**Notifications Scheduler to handle scheduled notification**

**Context and Problem Statement**

The "Hey Blue" system should allow sending notifications to registered users after they have received the reward points, special offers from Business store, addition of a new vendor for points redemption.

**Requirements**

* Support for push message, email, and/or SMS notifications to registered users, some immediate and some deferred.

**Business Assumptions**

There was no explicit requirement on pushing notification to users. We assume the messages sent to registered users are reward points, special offers from Business store, addition of a new vendor for points redemption.

* Notification after addition of a reward point.
* Notification after users has redeemed a reward point.
* Notification to the users when a new business store has been added
* Notification to the users when a special offer has been provided at the business store

**Decision drivers**

* The Subscription Notification service consumes Connect service status, rewards service, redemption service and sends notifications to registered users. However the responsibility control of the sending time belongs to Notification Scheduler service, which is a final stop before a message is dispatched to the registered user.

**Considered options**

* Subscription Notification service would cache deferred messages to Notification Scheduler service and handle the scheduling.
* Subscription Notification service would mark the messages with "time-to-send" and have Notification Scheduler service schedule and send the customer messages.

**Decision**

Have Subscription Notification service mark the messages with "time-to-send" and have Notification Scheduler service schedule and send the messages.

**Reasons:**

* Notification Scheduler service does not have to process the content of the message, unlike the Subscription Notification service, it only cares about time and addressee, having it handle the scheduling improves modularity and represents better separation of concerns.
* Removing BL for message scheduling and deferred sending from Subscription Notification Service into Notifications Scheduler improves performance and reliability, as it is now more available to handle meals status messages.
* In case Subscription Notification Service is down, its messages are still cached by Notifications Scheduler and will be sent, which is a better reliability.

**Architectural style**

**Microservices**.

**Consequences**

* Adding scheduled messages store to Notifications Scheduler.
* Adding "time-to-send" field to messages coming from Subscription Notification service.