous for its falafel, Abu Jbara's shawarma is also a hit among locals and tourists alike, known for its rich flavors and good quality meat.

It's always a good idea to check the latest reviews or ask locals for their current favorites to find the top shawarma that meets your taste preferences.





GITHUB COPILOT: CHAT

monalisa

Write unit tests for this function

GitHub Copilot

```
import unittest
import datetime

class TestParseExpenses(unittest.TestCase):
    def test_parse_expenses_with_valid_input(self):
        expenses_string = '2023-01-02 -34.01 USD\n2023-01'
        expected_output = [(datetime.datetime(2023, 1, 2),
                            -34.01, 'USD')]
        self.assertEqual(parse_expenses(expenses_string),
                        expected_output)

    def test_parse_expenses_with_empty_input(self):
        expenses_string = ''
        expected_output = []
        self.assertEqual(parse_expenses(expenses_string),
                        expected_output)

if __name__ == '__main__':
    unittest.main()
```

The code assumes that the `datetime` module is imported. The test cases cover different scenarios such as valid input, empty input, input with comments, invalid date format, and invalid value format.

Ask a question or type '/' for commands ➤

parse\_expenses.py × addresses.rb × sentiments.ts ×

```
1 import datetime
2
3 def parse_expenses (expenses_string):
4     """Parse the list of expenses and return the list of triples (date, amount, currency)
5     Ignore lines starting with #.
6     Parse the date using datetime.
7     Example expenses_string:
8         2023-01-02 -34.01 USD
9         2023-01-03 2.59 DKK
10        2023-01-03 -2.72 EUR
11
12        """
13
14        expenses = []
15
16        for line in expenses_string.splitlines():
17            if line.startswith("#"):
18                continue
19            date, value, currency = line.split(" ")
20            expenses.append((datetime.datetime.strptime (date, "%Y-%m-%d"),
21                             float (value),
22                             currency))
23
24        return expenses
25
26
27
28
29
30
31
32
33
34
expenses_data = '''2023-01-02 -34.01 USD
2023-01-03 2.59 DKK
2023-01-03 -2.72 EUR'''
```

Replay



Generate a conference sign up form for a conference cal...  Public ...

New Generation

Feedback



History



Generate a conference sign up form for a conferenc...



## Sign Up for Xpand

Join us in Amman, Jordan for an unforgettable conference experience.

Name

Email

Company

Job Title

I agree to the terms and conditions

Sign Up

⚡ Speed



Make the heading larger and darker

Add this component to your project ⓘ

By using this code or product you agree to the [pre-release agreement](#).

```
> npx v0 add VYAToKlmrZZ
```

component.jsx

styles.css (read-only)

layout.jsx (read-only)

```
/**
```

```
* v0 by Vercel.  
* @see https://v0.dev/t/VYAToKlmrZZ  
* Documentation: https://v0.dev/docs#integrating-generated-code-into-your-nextjs-app  
*/  
import { Label } from "@/components/ui/label"  
import { Input } from "@/components/ui/input"  
import { Checkbox } from "@/components/ui/checkbox"  
import { Button } from "@/components/ui/button"
```

```
export default function Component() {
```

```
    return (
```

```
        <div className="mx-auto max-w-md space-y-6">  
            <div className="space-y-2 text-center">  
                <h1 className="text-3xl font-bold">Sign Up for Xpand</h1>  
                <p className="text-gray-500 dark:text-gray-400">  
                    Join us in Amman, Jordan for an unforgettable conference experience.  
                </p>  
            </div>
```



A



B



C



FAQ Terms AI Policy Privacy



# Introducing BloombergGPT, Bloomberg's 50-billion parameter large language model, purpose-built from scratch for finance

March 30, 2023

*BloombergGPT outperforms similarly-sized open models on financial NLP tasks by significant margins – without sacrificing performance on general LLM benchmarks*

**NEW YORK** - Bloomberg today released a research paper detailing the development of BloombergGPT™, a new large-scale generative artificial intelligence (AI) model. This large language model (LLM) has been specifically trained on a wide range of financial data to support a diverse set of natural language processing (NLP) tasks within the financial industry.

