

# Location Based Services (LBS) Docs

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Phunware's Location Based Services (LBS) module powers robust [Mapping](#), [Navigation](#) and [Wayfinding](#) experiences to guide your app users around physical venues via turn-by-turn directions. [Blue Dot Indoor Navigation](#) can be optionally added to allow users to see their position and movements on a map in real time, mirroring Apple/Google Maps blue dot experiences.

Note: Blue Dot Indoor Navigation requires location hardware installation and configuration.

The Location Based Services (LBS) module includes:

- Mapping and Location SDKs and APIs (for iOS/Android apps)
- MaaS portal web management tool, to manage venue/building/floor information, maps, points of interest (POIs) and routes

[Releases](#) [\(LBS\) Training](#) [\(LBS\) Config Guides](#) [\(LBS\) Android SDK](#) [\(LBS\) iOS SDK](#) [\(LBS\) APIs](#) [\(LBS\)](#)

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## Location Based Services Releases

Date	Updates/Release Notes	iOS Mapping SDK	iOS Location SDK	Android Mapping SDK	Android Location SDK	Notes
09.12.17	<a href="#">Location Sharing</a>	Mapping v3.1.4		Mapping v3.1.2		
09.12.17	<a href="#">Custom POIs</a>	Mapping v3.1.2		Mapping v3.1.2		
03.29.17	<a href="#">Mist(vBLE) Location Provider</a>					<ul style="list-style-type: none"><li>• Support new location providers<ul style="list-style-type: none"><li>• Mist (vBLE)</li><li>• BeaconPoint</li></ul></li></ul>
02.02.17	<a href="#">Managed Provider</a>	Mapping v3.1.0	Location v3.1.0	Mapping v3.1.0	Location v3.1.0	<ul style="list-style-type: none"><li>• Updates SDK support</li></ul>

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## Location Based Services Training Resources

Document Title/Link	Document Description	Last Updated
<a href="#">Mapping (LBS) Module #1: Venue-Campus-Building-Floor Hierarchy Configuration</a>	This training video shows you how to construct a map hierarchy in Phunware's MaaS portal and load the maps you will configure for your mobile applications.	7/5/2017
<a href="#">Mapping (LBS) Module #1.5: Map Alignment</a>	This training video shows you how to use the Set Map tools in Phunware's MaaS portal to align your uploaded floor maps with an accurate world grid so it is set at an accurate latitude and longitude.	7/5/2017
<a href="#">Mapping (LBS) Module #2: POI In-app Display</a>	This video gives you preview of how your maps and POIs appear in your Mobile applications after you have completed the configuration in MaaS Portal	7/5/2017
<a href="#">Mapping (LBS) Module #3: POI Configuration</a>	This training video shows you how to set and configure points of interest (POIs) on your floor maps in Phunware's MaaS portal.	7/5/2017
<a href="#">Mapping (LBS) Module #4: Custom POI Icon and Banner Configuration</a>	This training video shows you how to configure optional advanced options for your POIs including: custom POI icons and metadata (like POI card banners) to your POI's.	7/5/2017
<a href="#">Mapping (LBS) Module #5: Route Configuration</a>	This training video shows you how to configure wayfinding routes in Phunware's MassS Portal using waypoints, routes and inaccessible waypoints and routes to assist with both static and dynamic wayfinding in you applications.	7/5/2017
<a href="#">Mapping (LBS) Module #6: Publishing and Updating Maps</a>	This training video shows you how to use the features of the Publishing tab in MaaS portal to view current and historical configuration changes and publish changes to your maps in your applications.	7/5/2017
<a href="#">Mapping (LBS) Module #7: General Blue Dot Location Provider Configuration</a>	This training video provides an introduction to configuring location providers for blue dot, turn-by-turn navigation in you applications. Each provided is configured differently so view the training specific to your implementation after viewing this video.  <b>NOTE:</b> This training video is specific to SDK v3.1.1 and newer	7/5/2017
<a href="#">Mapping (LBS) Module #7.1: Hyperlocation Configuration</a>	This video provides configuration instructions specific to Location Provider - Cisco Hyperlocation  <b>NOTE:</b> This training video is specific to SDK v3.1.1 and newer	7/5/2017

