SKYHOOK°

Precision Location Integration Overview

Skyhook's precise and accurate location service is used with a **wide range of electronic mobile devices from smartphones and tablets to wearables** (ex. smartwatches, fitness trackers, child trackers) and the "things" in the "Internet of Things". Each device has a distinct technological footprint in terms of memory, storage, battery life, network capability, bandwidth, etc, and Skyhook has four integration options to enable the use of precise location in any mobile device.

Feature	SDK	Lite Client	Embedded Client	API XML (SERVER)
Size	500KB – 1.2MB	300-400KB	25KB Flash 2KB RAM	N/A
OS	Android, Windows, Linux Variants, RasberryPi	Can be ported to any OS	Can be ported to any OS or firmware	All OSs
Description	A full location solution on the leading edge of location technology. Utilizes all of the technological enhancements that Skyhook has developed: location smoothing, fast time- to-fix, MAC address collapsing, power optimization, stationary detection, off-line location	An open-source code base to provide the best location solutions you expect from Skyhook in an open- source environment.	The most compact location technology, leveraging Skyhook's extensive experience in location services. Binary protocol for light-weight data transmission, location response routing and fleet probing available. Designed for wearable devices and the Internet of Things market.	A great location solution for proprietary OSs, proprietary protocols, and server-to-server communication.
Integration*	The developer must include the SDK libraries. All the adapter detection and signal scans are performed automatically.	Integration work depends on OS. The code is open source and will perform the adapter detection and signal scans, however, it will need to port over to the OS being used.	The developer must integrate their signal scans with our client source code (written in C), as well as the network transmission code and compile. Data Pack-aging/protocol, encoding/decoding and encryption/decryption code provided.	The developer must perform signal scans/data collection on-device, send through their own protocol and package them in an XML request send to Skyhook's servers.
Use case	App level programming, Android firmware*, and native location replacement*	OS level programming and open source ecosystems	OS/firmware level programming and below; IoT devices, wearables	OS level programming and higher, server to server communication, and proprietary OSs and protocols.
Tiling	✓	✗	✗	✗
Server-side Positioning	✓	✓	✓	✓
Client-side Positioning	✓	✗	✗	✗
Protocol	N/A	N/A	Binary	XML

Feature	SDK	Lite Client	Embedded Client	API XML (SERVER)
Clustering	✔	✔	✔	✔
Quarantine	✔	✔	✔	✔
Offline Location	✔	✘	✘	✘
Tokening	✔	✘	✘	✘
Historically Observed Location**	✔	✔	✔	✔
Hybrid GPS / Wi-Fi / Cell	✔	✔	✔	✔
Client Power Optimizations	✔	✘	✘	✘
Certified Location	✔	✘	✘	✘
IP Location	✔	✘	✘	Available separately
Global Location	✔	✔	✔	✔
Location Smoothing	✔	✘	✘	✘
MAC address collapsing	✔	Server Side	Server Side	Server Side

* Integration requirements:
SDK - The SDK only requires being included into your project, turning on a few settings, and calling the correct code
API – The API requires the implementer to write the code to perform the scans and then simply send the data to our servers.
LC - The Lite Client will perform the scans but may need to be ported over to the correct OS.
Embedded Client – The Embedded Client requires the implementer to write the code to perform the scans and then simply send the data to our servers.

** When a device requests location from Skyhook, it packages the nearby access points and cell towers (and their respective signal strength in dBm and age of each reading in milliseconds) along with available GPS data. Skyhook's first-party location network contains historical records of each of those location beacons as Skyhook has observed them in the past. This allows our network to self-learn and self-heal as the coordinates of each location beacon evolve with each location request. It also allows Skyhook to deliver the most confident, historically-informed positioning available in the market today.