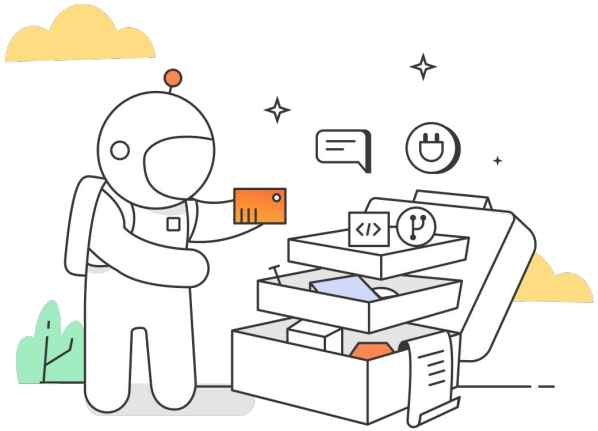
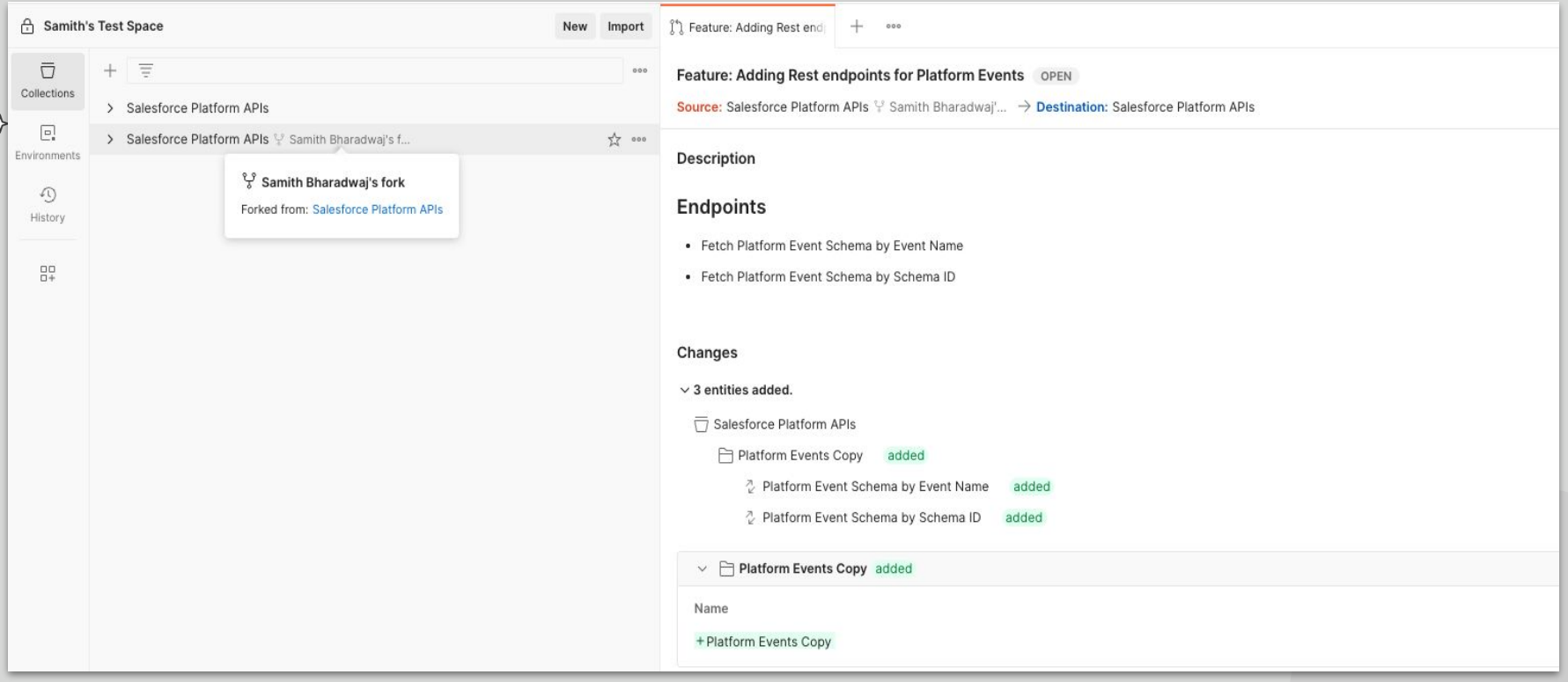
Supercharging Asynchronous workflows with Temporal.io



