



# HERE Tracking

## Developer's Guide

Version 1.0

# Important Information

## Notices

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**Topics:**

This section contains document notices.

- [Legal Notices](#)
- [Document Information](#)

## Legal Notices

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## Document Information

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# Chapter 1

## Introduction

---

### Topics:

- [What Is HERE Tracking?](#)
- [Why Use HERE Tracking?](#)
- [Features](#)

This document introduces HERE Tracking and:

- explains key concepts
- provides examples
- documents resources and query parameters
- documents response structures and data types

## What Is HERE Tracking?

---

HERE Tracking is a horizontal PaaS cloud product designed to address location tracking problems for a wide range of Location IoT industry verticals.

HERE Tracking exposes a set of REST APIs and client libraries to enable location tracking and geo-fencing for a variety of device form-factors including small-footprint (small memory and processing power) devices. HERE Tracking also includes end-user applications on mobile and web to be used as reference apps to demonstrate the product capabilities.

## Why Use HERE Tracking?

---

HERE Tracking provides resources to address the following high-level use cases:

**Table 1: Main features of HERE HERE Tracking**

Feature	Description
Connect Devices	Provides the APIs to connect all your tracker devices and to rapidly deploy your IoT solution.
Track Location and Data	Track your devices indoor and outdoor, see traces on a map, create geo-fences and get custom notifications.
Analyze Data	Analyze historical tracking data with data visualization tools such as charts, graphs, and heatmaps.

## Features

---

HERE Tracking builds upon a set of objects and backend capabilities that facilitate working with IoT devices in an open and flexible manner. Here's a summary of the main features:

### Devices

Add devices to the cloud and configure in detail how they report their geolocation and environmental data.

### Positioning

Use WiFi and BLE to determine position in situations or on devices where GPS is unavailable.

### Shadows

Manage the configuration for your devices and access their reported geolocation and environmental data.

### Traces

Access current and historical data that a device collected and see it visualized as a trace on the map.

## Geofences

Create circular and polygonal geo-fences on the map and trigger notifications when a device enters or exits a geo-fence.

## Notifications

Receive notifications via SMS or webhook when devices enter or leave geofences or trigger notifications to devices to have them report back.

# Chapter 2

## API Reference

---

### Topics:

- [Authentication](#)
- [Operations](#)
- [Definitions](#)
- API Endpoint <https://tracking.api.here.com/>
- Schemes: http, https
- Version: 2.0.0

## Authentication

---

The following section describes all methods of authentication

### authBearer

This method uses `apiKey` authentication.

<b>description</b>	Users are authenticated using an OAuth 1.0 bearer token obtained from HERE Account.
<b>name</b>	Authorization
<b>in</b>	header

## Operations

---

The following section describes all operations

### Geofence association

This service is used to manage the associations between devices and geofences.

Notifications are generated when a device crosses into or out of an associated geofence.

#### Health status

Part of: *Geofence association*

GET `/geofence-associations/health`

#### Responses

- 200 OK  
OK  
The service is performing as expected

#### Response Example (200 OK)

```
"string"
```

## Service version

Part of: *Geofence association*

GET /geofence-associations/version

### Responses

- 200 OK  
OK  
Service returns its current version number

### Response Example (200 OK)

```
{
  "servicename": "1.0.0"
}
```

## Gets devices associated with this geofence

Part of: *Geofence association*

GET /geofence-associations/v2/{geofenceId}/devices

This returns a list of devices that are associated with this geofence.

Note: A device appearing in this list does not mean the device is inside the geofence.

### Request Parameters

Name	In	Type	Required	Description
count	query	integer x ≤ 100		The number of items to return per page.
geofenceId	path	string	<b>required</b>	Geofence id
pageToken	query	string		A page token that you can use to retrieve next page.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

### Responses

- 200 OK Successful
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.

- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found Geofence ID not found

## schema

## scopes

*authBearer*

## Response Example (200 OK)

```
{
  "data": [
    {
      "trackingId": "string",
      "shadow": {
        "desired": {
          "payload": "object",
          "system": {
            "stateVersion": "integer",
            "rate": {
              "sampleMs": "number",
              "sendMs": "number",
              "distanceM": "number"
            }
          }
        }
      },
      "reported": {
        "payload": "object",
        "position": {
          "accuracy": "number",
          "alt": "integer",
          "altaccuracy": "integer",
          "confidence": "integer",
          "course": "integer",
          "floor": {
            "level": "number",
            "id": "string",
            "name": "string"
          },
          "lat": "number",
          "lng": "number",
          "satellitecount": "integer",
          "speed": "integer",
          "type": "string",
          "wlanccount": "integer"
        },
        "system": {
          "phoneNumber": "+491234567890",
          "client": {
            "manufacturer": "string",
            "model": "string",
            "firmware": "string",
            "platform": "string",
            "name": "string",
            "version": "string",

```

```
        "homenetwork": []
      },
      "stateVersion": "integer"
    }
  }
},
"pageToken": "string",
"count": "integer"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
```



```

    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the
target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]

```

## Associates a device with a geofence

Part of: *Geofence association*

PUT /geofence-associations/v2/{geofenceId}/{trackingId}

Notifications will be generated when the device enters or exits this geofence

### Request Parameters

Name	In	Type	Required	Description
geofenceId	path	string	<b>required</b>	Geofence id
trackingId	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

### Responses

- 200 OK  
Successful  
The device was associated with the geofence
- 201 Created Created
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found Geofence ID not found

schema

scopes

*authBearer*

### Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

### Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

### Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

### Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

```

    }
  }
]

```

## Disassociates a device and a geofence

Part of: *Geofence association*

**DELETE** /geofence-associations/v2/{geofenceId}/{trackingId}

Notification will no longer be generated when the device enters or exits this geofence.

### Request Parameters

Name	In	Type	Required	Description
geofenceId	path	string	<b>required</b>	Geofence id
trackingId	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

### Responses

- 204 No Content  
Successful (no content)  
The association was successfully removed.
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found Geofence ID not found

**schema**

**scopes**

*authBearer*

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Geofences

Create and manage geofences.

A geofence is a geographic boundary that can be defined then associated with your devices. When a device transitions into or out of a geofence, a notification can be generated.

