Geofencing

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Online Version

Contents

This topic describes the geofencing features.

1. Concepts

1.1. LBS

Location-based services (LBS) are software services that use geographic data and information to provide services to users. With the control database, the mobile client can access users’ geographic coordinates through the wireless communication network or satellite navigation system. This information is then integrated with other data to offer location-based services.

2.

Geofencing is a new LBS application that creates a virtual perimeter around a physical location. Like a real fence, a geofence creates a separation between that location and the area around it. Unlike a real fence, it can detect movement inside the virtual boundary. When a device enters or leaves a specific area, users will receive notifications.

3. applications

To create a geofence for travel devices, specify the radius with the device’s current location as the central point. The following describes how to use the standard geofencing features.

```
sequenceDiagram
%%{init: { "sequence": { "wrap": true} } }%%
    participant User
    participant Mobile App
    participant Cloud
    participant Vehicle
    note over Mobile App,Cloud: Geofencing enabled
    User->>Mobile App: Enable geofencing
    Mobile App->>Cloud:
    Cloud->>Mobile App: Enabled successfully
    note over Mobile App,Cloud: Geofencing activated
    Vehicle->>Cloud: Report GPS when locking
    Vehicle->>Cloud: Report GPS after locking
    note over Mobile App,Vehicle: Query vehicle locking status and l
ocation information
    note over Mobile App,Cloud: The locked vehicle leaves the geofen
ce
    Cloud->>Mobile App: Trigger an alert
```

- Enable geofencing and set alerts: Use the geofencing setup method to enable this feature and set alert preferences, such as app notifications, SMS messages, and phone calls.
- Location of the geofence center: Usually the location where the vehicle was last locked, changing as the vehicle moves. When the vehicle is locked, it reports its current location. An alert will be triggered if the reported location deviates beyond the specified radius. Set the respective DP to receive an alert when the status of other features changes.

These features allow users to monitor vehicle location and receive live alerts when unusual activities occur.

4. services

Class (protocol)	Description
TSODGeofenceService	Geofencing services
TSODGeofenceModel	Geofence information model

4.1. Set a geofence

```
- (void)setGeofenceWithRequestModel:(TSODGeofenceModel *)requestMode
l
                            success:(nullable ThingSuccessBOOL)succe
ss
                            failure:(nullable ThingFailureError)fail
ure NS_SWIFT_NAME(setGeofence(requestModel:success:failure:));
```

Example

```
    TSODGeofenceModel *requestModel = [[TSODGeofenceModel alloc] ini
t];
    requestModel.devID = self.device.deviceModel.devId;
    requestModel.geofenceInfo.open = YES;
    requestModel.geofenceInfo.radius = 50;
    requestModel.geofenceInfo.noticeType = noticeType;
    requestModel.geofenceInfo.dpCode = @"blelock_switch";
    requestModel.geofenceInfo.dpValue = @NO;
    self.service = [[TSODGeofenceService alloc] init]
    [self.service setGeofenceWithRequestModel:requestModel success:^
(**BOOL** result) {
    //...
    } failure:^(NSError *error) {
    }];
```

4.2. Get geofence information

```
- (void)getGeofenceInfoWithDevID:(NSString *)devID
                         success:(nullable void(^)(TSODGeofenceModel
 *geofenceModel))success
                         failure:(nullable ThingFailureError)failure
 NS_SWIFT_NAME(getGeofenceInfo(devID:success:failure:));
```

Example

```
self.service = [[TSODGeofenceService alloc] init]
[self.service getGeofenceInfoWithDevID:self.deviceModel.devId succes
s:^(TSODGeofenceModel * _Nonnull geofenceModel) {
        BOOL isOpen = geofenceModel.geofenceInfo.isOpen;
        //...
    } failure:^(NSError *error) {
    }];
```

Data model of `TSODGeofenceModel`

Field	Type	Description
devID	NSString	The device ID.
geofenceInfo	TSODGeofenceInfoModel	The geofence information.

Data model of `TSODGeofenceInfoModel`

Field	Type	Description
radius	NSInteger	The radius of the geofence, in meters. With geofencing enabled, the radius must be greater than 0.
noticeType	TSODGeofenceNoticeType	The alert type, including app notifications, SMS messages, and phone calls. The SMS and phone call services require a separate purchase.
open	BOOL	Specifies whether to enable geofencing.
dpCode	NSString	The associated DP. Typically, the code of this DP determines whether to trigger the geofence. If you use the standard solution, associate the locking DP.

Field	Type	Description
dpValue	id	The value of the desired DP activated by geofencing. To activate geofencing when the vehicle is locked, set the value to `@NO` .