<a href="#">Mapping (LBS) Module #7.2: BLE Configuration</a>	This video provides configuration instructions specific to Location Provider - Cisco Beacon Point <b>NOTE:</b> This training video is specific to SDK v3.1.1 and newer	7/5/2017
<a href="#">Mapping (LBS) Module #7.3: Beacon Point Configuration</a>	This video provides configuration instructions specific to Location Provider - BLE <b>NOTE:</b> This training video is specific to SDK v3.1.1 and newer	7/5/2017
<a href="#">Mapping (LBS) Module #7.4: Mist Configuration</a>	This video provides configuration instructions specific to Location Provider - Mist <b>NOTE:</b> This training video is specific to SDK v3.1.1 and newer	7/5/2017
<a href="#">Location-based Services End-to-End Training Presentation</a>	Power point training that explains the 2 types of Location-based Services Phunware offers, the SDKs used by them, the prerequisites for configuration and all the steps required to create, update, and delete Venues, Campuses, Buildings, Floors, Maps, POIs, Waypoints, Route Segments, and Location Providers for Blue dot navigation.	3/6/2017

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## Location Based Services Configuration/Integration Guides

Document Title/Link	Document Description	Last Updated
<a href="#">LBS (Mapping) Configuration Guide 1.0</a>	This guide details how to use Phunware's MaaS portal Mapping module to configure the two types of Location-based services you can enable: Mapping and Blue dot Turn-by-turn navigation.	3/23/2017
<a href="#">Map Creation Style Guide and Best Practices for MaaS Portal</a>	This guide will explain how to create floor maps using a vector design tool like Adobe Illustrator and the graphic design conventions that will provide the best maps for wayfinding results in your Phunware-enabled mobile applications.  This guide provides best practices, instructions, and conventions for generating the SVG and PDF formatted maps as required for map configuration in MaaS portal.	3/31/2017

<a href="#">Dynamic Wayfinding Device Integration Guides</a>	Because Phunware provides hardware agnostic dynamic wayfinding experiences our customers have a variety of options as to the type of signal provider and the brand of hardware they choose to integrate. The following documents provide checklists and instructions for the integration of the types and brands of signal providers Phunware has worked with.	1/23/2018
<del><a href="#">Beacon Validator App Users Guide</a></del>	<del>The guide will help with configuring the Beacon Validator Android app that is used to validate and record the technical parameters of BLE beacons that will be fingerprinted for dynamic wayfinding application.</del> The Beacon Validator App has been deprecated. Please do not use this app moving forward as it will not propagate beacon information to the new system.	 15 Mar 2018
<a href="#">Phunware Locate App v2.1 Users Guide</a>	The guide provides instructions, best practices, pre-requisites for using the Phunware Locate iOS App for fingerprinting a target venue.  Locate App enables BLE (Bluetooth Low Energy) driven blue dot by registering the signals from a venue's beacons. This allows an app to determine its current position based on the strength of the various signals it hears, combined with the known locations (coordinates) of those signal sources.	 18 Jul 2018
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## Android Location Based Services SDK Developer Documentation

Document Title/Link	SDK Type	Document Description	Last Updated
<a href="#">Creating an ADA-Compliant app with Mapping SDK 3.0</a>	Mapping	Provides links and tips to creating Android mapping routing applications for the visually impaired.	10/10/2016
<a href="#">Android Mapping SDK - Getting Started (Android)</a>	Mapping	Provides a step-by-step quick start to adding a Phunware Map to an Android app. <a href="#">Android Studio</a> is the recommended development environment for building an app with the Phunware Mapping SDK.	1/30/2017

<a href="#">Integrating a Location Provider - Location SDK - Android (v3.0.0-3.1.0)</a>	Location	This guide provides instructions for integrating Location SDK for routing. It is only applicable for users of the Android Location SDK v 3.0.0-3.1.0.  *If you are using a more recent version of the Android Location SDK, view the <a href="#">Location SDK-Managed Provider Integration Guide</a> .  *If you are using an earlier version of the Location SDK for Android contact Phunware Support ( <a href="mailto:support@phunware.com">support@phunware.com</a> ).	1/30/2017
<a href="#">Android Mapping and Location SDK - Getting Started and Integration Guide (3.1.1 and newer)</a>	Mapping and Location	This guide provides instructions for getting started with the Location SDK and integrating Location SDK for routing. It is only applicable for users of the Android Location SDK v 3.1.1 and newer.  *If you are using version 3.0.0 - 3.1.0 of the Android Location SDK, view <a href="#">Integrating a Location Provider</a>  *If you are using a version of the Location SDK for Android earlier than 3.0.0 contact Phunware Support for SDK assistance ( <a href="mailto:support@phunware.com">support@phunware.com</a> ).	3/10/2017
<a href="#">Mapping SDK - Using a MapView in a Custom Layout</a>	Mapping	Provides examples and practice of MapView use, which is a subclass of the Google Maps MapView class and can be used to place a map in any Android View.	8/13/2016
<a href="#">Mapping SDK - Getting POI info from a Map Marker</a>	Mapping	Explains how Mapping SDK associates a <b>PointOptions</b> object with its associated Google map marker object and provides an example of how to gain access to the POI info from the marker by calling the <code>getTag()</code> method on the marker and casting it to <b>PointOptions</b> .	3/1/2017
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## iOS Location Based Services SDK Developer Documentation