### Health status

Part of: [Geofences](#)

GET /geofences/health

#### Responses

- 200 OK  
OK  
The service is performing as expected

#### Response Example (200 OK)

```
"string"
```

### Service version

Part of: [Geofences](#)

GET /geofences/version

#### Responses

- 200 OK  
OK  
Service returns its current version number

#### Response Example (200 OK)

```
{  
  "servicename": "1.0.0"  
}
```

### Creates a geofence

Part of: [Geofences](#)

POST /geofences/v2

A geofence can be specified as a circle or as a polygon. You can also assign a name and a description to each geofence to help identify them. If no name is assigned, its unique ID will be used instead.

## Circle

Specify the coordinates of the center point of the circle and a radius in meters.

```
{
  "name": "Home"
  "definition": {
    "center": {
      "lat": 52.5308398,
      "lng": 13.38490035
    },
    "radius": 100
  },
  "description": "Small area around my house."
}
```

## Polygon

Specify an array of points. A minimum of three points are required.

**NOTE: If the points do not describe a closed polygon, the polygon is automatically closed between the last and first points.**

```
{
  "name": "Work"
  "definition": {
    "points": [{
      "lat": 52.5308398,
      "lng": 13.38490035
    }, {
      "lat": 52.530443,
      "lng": 13.38482003
    }, {
      "lat": 52.5308298,
      "lng": 13.38492235
    }
  ]
  },
  "description": "The area around work."
}
```

In case of success, this will return with HTTP status 201 and the response body will contain the ID of the created geofence.

**Request-model:** *geofence*

## Request Parameters

Name	In	Type	Required	Description
body	body	object		(no description)
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 201 Created  
Created  
The geofence was successfully created
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges

### schema

### scopes

*authBearer*

## Request Example

```
{
  "name": "Berlin Office",
  "type": "circle",
  "description": "An area in berlin",
  "definition": {
    "center": {
      "lng": "13.38490035",
      "lat": "52.5308398"
    },
    "radius": 100
  }
}
```

## Response Example (201 Created)

```
{
  "id": "0d994f31-ceed-42e4-96a5-4484585c3802"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
  }
]
```

```

    "message": "The request object is in and incorrect format or has values that are invalid or out
of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]

```

## Response Example (401 Unauthorized)

```

[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]

```

## Response Example (403 Forbidden)

```

[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]

```

## Retrieves geofences

Part of: [Geofences](#)

GET /geofences/v2

### Request Parameters

Name	In	Type	Required	Description
count	query	integer x ≤ 100		The number of items to return per page.
pageToken	query	string		A page token that you can use to retrieve next page.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.



## Responses

- 200 OK  
Successful  
The geofence definitions were retrieved successfully.
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges

### schema

### scopes

*authBearer*

## Response Example (200 OK)

```
{
  "data": [
    {
      "id": "d0c29690-5d26-4cf1-a37e-b7816e72cb99",
      "geofence": {
        "definition": {
          "points": [
            {
              "lng": "13.38490035",
              "lat": "52.5308398"
            },
            {
              "lng": "14.38490035",
              "lat": "52.5408398"
            },
            {
              "lng": "13.39490035",
              "lat": "53.5308398"
            }
          ]
        },
        "type": "polygon"
      }
    },
    {
      "id": "ff92eda0-3114-4640-b7e6-4ba641ae1124",
      "geofence": {
        "name": "16fbc82c-88d1-4219-bfad-6e5de52688a2",
        "description": "This is a circular geofence",
        "type": "circle",
        "definition": {
```

```
        "center": {
          "lat": 52.5308398,
          "lng": 13.38490035
        },
        "radius": 100
      }
    ],
    "pageToken": "027ffffea253d79fc",
    "count": 2
  }
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Deletes all geofences

Part of: [Geofences](#)

**DELETE** /geofences/v2

If the geofence id is not provided all the geofences created by the user will be deleted.

NOTE: To prevent this from happening by accident, you must also supply the header `x-confirm` with the value `true`. If this header is not explicitly specified on a **Delete All** request, the request will fail.

### Request Parameters

Name	In	Type	Required	Description
<code>x-confirm</code>	header	boolean , <i>enum</i> { true }	<b>required</b>	A safety measure that prevents you from accidentally deleting data.  To confirm that all entries should be deleted, set the value to "true".
<code>x-request-id</code>	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

### Responses

- 204 No Content Successful (no content)
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found Geofence ID not found

#### schema

#### scopes

`authBearer`

### Response Example (400 Bad Request)

```
[
  {
```

```
"error": "Bad request",
"code": 400,
"id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
"message": "The request object is in and incorrect format or has values that are invalid or out
of range.",
"details": {
  "hereErrorCode": 400306
}
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the
target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Retrieves a single geofence

Part of: [Geofences](#)

GET /geofences/v2/{geofenceId}

## Request Parameters

Name	In	Type	Required	Description
geofenceId	path	string (uuid)	<b>required</b>	ID of the geofence
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

## Responses

- 200 OK Successful
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 404 Not Found Geofence ID not found

### schema

### scopes

*authBearer*

## Response Example (200 OK)

```
{
  "id": "d0c29690-5d26-4cf1-a37e-b7816e72cb99",
  "geofence": {
    "definition": {
      "points": [
        {
          "lng": "13.38490035",
          "lat": "52.5308398"
        },
        {
          "lng": "14.38490035",
          "lat": "52.5408398"
        },
        {
          "lng": "13.39490035",
          "lat": "53.5308398"
        }
      ]
    },
    "type": "polygon"
  }
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Updates a single geofence

Part of: [Geofences](#)

**PUT** /geofences/v2/{geofenceId}

Update the geofence shape, name or description.

In case of success, this returns the updated geofence.

**Request-model:** [geofenceUpdate](#)

## Request Parameters

Name	In	Type	Required	Description
body	body	object		(no description)
geofenceId	path	string (uuid)	<b>required</b>	ID of the geofence
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 200 OK  
Successful  
The geofence definition was updated.
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found Geofence ID not found

### schema

### scopes

*authBearer*

## Request Example

