

Skyhook/TruePosition Location API

Location is our Focus

[Skyhook Wireless](#) pioneered Wi-Fi location in 2003. Since that time, we have been building and optimizing a massive database of Wi-Fi access points and other positioning anchors such as geolocated Cell IDs and IP addresses. [TruePosition](#), a long-standing, industry-leading provider of network-based wireless location products and services, acquired Skyhook in 2014 and has now merged its geolocation and mobile advertising data product lines under the Skyhook brand. We are pleased participate in the TMforum Open Hack as an IBM BlueMix partner.

Locating the Internet of Things

Geolocation and IoT go hand-in-hand. Knowing the location of your devices helps to accomplish many important objectives including optimizing routes or traffic flow, reducing theft, streamlining asset management, and enhancing safety.

The TrueFix[®] location platform enables you to accomplish these objectives via a simple Location API that can location-enable any device. Location capabilities include Wi-Fi, GPS, and Cell ID if the device in question supports the respective capabilities. TrueFix can locate any mobile phone, IoT device, or sensor with Wi-Fi capabilities, or the ability to pair with another device that has Wi-Fi capabilities. The Wi-Fi location method is advantageous for IoT devices as Wi-Fi modules are typically lower in cost than GPS modules, require less battery resources from the device, and can locate items in GPS-denied environments such as urban canyons or indoors.

Hackathon Instructions

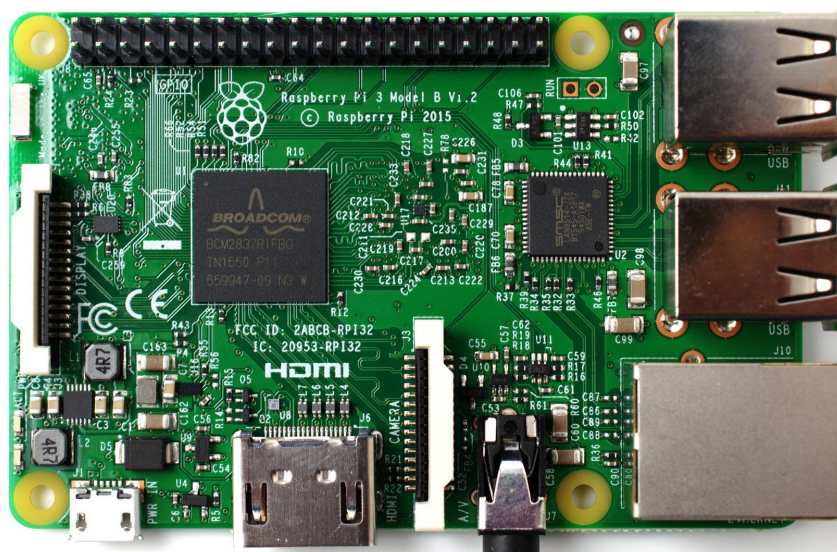
TruePosition is providing a limited number of Raspberry PI devices as a courtesy to teams interested in using our Skyhook/TruePosition Location API. However, any teams interested in adding location to their Hackathon solutions can utilize our API to locate other devices as well.

Location Process

- The device collects information from all of the Wi-Fi Access Points (APs), cellular, and GPS sources within range
 - Wi-Fi information collected includes: SSID, MAC Address and Signal Strength
 - Communication with the Wi-Fi APs is not required
 - Devices in urban areas typically receive information from greater than 40 Wi-Fi APs
- The requesting cloud application (such as IBM BlueMix), using Skyhook/TruePosition's Location API, sends XMV over HTTPs with the collected information to the TrueFix cloud servers.
- TrueFix calculates the location of the device based on the scan information compared against the information in the Skyhook database.
- TrueFix returns the device's location back to the requesting cloud application

Other Resources

- [Skyhook-TruePosition Location API](#)
- Open Hack Nice 2016 Raspberry PI IoT platform
 - Raspberry PI 3 device



- Install Node Red widgets available on NPM (should be completed already so skip ahead)
 - Add "deb <http://mirror.ox.ac.uk/sites/archive.raspbian.org/archive/raspbian>jessie main contrib non-free rpi" and "deb <http://raspbian.42.fr> jessie main contrib non-free rpi" to /etc/apt/sources.list
 - sudo apt-get update
 - sudo apt-get install npm
 - node-red-start
 - cd ~/.node-red
 - npm install node-red-contrib-wifiscan (widget that performs Wi-Fi scan on Raspberry PI)
 - npm install node-red-contrib-skyhook (widget that sends location request including W-Fi scan to Skyhook Location API)
 - node-red-stop
 - node-red-start
- If your Pi comes with NPM installed - you can skip step above and just run "sudo apt-get update nmp"
- Make sure your Pi and your node-red browser are on Nice Premium SSID network!!! (Nice Event SSID is not good for rPI):
 - SSID : Nice Premium
 - Password : Premium!2016
- Example of Node-Red application to be deployed on Pi:

- The Raspberry PI device will be located (latitude, longitude and uncertainty radius) using the Wi-Fi method only - unless the Hack teams add a cellular modem or GPS unit to their Raspberry PI.
- Open Hack Nice 2016 key and URL:
 - Location API Key - 905LNDttxxTFER1Zuvj3v82lleE5w9FnbG02jLJlwtxxRLajE1wX43vW4b0sZdRL
 - Location API URL - <https://tfdemo-lg.trueposition.com:8443/wps2/location>