# Estimote Slack Integration

This document describes the Help Desk application that combines an Android application along with Estimote beacons to report hardware problems in the workflow. The problems are directly reported into the Slack Channel, so that they can be immediately looked into.

## Example Scenario

In the example scenario, we have a workplace where there are several hardware assets that are commonly used by many employees. For e.g. there are multiple printers setup in the organization and often one finds that when one fires a printout, there could be multiple problems. The problems could range from :

1. Out of Paper
2. Paper Jam
3. Some other problem

Often this is reported back to the Systems Support team by going back to the desk, then reporting it in some application and so on. This creates inefficiencies.

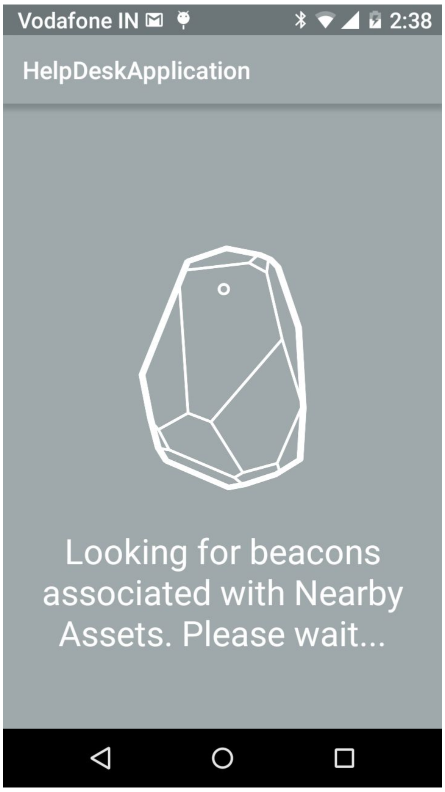
Enter both Estimote Beacons and Slack. How it all comes together is explained in the next section.

## Application Flow

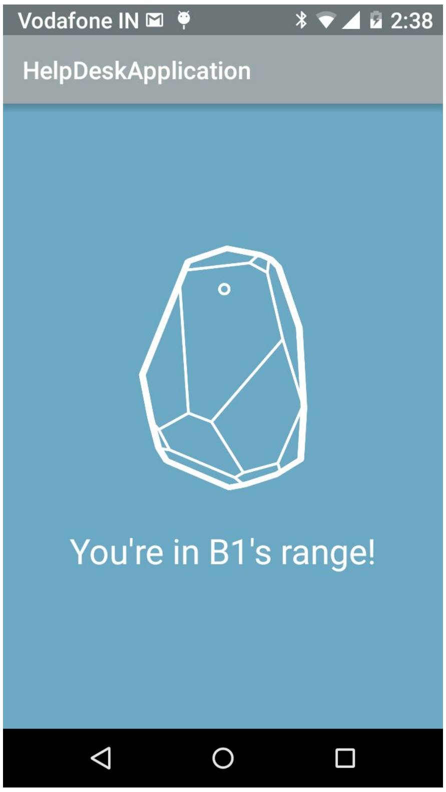
Let us assume that we have associated one of the Estimote Beacons (Beacon Name = B1) with a HP LaserJet printer in the office. The employee fires a printout to that printer and then goes there to retrieve the printout. On reaching there, the employee finds that the print did not happen successfully because the printer was out of paper.

The entire flow now happens as shown below:

The employee launches the Help Desk Android application. The first screen is shown below:

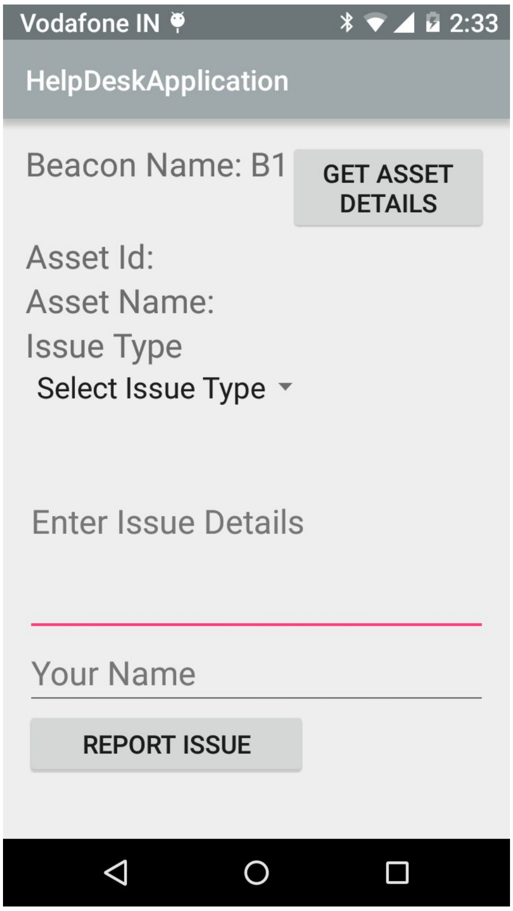


Looking for beacons associated with Nearby Assets. Please wait...



You're in B1's range!

The application tries to locate the nearest beacon and in this case it will be the Beacon associated with the printer. When it is in the range of the beacon, it shows the message that it is in Beacon’s range and then it shows a screen to report the issue as shown below:



Vodafone IN 2:33

HelpDeskApplication

Beacon Name: B1

Asset Id:

Asset Name:

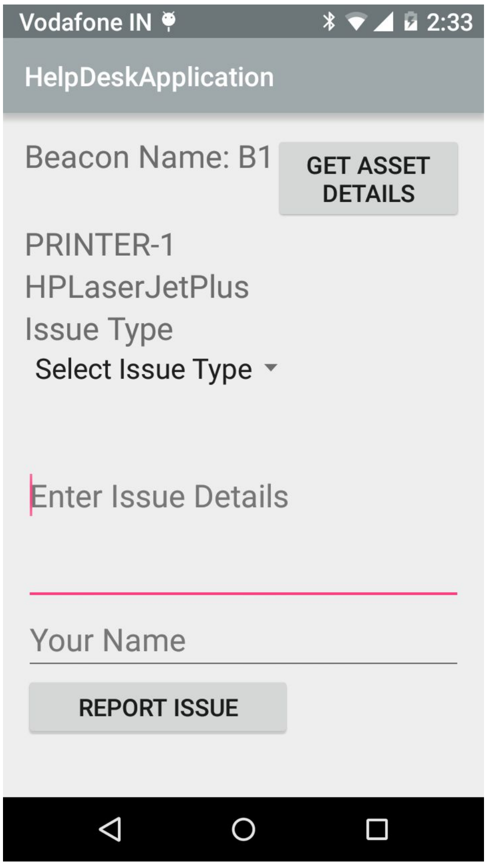
Issue Type

Select Issue Type

Enter Issue Details

Your Name

The first step is to retrieve the Beacon details i.e. which Asset information is associated with that Beacon. This is a API call to the Server (/assets) with that Beacon Id. On successful retrieval it shows the asset details (Printer associated with the Beacon) as shown below:



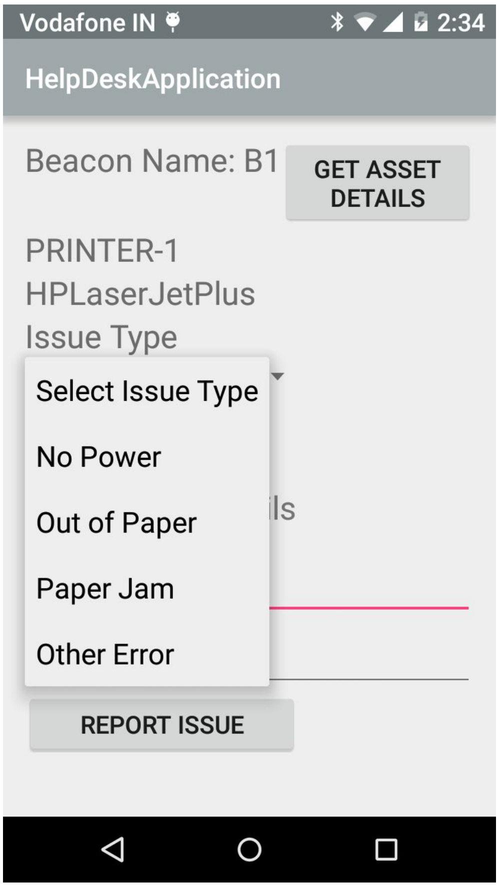
Beacon Name: B1

PRINTER-1

HPLaserJetPlus

Issue Type

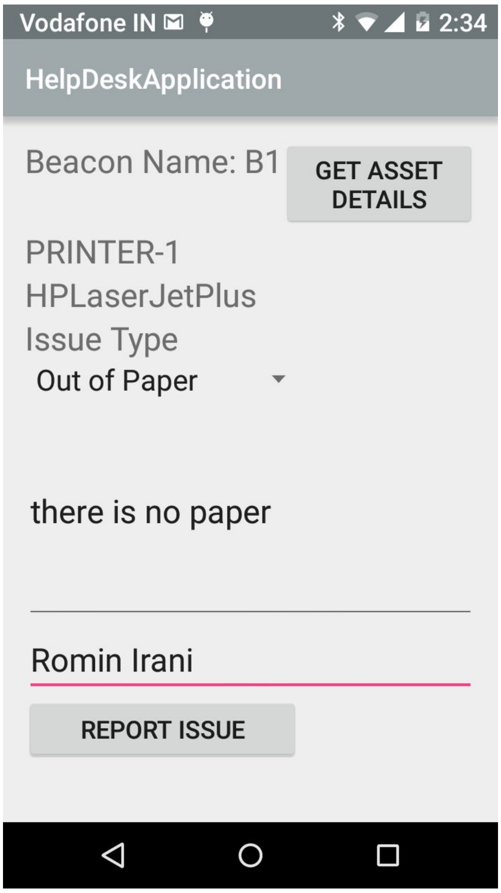
Now, the user has to just provide the issue type from the drop down, enter some details and his/her name as given below:



Beacon Name: B1

PRINTER-1
HPLaserJetPlus
Issue Type

Select Issue Type
No Power
Out of Paper
Paper Jam
Other Error



Beacon Name: B1

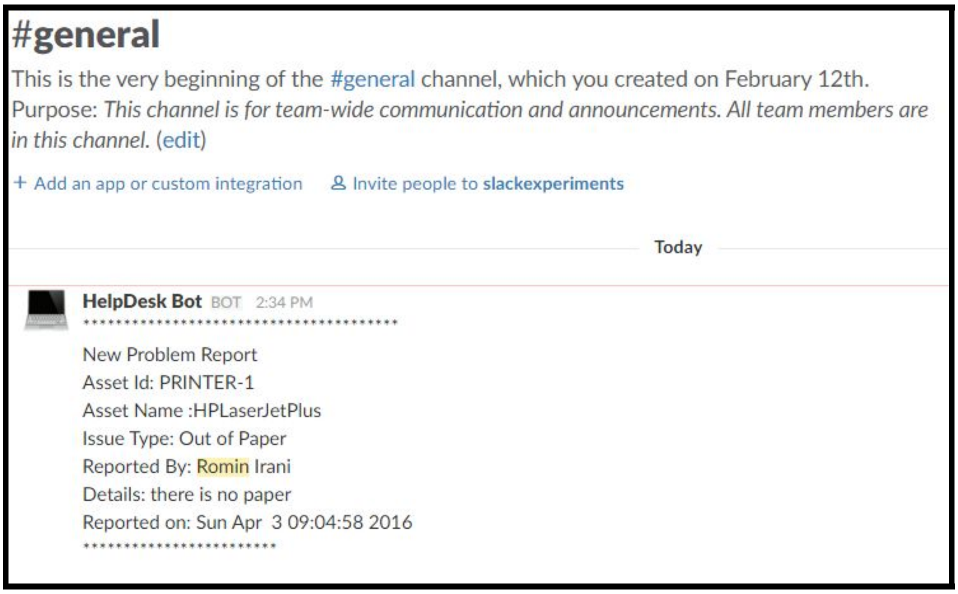
PRINTER-1
HPLaserJetPlus
Issue Type
Out of Paper

there is no paper

Romin Irani

The final step is to click the **Report Issue** button.