```
{
  "name": "Berlin Office",
  "type": "circle",
  "description": "An area in berlin",
  "definition": {
    "center": {
      "lng": "13.38490035",
      "lat": "52.5308398"
    },
    "radius": 100
  }
}
```

## Response Example (200 OK)

```
{
  "data": [
    {
      "id": "d0c29690-5d26-4cf1-a37e-b7816e72cb99",
      "geofence": {
        "definition": {
          "points": [
            {
              "lng": "13.38490035",
              "lat": "52.5308398"
            },
            {
              "lng": "14.38490035",
              "lat": "52.5408398"
            },
            {
              "lng": "13.39490035",
              "lat": "53.5308398"
            }
          ]
        },
        "type": "polygon"
      }
    },
    {
      "id": "ff92eda0-3114-4640-b7e6-4ba641ae1124",
      "geofence": {
        "name": "16fbc82c-88d1-4219-bfad-6e5de52688a2",
        "description": "This is a circular geofence",
        "type": "circle",
        "definition": {
          "center": {
            "lat": 52.5308398,
            "lng": 13.38490035
          },
          "radius": 100
        }
      }
    }
  ],
  "pageToken": "027ffffea253d79fc",
  "count": 2
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```



### Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

### Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

### Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Deletes a geofence

Part of: [Geofences](#)

DELETE /geofences/v2/{geofenceId}

### Request Parameters

Name	In	Type	Required	Description
geofenceId	path	string (uuid)	<b>required</b>	ID of the geofence

Name	In	Type	Required	Description
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 204 No Content Successful (no content)
- 400 Bad Request  
Bad request  
  
The request object is in and incorrect format or has values that are invalid or out of range.  
  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
  
The account does not have the correct privileges
- 404 Not Found Geofence ID not found

schema	scopes
<i>authBearer</i>	

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

```
}  
}  
]
```

## Response Example (403 Forbidden)

```
[  
  {  
    "error": "Forbidden",  
    "code": 403,  
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",  
    "message": "The account does not have the correct privileges.",  
    "details": {  
      "hereErrorCode": 403306  
    }  
  }  
]
```

## Response Example (404 Not Found)

```
[  
  {  
    "error": "Unauthorized",  
    "code": 401,  
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",  
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the  
target resource.",  
    "details": {  
      "hereErrorCode": 401306  
    }  
  }  
]
```

## Ingestion

Data ingestion over HTTPS. This is the only interface that devices use to communicate with HERE Tracking.

### Health status

Part of: *Ingestion*

GET /v2/health

#### Responses

- 200 OK  
OK  
The service is performing as expected

#### Response Example (200 OK)

```
"string"
```

## Service version

Part of: *Ingestion*

GET /v2/version

### Responses

- 200 OK  
OK  
Service returns its current version number

### Response Example (200 OK)

```
{
  "servicename": "1.0.0"
}
```

## Gets the current timestamp

Part of: *Ingestion*

GET /v2/timestamp

Returns the server timestamp used to check the validity of a device's OAuth 1.0 header. Devices must synchronise with this timestamp to avoid clock skew.

### Request Parameters

Name	In	Type	Required	Description
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

### Responses

- 200 OK  
OK  
The server timestamp was successfully returned
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

schema	scopes
<i>authBearer</i>	

## Response Example (200 OK)

```
{
  "timestamp": "integer"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
```

```

    "hereErrorCode": 403306
  }
}
]
```

## Request a token for a registered Device.

Part of: *Ingestion*

POST /v2/token

Devices require an access token to use HERE Tracking. The authorization is an OAuth 1.0 signed request.

To generate the Authorization header for a device, you need the device's `deviceId` and `deviceSecret`. Use the Device Registry to get these credentials.

To sign your request with an OAuth 1.0 signature:

- Set the `realm` parameter to "IoT"
- Set the `oauth_consumer_key` parameter to the `deviceId`
- Set the `oauth_signature_method` parameter to "HMAC-SHA256"
- Set the `oauth_timestamp` parameter to the current unix seconds timestamp. This must be within 10 seconds of the timestamp returned by the `/v2/timestamp` endpoint
- Set the `oauth_version` parameter to "1.0"
- Generate the signature using the `deviceSecret` then set the `oauth_signature` parameter to this value

Example:

```

Authorization: OAuth realm="IoT",
  oauth_consumer_key="{deviceId}",
  oauth_signature_method="HMAC-SHA256",
  oauth_timestamp="{nowS}",
  oauth_nonce="{nonce}",
  oauth_version="1.0",
  oauth_signature="{generatedSignature}"
```

## Request Parameters

Name	In	Type	Required	Description
<code>authorization</code>	header	string	<b>required</b>	(no description)
<code>x-request-id</code>	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 200 OK Successful
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Timestamp wrong

When the request timestamp is more than 10 seconds skewed from the server time, the `x-here-timestamp` header with the current server timestamp is added to the response.

Incorrect Signature

If the OAuth signature is incorrect, the response will be a 401 but **without** the `x-here-timestamp` field.

- 403 Forbidden

Forbidden

The account does not have the correct privileges

- 404 Not Found Invalid Licence
- 412 Precondition Failed

Unclaimed Device

If the `deviceId` is valid but has not yet been claimed by an owner, an error response will be returned.