Samith Bharadwaj | @samithbharadwaj

Software Engineer, Postman



Understanding Pull Requests in Postman

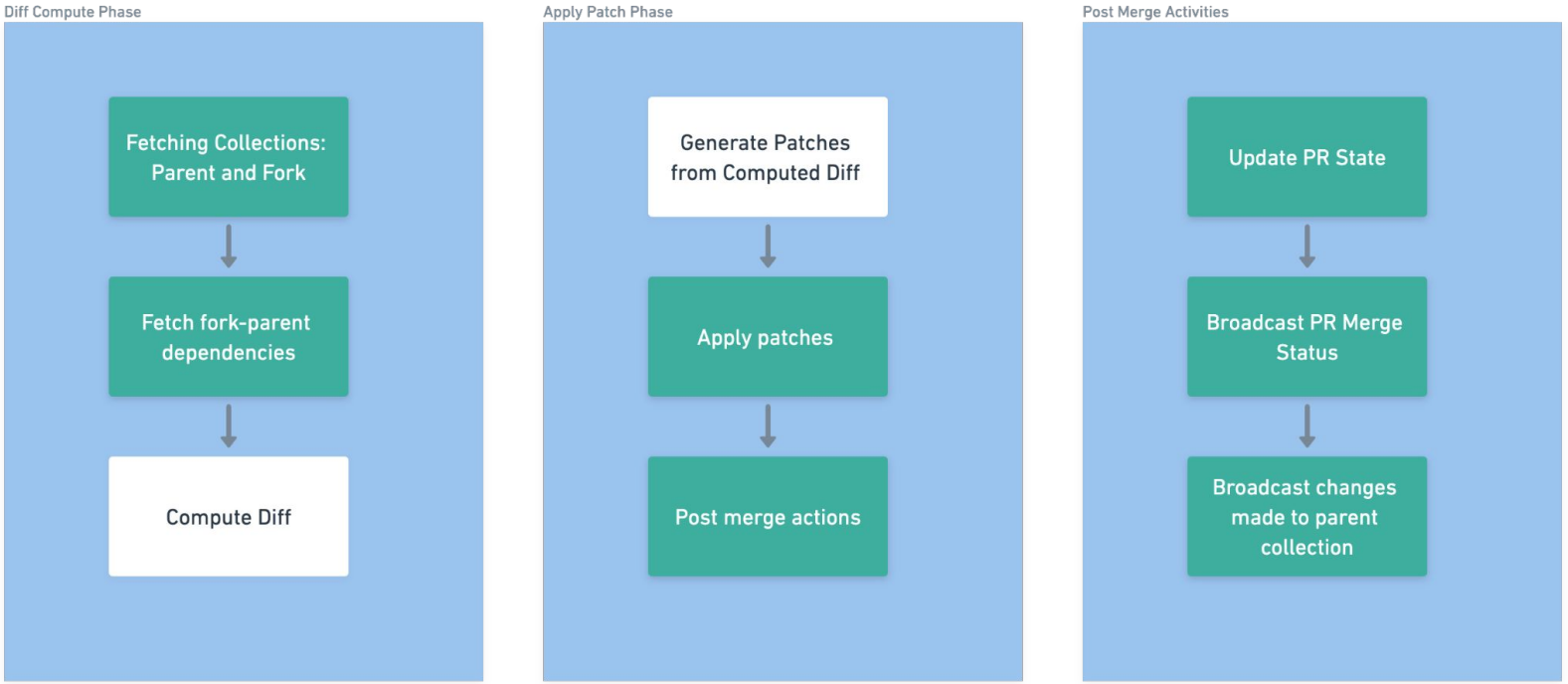
Unpacking the Problem

PR Merge Experience: Before Temporal.io

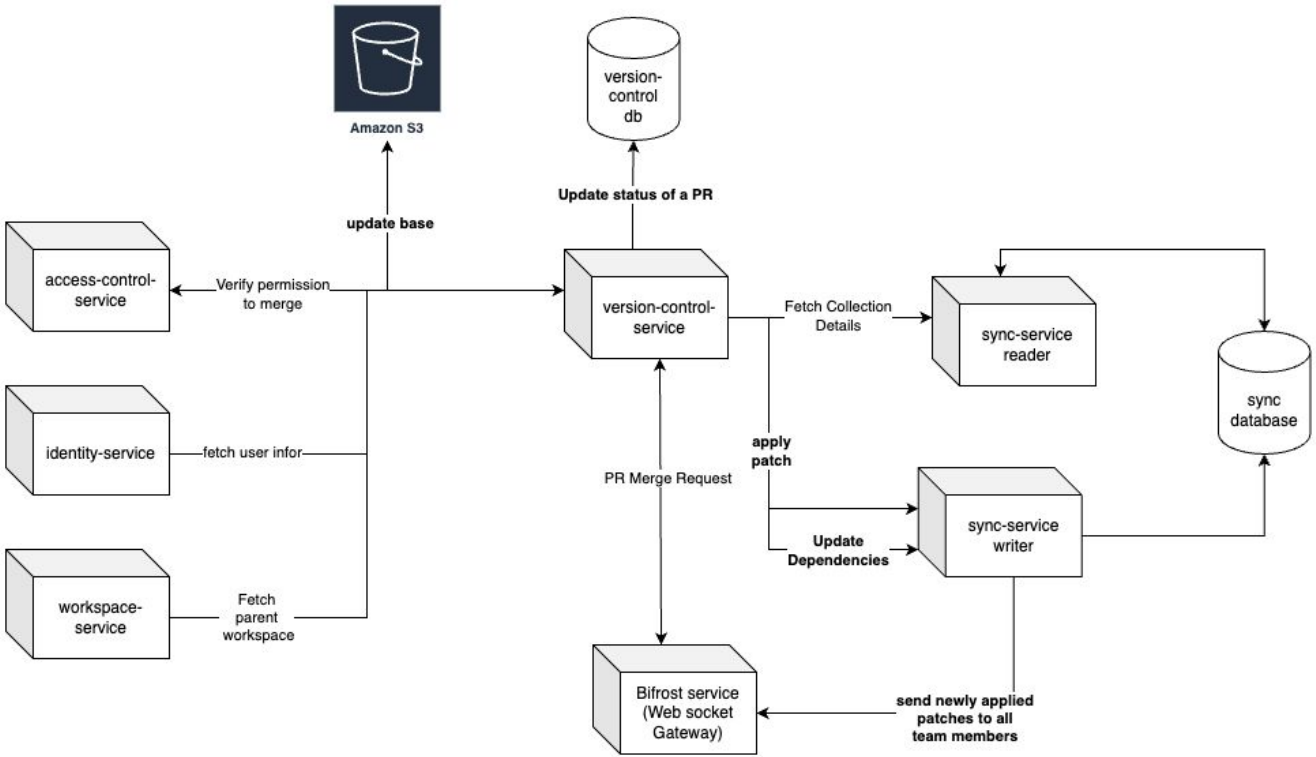
Merge Inefficiencies and problems

- **Product experience is time and UI blocking**
  Merging large PRs can result in user frustration due to extended wait times before being able to use the product
- **Merge a PR is unreliable**
  With merging being a complicated distributed transaction, it often lead to unpredictable failures
- **Downstream service errors result in the entire merge process returning a failure**
  Lacked necessary mechanisms to recover from dependent service failures
- **Non deterministic end states reached due to low predictability**
  False positives and negative merge completion statuses confused the user