On clicking the Report Issue button, the record is posted to the /raiseIssue API Endpoint that stores the data and then does a POST to the Incoming Webhook URL for the Slack Channel. The Issue reported directly appears in the Slack Channel as a message as shown below:


+ Add an app or custom integration
Invite people to slackexperiments
Today

#general

This is the very beginning of the #general channel, which you created on February 12th. Purpose: *This channel is for team-wide communication and announcements. All team members are in this channel.* (edit)

HelpDesk Bot BOT 2:34 PM

```
****************************************
New Problem Report
Asset Id: PRINTER-1
Asset Name :HPLaserJetPlus
Issue Type: Out of Paper
Reported By: Romin Irani
Details: there is no paper
Reported on: Sun Apr  3 09:04:58 2016
*************************
```

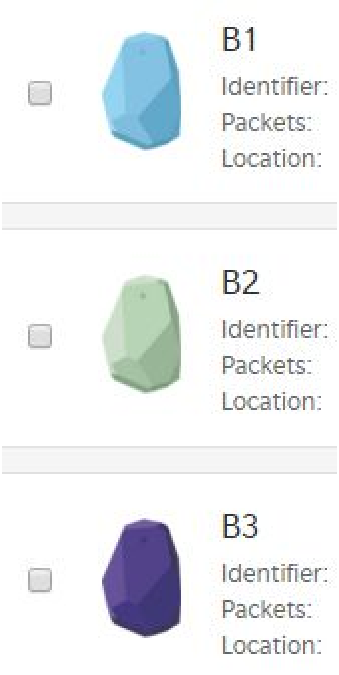
# Source Code

The source code for both Slack Application (App Engine application) and Android application is present at https://github.com/rominirani/Estimote-Slack

# Beacon Configuration

The Server side application is a Google App Engine application written in the Go Programming language. We need to configure the Beacons in this application and associate them with the additional asset information i.e. Asset Id and Asset Name. For e.g. it could be the Printer Asset Id and Printer Name.

The first step to do is to visit the Estimote Cloud and note down the Beacons that you are interested in using for the Assets. In my case, the following Beacons are present:



□ B1

Identifier:

Packets:

Location:

□ B2

Identifier:

Packets:

Location:

□ B3

Identifier:

Packets:

Location:

The Beacon Names are B1, B2 and B3 and the respective Beacon Ids are noted down.

The Server application exposes a REST API via which you can configure the Beacons. For each of the Beacons, we will configure the following additional information:

- Beacon Id (Estimote Cloud Beacon Id)
- Beacon Name (Estimote Cloud Beacon Name)
- Asset Id (Organization specific Asset Id)
- Asset Name (For e.g. Printer Name - HPLaserJet Plus)
- Asset Type (Asset)
- Asset Data (Any additional data about the Asset)
- Status (ACTIVE or INACTIVE)

An endpoint is exposed on the Server side application that allows for configuring the Beacons. The endpoint URI is **/addAsset** and it takes the above Request Parameters.

For e.g. a JSON API (**/assets**) is exposed that shows the list of assets configured.

```
[
        {
                BeaconId: "B9407F30...",
                BeaconName: "B1",
                AssetId: "PRINTER-1",
                AssetName: "HPLaserJetPlus",
                AppType: "Asset",
                AppData: "",
                Status: "ACTIVE"
        },
        {
                BeaconId: "B9407F30...",
                BeaconName: "B2",
                AssetId: "PRINTER-2",
                AssetName: "HPLaserJetPlus",
                AppType: "Asset",
                AppData: "",
                Status: "ACTIVE"
        },
        {
                BeaconId: "B9407F30....",
                BeaconName: "B3",
                AssetId: "PRINTER-3",
                AssetName: "HPLaserJetPlus",
                AppType: "Asset",
                AppData: "",
                Status: "ACTIVE"
        }
]
```

# Slack Configuration

The Slack Configuration is straightforward. In your Slack Team Configuration, go ahead and add a Custom Integration just for your team. The Custom Integration is the Incoming webhook Integration.

On successful creation, you will have an Incoming webhook URL that you will need to use in your Server code. The application will directly post to that Webhook URL and as a result of which the message will appear in the challenge.

# Moving Forward

This is just one of the applications in a potential Employee Engagement application that handles not just hardware issues but also the following areas:

1) Estimote Beacons placed in the Cafeteria that can help employees report any issues with food or general feedback.
2) Estimote Beacons placed strategically in the organization and they are associated with Birthday information of employees on that particular day. Any user passing by can be notified about “Today’s Birthdays” and the user can then wish them.