Document Title/Link	SDK Type	Document Description	Last Updated
<a href="#">Mapping SDK 3.0 (iOS)</a>	Mapping	Provides a link to all the documentation about the iOS Mapping classes used in the SDK	10/24/2016
<a href="#">Mapping SDK 3.0 Integration Guide (iOS)</a>	Mapping	Provides installation instructions, links to documentation, sample app information, usage and attribution for the iOS Mapping SDK	10/24/2016
<a href="#">Routing for iOS Mapping</a>	Location	Provides details around calculating and updating routes using the <code>PWMapKit</code> and <code>PWRoute</code> respectively	10/28/2016
<a href="#">Maps-ADA Sample App Developer Overview (iOS)</a>	Mapping	Provides a list of the controllers used for creating iOS mapping routing applications for the visually impaired.	10/28/2016

ADA-Specific Use	Location	Provides links and tips to creating Android mapping routing applications for the visually impaired.	10/28/2016
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## Location Based Services APIs

Document Title/Link	SDK/API Type	Document Description	Last Updated
<a href="#">Mapping API v1.1</a>	Mapping	This document describes the specification for the MaaS Mapping API ("API"), which allows remote clients to manage the various resources associated with mapping, including venues, campuses, buildings, floors, points of interest, segments and routes, including security and protocols.	1/15/2015
<a href="#">Mapping API Architecture</a>	Mapping	Describes the Mapping API architecture including: Production URL, Request / Response Format, HTTP Method, Date / Time Format, Bracketed IDs ("[id]s"), Ellipses ("...s"), PUT Methods and Partial Updates, URL Definitions, and GET Methods and Query Strings	1/15/2015
<a href="#">Cisco Prime Binding</a>	Location	Provides the POST steps and data to construct venues, campuses, buildings, floors and resources from data provided by Cisco Prime; includes the callback URL in Cisco Prime to which an HTTP POST request is sent.	1/15/2015
<a href="#">Mapping API Methods</a>	Mapping	Provides descriptions of the endpoints and methods for creating, updating, and deleting: VENUE, CAMPUS, BUILDING, FLOOR, RESOURCE, POINT, POI TYPE, ROUTE, SEGMENT; additional methods related to the main processes are also	1/15/2015
<a href="#">Mapping API Rich Example</a>	Mapping	This document provides examples that showcase how developers can build an example venue. Upon completion, the venue will appear in the Multiscreen as a Service (MaaS) portal's <b>Map Editor</b> , where credentialed users can then create points of interest (POIs), segments and routes for the newly created venue's map.	1/23/2015
<a href="#">Mapping API Response Handling</a>	Mapping	Provides the HTTP status codes and and error payloads for the mapping API	1/12/2015
<a href="#">POI Types</a>	Mapping	A list of the pre-defined POI Types and their integer values in the database	1/12/2015
<a href="#">Location API v1.2</a>	Location	This document describes the specification for the MaaS Location ("API"), which allows remote clients to query for their devices' locations.	1/12/2015
<a href="#">Location API Architecture</a>	Location	Describes the Location API architecture including: Production URL, Request / Response Format, HTTP Method, Date / Time Format, Bracketed IDs ("[id]s"), Ellipses ("...s"), PUT Methods and Partial Updates, URL Definitions, and GET Methods and Query Strings	3/16/2015

Retrieve Location Data	Location	This method is used to return a device's location coordinates and venue map data.	1/14/2015
Location API Response Handling	Location	Provides the HTTP status codes and and error payloads for the location API	1/14/2015
MARS API v1.1	MARS	This document describes the specification for the MaaS MARS API ("API") and the contract between the API and the mobile SDKs. It describes the payload data delivered by the Cisco MSE for processing by the MARS server.	1/13/2015
MARS API Architecture	MARS	Provides the request/response format, HTTP method description, date/time format and, ellipses usage	1/13/2015
MARS API Method	MARS	Description of the methods in use with Phunware's MARS API including: Register with MARS, Obtain a MAC Address, Deliver the MAC Address to the MARS Server, Register or Update with Cisco MSE, Upload Map Image Data for a Floor, and Delete Full Bind record.	1/13/2015
MARS API Response Handling	MARS	Description of the HTTP status codes and error payloads.	1/13/2015

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