## Response Example (200 OK)

```
{
  "accessToken": "h1.ySDEpBjW2fXM0Nk1IyBohA.6Y0v1MfQUd1K7MCg9eLzrrVTT5fKfqYECYUrD7Y77d-
p9KqIZrVfjpIrkMqVC9MmfUILOm7xk7VuhCH59o0oLJCL6M8Q8cGHTKvrPcpqiEzUQks7pSZXxVbIui005caUgJ3GhrS1X4aZQuB1KSngvWMCIZ
WEtWW3SZiLa30IR0gz2121vLRjdNoLnJYsuJzHoaEKEkrMj9ffybtcBVWo9dkY1qmDQ-
DRg_loVenJK45kjHJijkQ902r_vhH8jtoXTrZ1RBFHuZtwLW8xBw70BCWPu4OYGgthjaq61mpE8iP1s7MG7gbAiW_S249aaoWMUxQN6djw8cNoT
ivSieRMxwPL56mhRQ5GRjQa8AYkuOvoCFg-
LCMIxTYhrDZM4HFWQ.duHFPjvWUQbdArCL5CU7bTowK5fd07ro83r6CRWjuB_1TK2Vy01lvfNFZiZePWLyTlN0y9uqD7Uro6t87h_a0zfpeU8_52
kv_aM-
uddpzZJJ7CmrJiwhucaEJeYRDSpuzzZWT6_NwBg6_xLjyseCv5AGs8EmsuStCFP0Ey7UDIqo9V2RA9uDP64Q0mvEw3EUTHmJGHF_8E2s4iIpjKJC
"expiresIn": 86399
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out
of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
```

```
"message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
  "details": {
    "hereErrorCode": 401306
  }
}
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (412 Precondition Failed)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Sends data and receives shadow

Part of: *Ingestion*

POST /v2



A device uses its access token to send data to HERE Tracking.

If the request is set to be synchronous, the response will be the device shadow. If the request is set to be asynchronous, the response will be empty.

object

## Properties

Name	Type	Required	Description
timestamp	integer $x \geq 0 \mid x \leq 4102448400000$		Milliseconds elapsed since 1 January 1970 00:00:00 UTC.
payload	object		An application-specific JSON object. HERE Tracking doesn't read this object but you can use it to pass information to other applications. The maximum size is 1KB
system	object		Values within the device configuration that are used by HERE Tracking for various application flows. This object can be read by HERE Tracking whereas the content of the payload is opaque. stateVersion can be provided by the Device, denoting the version of the last known desired state seen by the Device.
position	object		The reported or determined location of the device
scan	object		Radio measurements used for positioning or radio map contribution.

## Request Parameters

Name	In	Type	Required	Description
async	query	boolean		If set to true, sends the device's data without waiting for updates to the desired state.
authorization	header	string	<b>required</b>	(no description)
body	body	object		(no description)
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

## Responses

- 200 OK  
Successful  
The device data was ingested, processed and the latest shadow was returned.  
Returned if the async query parameter is not set or is set to anything other than `true`.
- 204 No Content  
Successful (no content)  
The device data was accepted but no configuration was returned.

This response is only returned if the `async` query parameter is set to `true`.

- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

schema	scopes
<i>authBearer</i>	

## Request Example

```
[
  {
    "timestamp": "integer",
    "payload": "object",
    "system": {
      "phoneNumber": "+491234567890",
      "client": {
        "manufacturer": "string",
        "model": "string",
        "firmware": "string",
        "platform": "string",
        "name": "string",
        "version": "string",
        "homenetwork": []
      },
      "stateVersion": "integer"
    },
    "position": {
      "accuracy": "number",
      "alt": "integer",
      "altaccuracy": "integer",
      "confidence": "integer",
      "course": "integer",
      "floor": {
        "level": "number",
        "id": "string",
        "name": "string"
      },
      "lat": "number",
      "lng": "number",
      "satellitecount": "integer",
      "speed": "integer",
      "type": "string",
      "wlancount": "integer"
    },
    "scan": {
      "bt": [],
```

```
    "country": {
      "mcc": "integer"
    },
    "gsm": [],
    "wcdma": [],
    "tdscdma": [],
    "lte": [],
    "cdma": [],
    "wlan": []
  }
}
```

## Response Example (200 OK)

```
{
  "configuration": "object"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

```
}  
]
```

## Notifications

Manage notification channels for a user and trigger an 'instant update' to a device.

Users can opt to receive notifications whenever one of their devices transitions into or out of a geofence. The channels supported for notifications are SMS and webhook.

### SMS

When a device transitions through a geofence, users receive a message in the following format:

"The device has {entered|exited} the geofence. The last known location was {latitude},{longitude}"

### Webhook

Once a user has registered a URL as a webhook, that URL will receive a POST request every time a transition happens.

The POST body is a JSON object that describes the transition.

```
{  
  "inOut": "PING_OUTSIDE_FENCE",  
  "fenceId": "{ID of geofence}",  
  "deviceId": "{ID of device that transitioned}",  
  "timestamp": 1499258184142,  
  "notificationStatus": "SENT"  
}
```

Possible values for `inOut` are:

- PING\_OUTSIDE\_FENCE
- PING\_IN\_FENCE

### Offline

If a device has been working offline and caching position updates, transition notifications aren't sent until the device is online again. Once the device is online, the user receives a notification for the latest transition only.

This behavior prevents the user from receiving a batch of out-of-date notifications whenever their device goes back online. However, all transitions are still recorded in the transitions log.

## Health status

Part of: [Notifications](#)

GET /notify/health

### Responses

- 200 OK  
OK

The service is performing as expected

## Response Example (200 OK)

```
"string"
```

## Service version

Part of: *Notifications*

GET /notify/version

### Responses

- 200 OK  
OK  
Service returns its current version number

## Response Example (200 OK)

```
{  
  "servicename": "1.0.0"  
}
```

## Health status

Part of: *Notifications*

GET /notifications/health

### Responses

- 200 OK  
OK  
The service is performing as expected

## Response Example (200 OK)

```
"string"
```

## Service version

Part of: *Notifications*

GET /notifications/version

## Responses

- 200 OK  
OK  
Service returns its current version number

### Response Example (200 OK)

```
{
  "servicename": "1.0.0"
}
```

## Registers for notifications

Part of: [Notifications](#)

### POST /notifications/v2/register

Registers users for notifications when a device transitions into or out of a geofence. The input data can be one of the following:

- A phonenumber to receive SMS notificatons
- A URL to receive webhook notifications

**Request-model:** [registerRequestBody](#)

### Request Parameters

Name	In	Type	Required	Description
body	body	object		(no description)
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

## Responses

- 200 OK  
Successful  
The notification channel for the specified user or device was successfully updated.
- 201 Created  
Created  
The notification channel for the specified user or device was successfully created
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.

- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- default  
Successful  
The notification channel for the specified user or device was successfully updated.

schema	scopes
<i>authBearer</i>	

## Request Example

```
{
  "type": "webhook",
  "url": "https://example.com/call/this/web/hook"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (default)

```
{
  "status": "ok",
  "message": "updated"
}
```

## Triggers instant update

Part of: *Notifications*

POST /notifications/v2/notify/{trackingId}

You can trigger a message to a device which will cause it to report its status to HERE Tracking outside of its normal schedule. This is called an 'instant update'.

To trigger an instant update, the device must have previously registered its phone number by sending the following payload:

```
{
  "system" : {
    "phoneNumber": "+48xxxxxxxxx"
  }
}
```

## Properties

Name	Type	Required	Description
text	string	required	

## Request Parameters

Name	In	Type	Required	Description
body	body	object		(no description)
trackingId	path	string	required	The ID HERE Tracking assigned to the device when it was claimed by a user.



## Responses

- 200 OK  
Success  
An SMS was sent to the device.  
NOTE: This does not guarantee the device will respond.
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 412 Precondition Failed Precondition failed. Phone number is not registered.

schema	scopes
<i>authBearer</i>	

## Request Example

```
{
  "text": "SMS text"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
```

```
"code": 401,
"id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
"message": "Invalid Device Authorization, timestamp doesn't match server time.",
"details": {
  "hereErrorCode": 401306
}
}
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (412 Precondition Failed)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Gets all registered notification channels

Part of: [Notifications](#)

**GET** /notifications/v2/registrations

Gets a list of all previously registered notification channels.

The responded channel name(s) will be: - 'webhook' if a webhook URL has been registered - 'SMS' if a phone number has been registered for SMS notifications

### Responses

- 200 OK  
Success  
The list of registered notification channels was returned
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- default

Success

The list of registered notification channels was returned

**schema**

**scopes**

*authBearer*

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (default )

```
[
  "SMS",
  "webhook"
]
```

## Unregisters from notifications

Part of: [Notifications](#)

**DELETE** /notifications/v2/registration/{channelName}

Unregister from notifications for the specified channel.

The channel name can be

- 'webhook' for webhook notifications
- 'SMS' for SMS notifications

### Request Parameters

Name	In	Type	Required	Description
channelName	path	string	<b>required</b>	The name of the notification channel from which to unregister

### Responses

- 200 OK  
Successful  
The notification channel was successfully deleted.
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- default Successful

#### schema

#### scopes

*authBearer*

### Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

```
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (default )

```
{
  "status": "ok",
  "message": "deleted"
}
```

## Registry

The Registry is used to create credentials for a device manufacturer and for a claiming a device to a user.

### Health status

Part of: [Registry](#)

GET /registry/health

### Responses

- 200 OK  
OK  
The service is performing as expected

### Response Example (200 OK)

```
"string"
```

### Service version

Part of: [Registry](#)

GET /registry/version

## Responses

- 200 OK  
OK  
Service returns its current version number

## Response Example (200 OK)

```
{
  "servicename": "1.0.0"
}
```

## Creates credentials for a batch of devices

Part of: [Registry](#)

POST /registry/v2/{app\_ID}/devices

Starts a batch job to create credentials for the number of devices specified in the body.

## Properties

Name	Type	Required	Description
count	integer $x \geq 1 \mid x \leq 1000000$	<b>required</b>	Number of device credentials requested

## Request Parameters

Name	In	Type	Required	Description
app_ID	path	string (at least 8 chars)	<b>required</b>	(no description)
body	body	object		(no description)
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

## Responses

- 202 Accepted  
Accepted  
The batch job has been started. Use the status endpoint to check on the progress and the results endpoint to retrieve the credentials upon completion.
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found No app ID found.

schema	scopes
<i>authBearer</i>	

## Request Example

```
{
  "count": 10
}
```

## Response Example (202 Accepted)

```
[
  {
    "jobId": "344a17a4-1b19-4420-bb6f-8400b87071fd"
  }
]
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

```

    }
  }
]

```

### Response Example (403 Forbidden)

```

[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]

```

### Response Example (404 Not Found)

```

[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]

```

## Creates credentials for a single device

Part of: [Registry](#)

POST /registry/v2/{app\_ID}/one-device

The credentials will be created. The ID and secret will instantly be returned in the body.

If autoclaim=true, the created device is immediately bound to the requesting account.

### Request Parameters

Name	In	Type	Required	Description
app_ID	path	string (at least 8 chars)	<b>required</b>	(no description)
autoclaim	query	boolean		If set to true then the license is created and immediately claimed by the same user.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.



## Responses

- 200 OK Successful
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

- 404 Not Found No app ID found.

schema

scopes

*authBearer*

## Response Example (200 OK)

```
{
  "deviceId": "4cdafa38-fdf9-474c-8eb3-72ea276a163a",
  "deviceSecret": "AGIhZGmU1jJS-H1ZfAZuh5U9cswyqquWVrb0KGwKN9s",
  "trackingId": "HERE-6da0f871-b4eb-4800-90e6-4bae86a788d6"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {

```

```

    "hereErrorCode": 401306
  }
}
]
```

## Response Example (403 Forbidden)

```

[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```

[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Gets credentials job progress

Part of: [Registry](#)

GET /registry/v2/{jobId}/status

Use this endpoint to check the progress of a previously created credentials request

### Request Parameters

Name	In	Type	Required	Description
jobId	path	string (uuid)	<b>required</b>	UUID v.4.0
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

### Responses

- 200 OK Successful

- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found No job ID found.

schema	scopes
<i>authBearer</i>	

## Response Example (200 OK)

```
{
  "status": "started",
  "percent": 10
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Gets credentials job results

Part of: [Registry](#)

GET /registry/v2/{jobId}/results

This returns the results of the given batch job if the job has completed.

### Request Parameters

Name	In	Type	Required	Description
jobId	path	string (uuid)	<b>required</b>	UUID v.4.0
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

### Responses

- 200 OK Successful
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found No job ID found.

schema	scopes
<i>authBearer</i>	

## Response Example (200 OK)

```
{
  "data": [
    {
      "deviceId": "d34d8c7f-6bd5-496a-edef-7bf2395aa456",
      "deviceSecret": "qerjpsdujnewppqnqefvli"
    },
    {
      "deviceId": "c6a22c91-c185-474c-9970-5eea445d92ac",
      "deviceSecret": "xvbnm,do0e,md;ffgdsle,d"
    }
  ],
  "count": 2,
  "pageToken": "1490376144514"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {

```

```

    "hereErrorCode": 401306
  }
}
]
```

### Response Example (403 Forbidden)

```

[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

### Response Example (404 Not Found)

```

[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Claims a device

Part of: [Registry](#)

**PUT** /registry/v2/devices/{deviceId}

Claim a device to a user. Before a device is claimed, it cannot complete login and any data sent to the ingestion endpoint will be ignored. Once a device is claimed, its data is stored and available to its owner.

