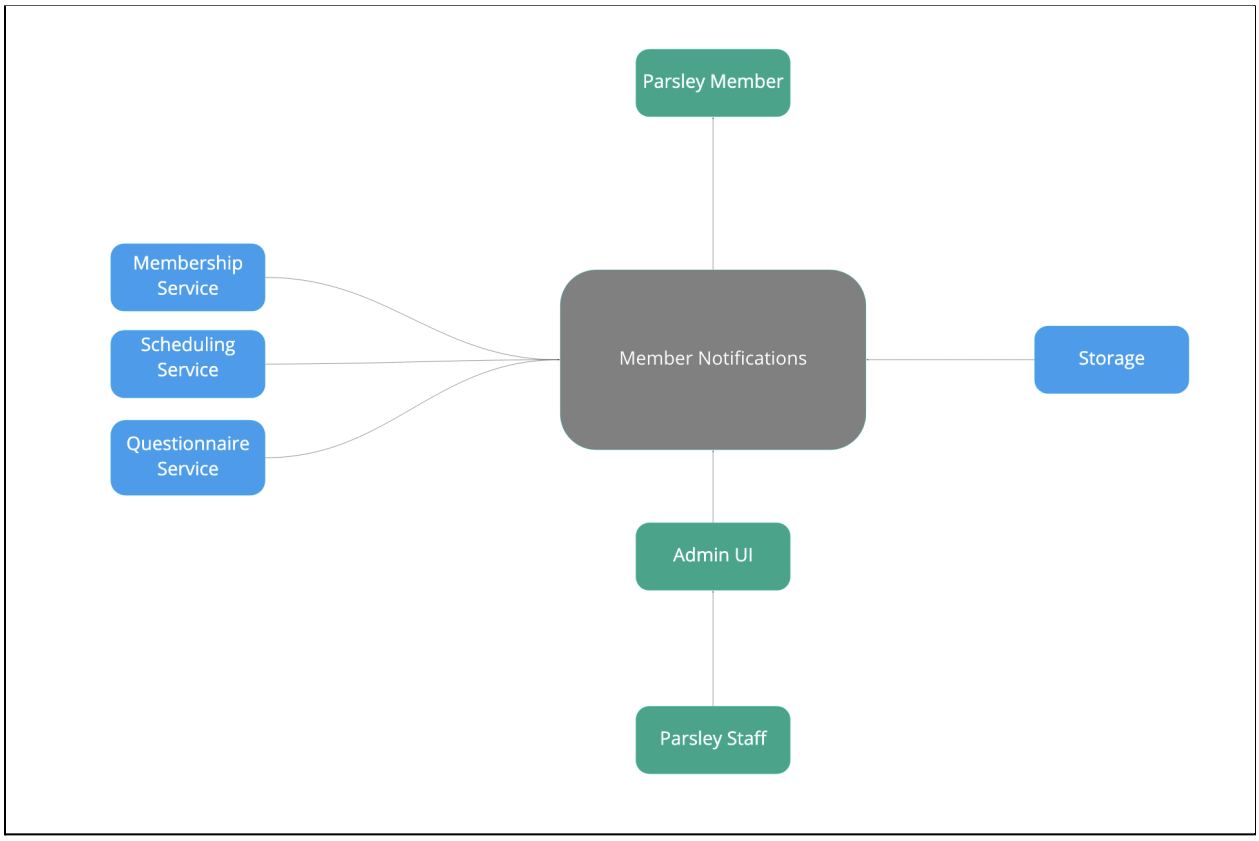
Introduction

ParsleyHealth needs to send notifications to its patients at various points in their membership. Types of notifications include account creation, upcoming appointments, invoices, and reminder emails. The purpose of this case study is to document and outline the design considerations needed to build a fully functional messaging system.

The ParsleyHealth platform consists of multiple distributed services that are responsible for key areas on our infrastructure. These services include, but are not limited to, Billing, Scheduling, Authentication, and Diagnostics. We are curious to see how you would fit a notification service with the following diagram.

High Level Overview

The following diagram represents a high level overview of a member notification service. Outside of this service, there are three other known services that handle memberships, scheduling appointments, and patient questionnaires. This service can be composed of any combination of software and GCP infrastructure.



Requirements

This notification service must satisfy the following requirements:

- It can reliably send notifications when events occur in other services, such as a membership being cancelled, an appointment being scheduled, or a questionnaire being submitted.
- It can support configurable rules that will send a notification when a time specific condition is met. For instance, it sends a notification X days after a membership ends, or it sends a notification Y days before an appointment begins.
- It can support parsley staff manually sending a notification.
- It will initially support only email notifications, but must be flexible enough to support future notification types, such as SMS.
- It will use an unspecified third party service to send emails. *We can assume this service can send webhooks regarding the status of the notification ie. message received, message opened, messages bounced etc*.
- It can display the history of a notification in our admin UI, including states such as *sent*, *received*, and *read*.

As part of this case study, you are required to document all aspects of your design. Please include descriptive details such as schema definitions, available API endpoints and tooling.

Document any considerations you have made and we will go over them as part of our discussion.