Recent advances in Artificial Intelligence (AI) based on LLMs have already demonstrated exciting new applications for many domains. However, the complexity and unique terminology of the financial domain warrant a domain-specific model. BloombergGPT represents the first step in the development and application of this new technology for the financial industry. This model will assist Bloomberg in improving

Model RAM Usage 4.64 GB

RAM Usage 4.64 GB  
CPU: 0.00 %

lmstudio-community • Meta Llama 3 Instruct 7B Q4\_K\_M gguf

Eject Model

Chats + New Chat (⌘N)

Export

Llama 7B Q4\_K\_M GGUFGUIF plaintext markdown monospace

Settings Reset to Default Settings

Preset Llama 3

Danger Zone Discard Changes Override Preset

System Prompt

You are a helpful, smart, kind, and efficient AI assistant. You always fulfill the user's requests to the best of your ability.

Ask before overriding 29 tokens

Advanced Configuration >

Tools

Model Inspector

Context Overflow Policy

Behavior for when the generated tokens length exceeds the context window size.

- Stop at limit
- Keep the system prompt and the first user message, truncate middle
- Maintain a rolling window and truncate past messages (default)

Localization

Conversation Notes

USER Write some python code that will write a REPL using the cmd library

Here is an example of Python code that uses the cmd library to create a simple REPL (Read-Eval-Print Loop):

```
import cmd

class MyREPL(cmd.Cmd):
    def __init__(self):
        super().__init__()
        self.prompt = 'my repl>'

    def do_echo(self, arg):
        """Echoes back whatever you type"""
        print(arg)

    def do_quit(self, arg):
        """Quits the REPL"""
        return True

    if __name__ == '__main__':
        my_repl = MyREPL()
        my_repl.cmdloop()
```

Copy Code

AI This code defines a class MyREPL that inherits from cmd.Cmd. The do\_echo method is called when the user types echo <arg>, and it simply prints back whatever was typed. The do\_quit method is called when the user types quit, and it returns True to indicate that the REPL should exit.

In the main code block, we create an instance of MyREPL and call its cmdloop() method to start the REPL loop. This will prompt the user for input, execute the Regenerate or Continue button, and then print the result or error message back to the user.

Regenerate Continue

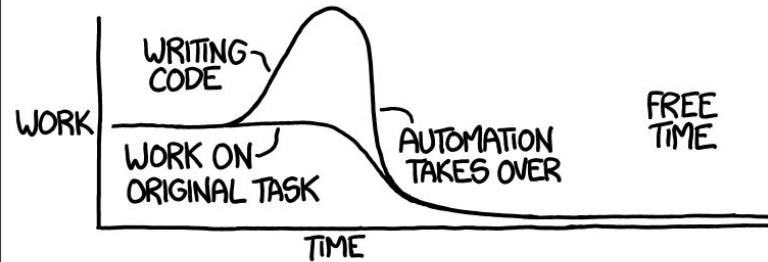
USER Enter a user message ... 0 tokens

time to first token: 2.89s gen t: 38.85s speed: 9.88 tok/s stop reason: eosFound gpu layers: 10 cpu threads: 4 mlock: true token count: 499/2048

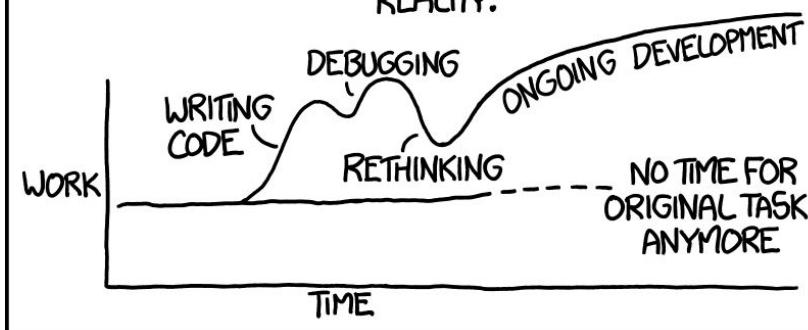
Model Downloads 0 downloading + 3 completed

"I SPEND A LOT OF TIME ON THIS TASK.  
I SHOULD WRITE A PROGRAM AUTOMATING IT!"

THEORY:



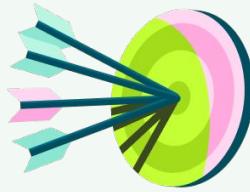
REALITY:





## **Embrace uniformity as much as possible**

Building on a stack which everyone contributes to and  
understands can lead to faster iteration time and  
shared benefits



## **Bridge between infrastructure and apps**

Give a well defined and easy to use interface to engineers so the complexity and burden of infrastructure isn't spread across the organization



## Leverage delightful tooling

Invest in best-in-class tools to encode and automate your organizational processes

# شكراً جزيلاً

سهيل باتل | @suhailpatel | <https://suhailpatel.com>