When a device is claimed, it will be assigned a trackingID. This is the identifier in HERE Tracking that the data is associated with. Having a separate deviceId and trackingId means that devices can have their ownership transferred without having to create and install a new deviceId and deviceSecret.

### Request Parameters

Name	In	Type	Required	Description
deviceId	path	string (uuid)	<b>required</b>	The device ID provided when provisioning a device

Name	In	Type	Required	Description
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 200 OK Already claimed by that user
- 201 Created Created
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

- 404 Not Found Tracking id not found.

schema	scopes
<i>authBearer</i>	

## Response Example (200 OK)

```
{
  "trackingId": "HERE-6da0f871-b4eb-4800-90e6-4bae86a788d6"
}
```

## Response Example (201 Created)

```
{
  "trackingId": "HERE-6da0f871-b4eb-4800-90e6-4bae86a788d6"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
```

```
    "hereErrorCode": 400306
  }
}
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Retrieves a trackingId

Part of: *Registry*

GET /registry/v2/devices/{deviceId}

When provided with a deviceId, this endpoint returns the tracking ID for a previously claimed device.



## Request Parameters

Name	In	Type	Required	Description
deviceId	path	string (uuid)	<b>required</b>	The device ID provided when provisioning a device
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

## Responses

- 200 OK Successful
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

- 404 Not Found Tracking id not found.

### schema

### scopes

*authBearer*

## Response Example (200 OK)

```
{
  "trackingId": "HERE-6da0f871-b4eb-4800-90e6-4bae86a788d6"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

```
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Retrieves deviceId

Part of: [Registry](#)

GET /registry/v2/{trackingId}

When provided with a trackingId, this endpoint returns the deviceId for a previously claimed device.

## Request Parameters

Name	In	Type	Required	Description
trackingId	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 200 OK Successful
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

- 404 Not Found Tracking id not found.

### schema

### scopes

*authBearer*

## Response Example (200 OK)

```
{
  "deviceId": "string (uuid)"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

```
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Unclaims a device

Part of: [Registry](#)

**DELETE** /registry/v2/{trackingId}

Removes the association between the user and the device. The device is no longer able to generate data for the user and can now be registered by another user (or the same user again).

## Request Parameters

Name	In	Type	Required	Description
trackingId	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 204 No Content Successful (no content)
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

- 404 Not Found Tracking id not found.

### schema

### scopes

*authBearer*

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
```

```
"code": 401,
"id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
"message": "Invalid Device Authorization, timestamp doesn't match server time.",
"details": {
  "hereErrorCode": 401306
}
}
]
```

### Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

### Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Shadows

Shadows provide an effective way to manage configurations for devices that are only intermittently online.

Shadows are stored in HERE Tracking and contain two states of a device's configuration: The 'reported' state and the 'desired' state.

The **reported** state contains the settings that were sent when the device was last online.

The **desired** state contains the settings that will be sent to the device when the device next comes online.

**IMPORTANT** Devices should not communicate directly with this service but should instead send telemetry to the ingestion endpoint only. This telemetry data is used to update the 'reported' configuration for the device.

Ideally, applications should only write to the 'desired' configuration state and only read from 'reported' configuration state.

## Health status

Part of: *Shadows*

GET /shadows/health

### Responses

- 200 OK  
OK  
The service is performing as expected

### Response Example (200 OK)

```
"string"
```

## Service version

Part of: *Shadows*

GET /shadows/version

### Responses

- 200 OK  
OK  
Service returns its current version number

### Response Example (200 OK)

```
{  
  "servicename": "1.0.0"  
}
```

## Updates the device shadow

Part of: *Shadows*

PUT /shadows/v2/{trackingId}

Updates the device shadow that is stored in HERE Tracking.

The device shadow contains 'reported' and 'desired' configuration states for a device.

### Request

The body is a shadow object with either an update to the `desired` or `reported` configuration state. You cannot use the same request to update the `desired` and `reported` properties simultaneously. Instead, use separate requests for each type of configuration state.

## Response

The response body is a shadow object that shows the difference between the `reported` and the `desired` states. It contains properties that don't match across the two configurations.

The response example shows the response to the previous request example where the `desired` state was updated.

If all `reported` and `desired` properties match, the response object contains only the `trackingId` and `timestamp` properties.

A shadow object with either `desired` or `reported` state update. The same request can't update properties in both `reported` and `desired` state.

A shadow object with either `desired` or `reported` state update. The same request can't update properties in both `reported` and `desired` state.

type: object

## Properties

Name	Type	Required	Description
<code>desired</code>	object		
<code>reported</code>	object		

## Request Parameters

Name	In	Type	Required	Description
<code>body</code>	body	object		(no description)
<code>content-length</code>	header	number $x \geq 0 \mid x \leq 16384$	<b>required</b>	This is to ensure the size of the shadow is within the limit
<code>trackingId</code>	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
<code>x-request-id</code>	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

## Responses

- 200 OK  
Success

The response body is a shadow object which only contains the delta between the `reported` and `desired` state, otherwise the response format is same as in retrieve shadow. Response example shows the response for 'Desired state update' from request example (assume 'reported state update' has been



done previously). In case reported and desired state match response object will only have trackingId and timestamp properties.

- 201 Created Created
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

- 413 Request Entity Too Large

Payload Too Large

The request size exceeds the maximum size limit for payloads.