PR Merge Internals

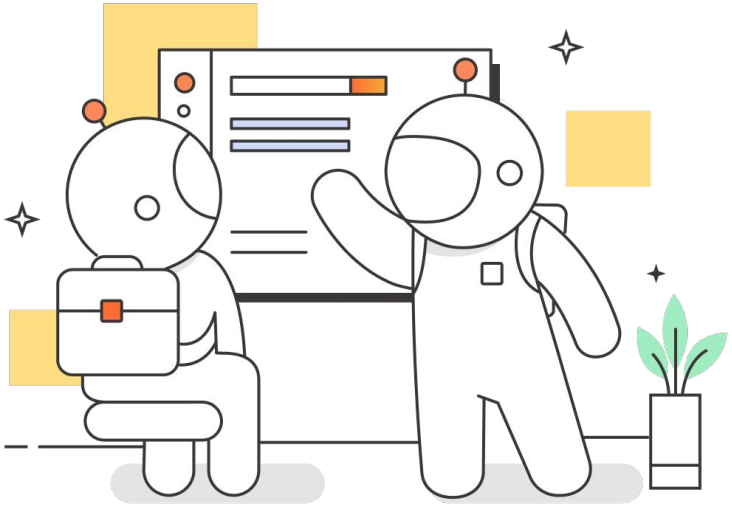


PR Merge Internals

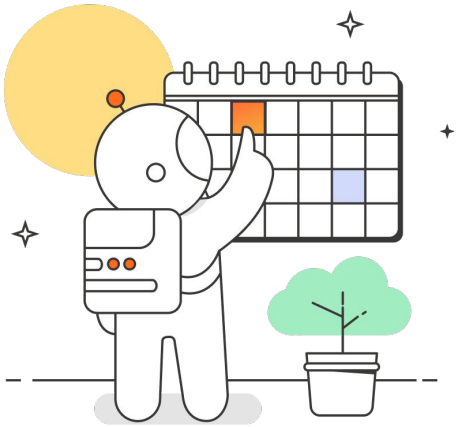


Crafting an effective solution

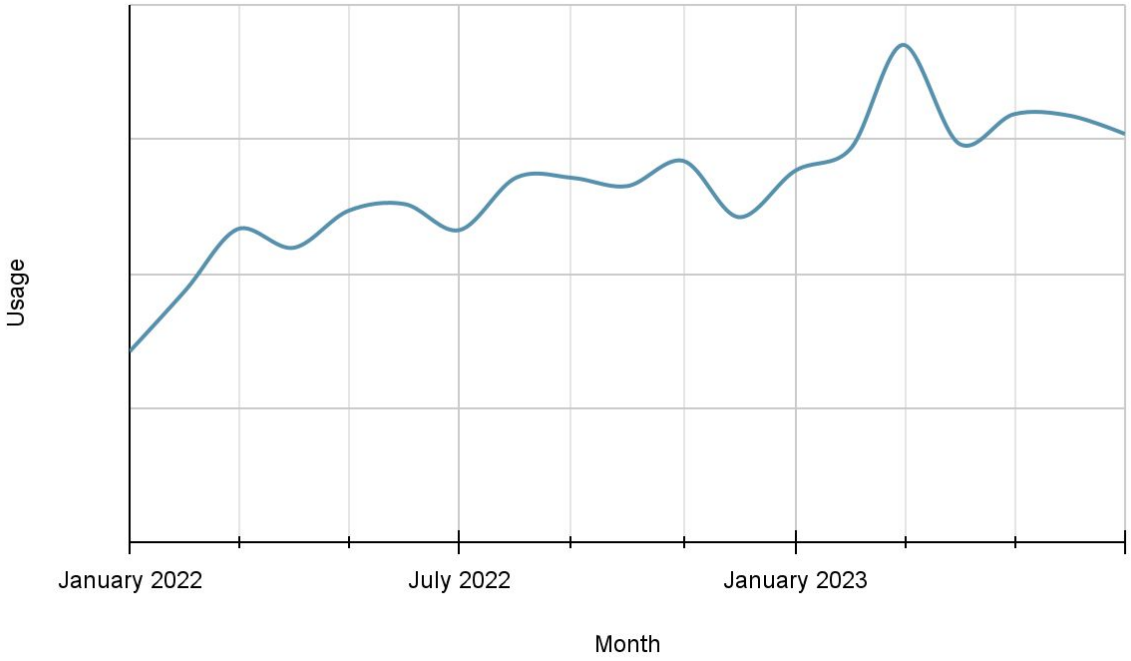
- **Making the PR merging experience asynchronous**
  With Temporal, we can establish a queue and worker setup to make the process async.
- **Reliable distributed transactions**
  Retries and Timeouts at an activity level provided by temporal help with increasing reliability across the entire process
- **Observability and Event Sourcing**
  With temporal, observability is provided out of the box along with effective state tracking for workflows
- **Code/Service reusability**
  Business logic from existing services should be reusable in the async workflows.



Merge experience after using Temporal



Post Temporal Integration: Pull Request Usage



- **Increased adoption of pull requests**
  PR adoption rate increased by **30.71%** after the introduction of the new merging experience

- **Decrease in merging failures**
  With Temporal, retires and rollbacks of transactions have helped bring down the error rate by **43%**

Future of Temporal @ Postman

- **Internal SDK to use temporal across teams and services**
  With increased adoption of temporal within Postman, the sdk helps with easy onboarding, standardising security standards, data exchange formats, etc.

- **Increased adoption for various use cases**
  Higher throughput and critical workflows are now using temporal within Postman. Some of them are:
  - Deleting, Replicating a workspace (~200k workflows and ~1M activities p.m)
  - Publishing, Deleting an API(~50k workflows and ~1M activities p.m)

Thank you