# Purpose

Real-time data analytics to detect abnormal heart rate and send notification to registered contact.

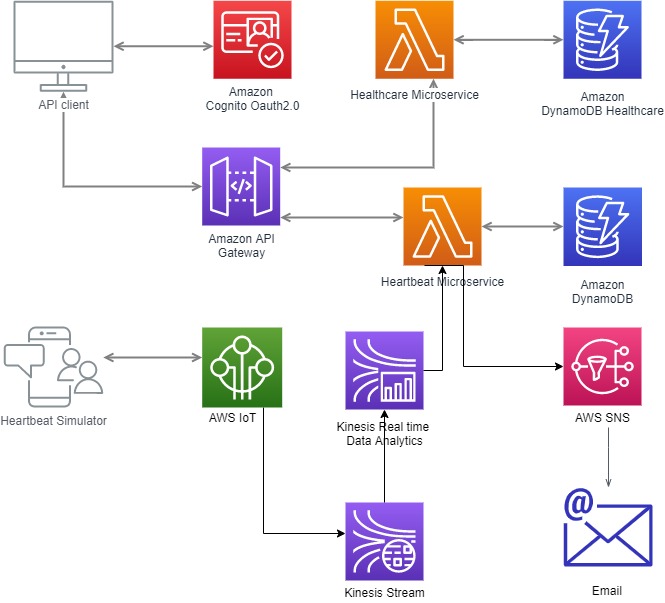
# System Description

Healthcare API gateway allow to register patient, provider and heartrate notification configuration data.

Heartbeat simulator sends heartbeat data to AWS IoT using mqtts which further ingest by real-time analytics engine and Heartbeat microservice to send notification to registered contact.

Healthcare professional can view patient’s last 10 minutes heartrate data using API gateway.

# High level architecture diagram



# Data Model and API Gateway

Healthcare professional register patient heartrate notification configuration info into system to send out auto notification alert.

API URL <http://healthcare/config/heartrate>

METHOD: HTTP POST

|  |  |
| --- | --- |
| Heartrate notification configuration | |
| deviceId | string |
| patientId | string |
| firstname | string |
| lastname | string |
| email | string |
| mobile | string |

# Patient registration

API URL <http://healthcare/patients>

METHOD: HTTP POST

|  |  |
| --- | --- |
| Patient info | |
| id | string |
| *providerId* | *String* |
| dateOfBirth | date |
| firstname | string |
| lastname | string |
| email | string |
| phoneNumber | string |
| address | string |
| admitdate | date |
| dischargedate | date |

# Last 10 minutes patients heartrate

API URL [http://healthcare/patients/{patientId}/heartrate](http://healthcare/patients/%7bpatientId%7d/heartrate)

METHOD: HTTP GET

|  |  |
| --- | --- |
| Heartrate response :-deviceId and array of heartrate | |
| timestamp | timestamp |
| *heartrate* | *int* |

# Doctor API

API URL <http://healthcare/doctors>

METHOD: HTTP POST

|  |  |
| --- | --- |
| Register Doctor | |
| *id* | *String* |
| firstname | string |
| lastname | string |
| email | string |
| mobile | string |
| address | string |
| specialization | string |
| active | boolean |

# Real-time heartrate analytics

Kinesis stream receive heartrate data from AWS IoT core and Kinesis data stream used to execute heartrate rules on **SOURCE\_SQL\_STREAM\_001 to generate notification alert.**

**For any abnormal heartrate heartrate microservice lambda retrieve notification info from database to send out alert notification.**