## schema

## scopes

*authBearer*

## Request Example

```
{
  "reported": {
    "payload": {
      "velocity": 100,
      "color": "blue"
    }
  }
}
```

## Response Example (200 OK)

```
{
  "desired": {
    "payload": "object",
    "system": {
      "stateVersion": "integer",
      "rate": {
        "sampleMs": "number",
        "sendMs": "number",
        "distanceM": "number"
      }
    }
  },
  "reported": {
    "payload": "object",
    "position": {
      "accuracy": "number",
```

```

    "alt": "integer",
    "altaccuracy": "integer",
    "confidence": "integer",
    "course": "integer",
    "floor": {
      "level": "number",
      "id": "string",
      "name": "string"
    },
    "lat": "number",
    "lng": "number",
    "satellitecount": "integer",
    "speed": "integer",
    "type": "string",
    "wlanccount": "integer"
  },
  "system": {
    "phoneNumber": "+491234567890",
    "client": {
      "manufacturer": "string",
      "model": "string",
      "firmware": "string",
      "platform": "string",
      "name": "string",
      "version": "string",
      "homenetwork": [
        {
          "mcc": "integer",
          "mnc": "integer",
          "sid": "integer",
          "nid": "integer"
        }
      ]
    }
  },
  "stateVersion": "integer"
}
}
}

```

## Response Example (201 Created)

```

{
  "desired": {
    "payload": "object",
    "system": {
      "stateVersion": "integer",
      "rate": {
        "sampleMs": "number",
        "sendMs": "number",
        "distanceM": "number"
      }
    }
  },
  "reported": {
    "payload": "object",
    "position": {
      "accuracy": "number",
      "alt": "integer",
      "altaccuracy": "integer",
      "confidence": "integer",
      "course": "integer",
      "floor": {
        "level": "number",
        "id": "string",
        "name": "string"
      }
    }
  }
}

```

```
    },
    "lat": "number",
    "lng": "number",
    "satellitecount": "integer",
    "speed": "integer",
    "type": "string",
    "wlanccount": "integer"
  },
  "system": {
    "phoneNumber": "+491234567890",
    "client": {
      "manufacturer": "string",
      "model": "string",
      "firmware": "string",
      "platform": "string",
      "name": "string",
      "version": "string",
      "homenetwork": [
        {
          "mcc": "integer",
          "mnc": "integer",
          "sid": "integer",
          "nid": "integer"
        }
      ]
    }
  },
  "stateVersion": "integer"
}
}
```

### Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

### Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (413 Request Entity Too Large)

```
[
  {
    "error": "Payload Too Large",
    "code": 413,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request size exceeds the maximum size limit for payloads.",
    "details": {
      "hereErrorCode": 413306
    }
  }
]
```

## Gets the shadow

Part of: *Shadows*

GET /shadows/v2/{trackingId}

NOTE: The shadow is only returned if the HERE Account token provided in the header allows read access.

## Request Parameters

Name	In	Type	Required	Description
trackingId	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 200 OK Successful
- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found Not found. No shadow exists for the requested trackingId.

## schema

## scopes

*authBearer*

## Response Example (200 OK)

```
{
  "desired": {
    "payload": "object",
    "system": {
      "stateVersion": "integer",
      "rate": {
        "sampleMs": "number",
        "sendMs": "number",
        "distanceM": "number"
      }
    }
  },
  "reported": {
    "payload": "object",
    "position": {
      "accuracy": "number",
      "alt": "integer",
      "altaccuracy": "integer",
      "confidence": "integer",
      "course": "integer",
      "floor": {
        "level": "number",
        "id": "string",
        "name": "string"
      },
      "lat": "number",
      "lng": "number",
      "satellitecount": "integer",
      "speed": "integer",
      "type": "string",
      "wlanccount": "integer"
    },
    "system": {
      "phoneNumber": "+491234567890",
      "client": {
        "manufacturer": "string",
        "model": "string",
        "firmware": "string",
        "platform": "string",
        "name": "string",
        "version": "string",
        "homenetwork": [
          {
            "mcc": "integer",
            "mnc": "integer",

```

```
        "sid": "integer",
        "nid": "integer"
      }
    ],
    "stateVersion": "integer"
  }
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
```

```

    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the
target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
}
]

```

## Clears the device shadow

Part of: *Shadows*

**DELETE** /shadows/v2/{trackingId}

NOTE: This does not 'delete' the shadow object, it removes all properties from the desired and reported objects.

### Request Parameters

Name	In	Type	Required	Description
trackingId	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

### Responses

- 204 No Content Successful (no content)
- 400 Bad Request
  - Bad request
  - The request object is in and incorrect format or has values that are invalid or out of range.
  - If available, further error details are provided in the response body.
- 401 Unauthorized
  - Unauthorized
  - The request did not provide correct authentication details
- 403 Forbidden
  - Forbidden
  - The account does not have the correct privileges
- 404 Not Found Not found. No shadow exists for the requested trackingId.

schema	scopes
<i>authBearer</i>	

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```



## Retrieves shadows in a batch

Part of: *Shadows*

POST /shadows/v2/batch

NOTE: Batch retrieval is limited to 20 devices.

string

HERE Account Id

type: string

### Request Parameters

Name	In	Type	Required	Description
body	body	object		(no description)
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

### Responses

- 200 OK  
Successful  
Response contains list of shadow objects wrapped with body and statusCode of each request.  
In case of error per each trackingId will have separate status code:
  - 403 - Forbidden
  - 404 - Device not found
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details

**schema**

**scopes**

*authBearer*

### Request Example

```
[
  "string"
]
```

```
]
```

## Response Example (200 OK)

```
[
  {
    "body": {
      "reported": {},
      "desired": {},
      "metadata": {}
    },
    "statusCode": 404
  }
]
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

Gets the desired or reported state for a single property

Part of: *Shadows*

GET /shadows/v2/{trackingId}/{state}/{selector\*}

Selector may be a JSON selector. If the selector is omitted, the entire desired object is returned.

The JSON selector can be nested i.e. payload/time/minutes

## Request Parameters

Name	In	Type	Required	Description
selector*	path	string	<b>required</b>	Name of the property to return
state	path	string, <i>enum</i> { desired, reported }	<b>required</b>	Desired or reported state to query
trackingId	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 200 OK

Successful

Content type will be text/plain or application/json depending on the type of the property. Requested property 'color' is a string

```
Content-Type: text/plain
red
```

Requested property is a position object

```
Content-Type: application/json
{
  "alt": "105",
  "accuracy": "18",
  "lng": "13.38480101",
  "lat": "52.5308544",
  "altaccuracy": "15"
}
```

- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

- 404 Not Found Not found. Shadow doesn't exist
- 422 Unprocessable Entity Property doesn't exist in shadow

schema

scopes

*authBearer*

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
```

```
"message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
  "details": {
    "hereErrorCode": 401306
  }
}
```

## Response Example (422 Unprocessable Entity)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Traces

A database of historical device positions and payloads. Every time telemetry is ingested into HERE Tracking, an entry is appended to the device's trace.

