Distributed Notification System

TEAM AAG

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PROJECT GOALS

- ➢To develop a notification system for a student information system.
- ➢To allow users to select classes and receive reminders 15 minutes prior to start time.

MOTIVATION FOR WORK

- ➢SIS is unable to synchronize with calendar applications.
- ➢Students/Faculty must manually enter class information into calendar applications.

CURRENTLY EXISTING WORK

- ➢Currently there exist many calendaring systems.
  - ➢Microsoft Outlook
  - ➢Google Calendar
  - ➢Due for IOS
- ➢None of these systems integrate with student class schedule in SIS.

LESSONS LEARNED

- ➢Subscription and polling are handled outside of pubsub middleware
- ➢JMS implements a non-polling protocol.
- ➢Replication causes temporary inconsistency.

ARCHITECTURE AND DESIGN IMPLEMENTATION

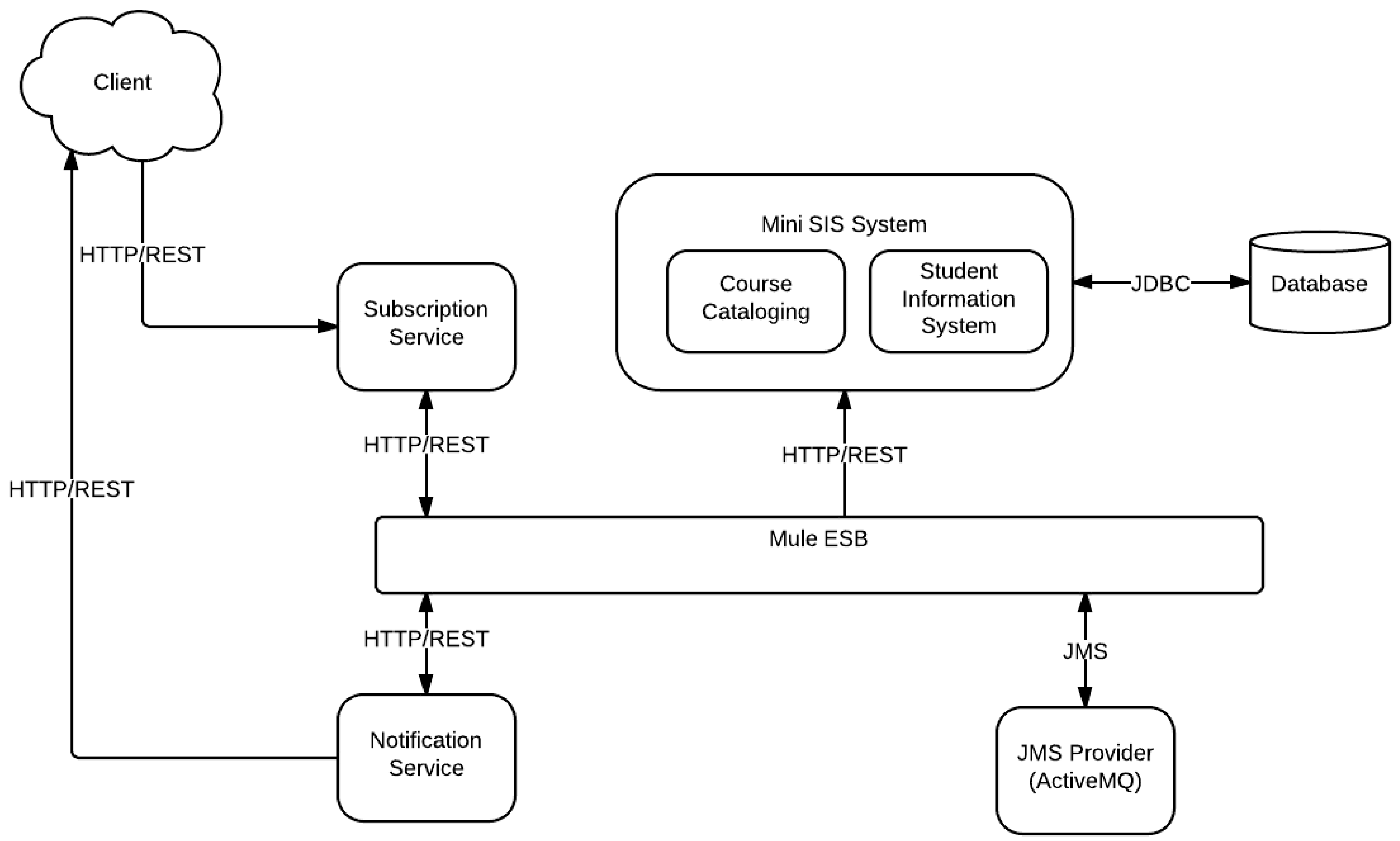

Figure 1. High-Level Architecture

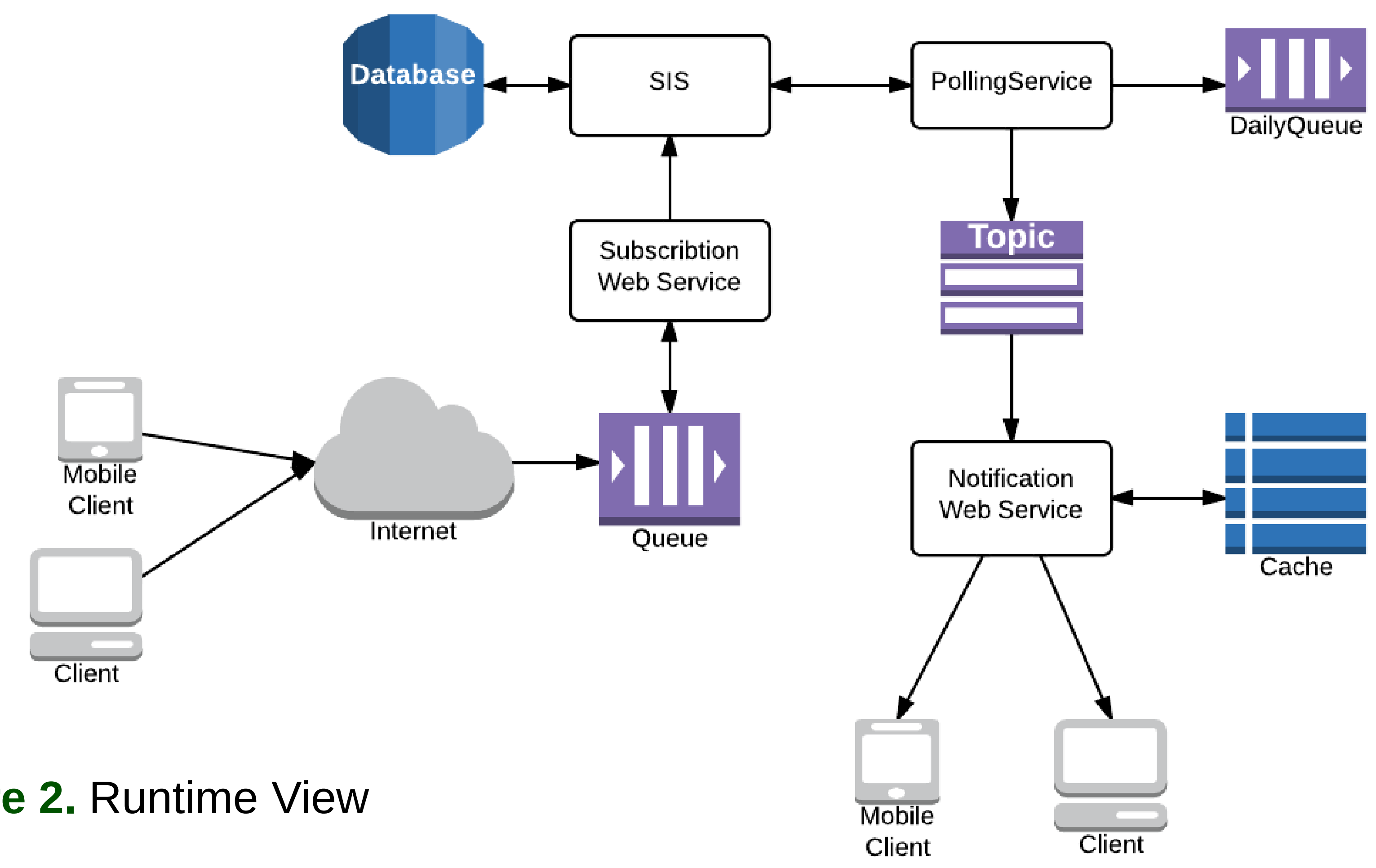

Figure 2. Runtime View

CURRENT STATUS

- ➢Cloud-to-cloud integration.
- ➢End-to-end subscription and notification cycle implemented.
- ➢Reliable communication using message queue.
- ➢Fault handling using retries and dead letter queue.
- ➢Service-Oriented Architecture pattern.

FUTURE WORK

- ➢More functionality (unsubscribe).
- ➢Implementation efficient caching strategy.
- ➢Real-time modification of daily schedule.
- ➢Better system clock handling.
- ➢SMS notification.

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