**IMPORTANT** Devices should not communicate directly with this service but should instead send telemetry to the ingestion endpoint only.

## Health status

Part of: [Traces](#)

GET /traces/health

### Responses

- 200 OK  
OK  
The service is performing as expected

## Response Example (200 OK)

```
"string"
```

## Service version

Part of: [Traces](#)

GET /traces/version

## Responses

- 200 OK  
OK  
Service returns its current version number

## Response Example (200 OK)

```
{  
  "servicename": "1.0.0"  
}
```

## Deletes the entire history of the device

Part of: *Traces*

DELETE /traces/v2/{trackingId}

NOTE: This deletes **traces and transitions**

## Request Parameters

Name	In	Type	Required	Description
trackingId	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

## Responses

- 204 No Content Successful (no content)
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found Tracking id not found.

schema

scopes

*authBearer*

### Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

### Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

### Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

### Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

```

    }
  }
]

```

## Gets the device trace

Part of: *Traces*

GET /traces/v2/{trackingId}

Gets all traces that were recorded within a specific time range.

You define the range with "before" and "after" timestamps. A successful response contains an array of traces that were recorded after the first timestamp and before the second.

Traces are returned as an array in descending order based on timestamp.

### Note:

To ensure a fast response, always provide both `before` and `after`.

If no values are supplied `after` defaults to 0, and `before` defaults to the current system time.

The `count` and `pageToken` parameters provide pagination for results where a large volume of data matches the given time range.

In this case, `count` is the number of records returned per page along with a `pageToken` header in the returned HTTP response. The `pageToken` indicates the next available page in the matching result set. To get the next page of records, submit `pageToken` as a query parameter in next request. The default number of records per page is 1000 which is also the maximum number of records per page.

In case of success the response body contains an array of trace samples between the given timestamps (`after` <= timestamp <= `before`).

## Request Parameters

Name	In	Type	Required	Description
<code>after</code>	query	number $x \geq 0$		Milliseconds elapsed since 1 January 1970 00:00:00 UTC. Valid range is from 0 to current time.
<code>before</code>	query	number $x \geq 0$		Milliseconds elapsed since 1 January 1970 00:00:00 UTC. Valid range is from 0 to current time.
<code>count</code>	query	integer $x \leq 1000$		Number of items returned per page
<code>filter</code>	query	boolean		Set this to <code>true</code> to have the returned trace passed through a Kalman smoothing filter. The default is <code>false</code> .
<code>last</code>	query	number $x \geq 1$		Number of trace samples ( $n \geq 1$ ).
<code>pageToken</code>	query	string		A page token that you can use to retrieve next page.
<code>trackingId</code>	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.



Name	In	Type	Required	Description
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting.  Must be a valid UUIDv4.

## Responses

- 200 OK  
Successful.  
The response body contains an array of trace samples between the given timestamps (after <= timestamp <= before).  
Samples are in descending order based on timestamp.
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found Tracking id not found.

schema	scopes
<i>authBearer</i>	

## Response Example (200 OK)

```

{
  "data": [
    {
      "timestamp": 1451425708571,
      "position": {
        "lat": "52.4988217",
        "lng": "13.35170005",
        "alt": "86",
        "accuracy": "25",
        "altaccuracy": "96"
      }
    },
    {
      "timestamp": 1451425708216,
      "position": {
        "lat": "52.4988217",
        "lng": "13.35170005",
        "alt": "86",

```

```
    "accuracy": "25",
    "altaccuracy": "96"
  }
},
"count": 1,
"pageToken": "1490376144514"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
```

```
"message": "Invalid Authorization, the request lacks valid authentication credentials for the target resource.",
  "details": {
    "hereErrorCode": 401306
  }
}
```

## Transitions

Use this API to access current and historical data about device transitions.

A transition event is created every time a device enters or exists an associated geofence. These events are stored in the transition log.

This log also includes details of events where a device 'almost' crossed a geofence boundary. Device positions determined through GPS, WiFi or other methods have a range of uncertainty about them. This uncertainty is represented as a radius around the recorded point showing the accuracy of the position.

These are times when the accuracy radius reported around a device intersects with the geofence boundary but where it is not possible to confirm what side of the geofence boundary the device is on. This returns those events as well as total transitions.

## Health status

Part of: [Transitions](#)

GET /transitions/health

### Responses

- 200 OK  
OK  
The service is performing as expected

### Response Example (200 OK)

```
"string"
```

## Service version

Part of: [Transitions](#)

GET /transitions/version

### Responses

- 200 OK  
OK  
Service returns its current version number

## Response Example (200 OK)

```
{
  "servicename": "1.0.0"
}
```

## Gets transitions for a device

Part of: [Transitions](#)

GET /transitions/v2/devices/{trackingId}

Gets all transitions that were recorded within a specific time range. This log also includes events when the accuracy radius of the reported position intersects with a geofence boundary.

You define the range with "before" and "after" timestamps. A successful response contains an array of transitions that were recorded after the first timestamp and before the second.

Transitions are returned as an array in descending order based on timestamp.

### Note:

To ensure a fast response, always provide both `before` and `after`.

If no values are supplied `after` defaults to 0, and `before` defaults to the current system time.

The `count` and `pageToken` parameters provide pagination for results where a large volume of data matches the given time range.

In this case, `count` is the number of records returned per page along with a `pageToken` header in the returned HTTP response. The `pageToken` indicates the next available page in the matching result set. To get the next page of records, submit `pageToken` as a query parameter in next request. The default number of records per page is 1000 which is also the maximum number of records per page.

## Request Parameters

Name	In	Type	Required	Description
<code>after</code>	query	number $x \geq 0$		Milliseconds elapsed since 1 January 1970 00:00:00 UTC. Valid range is from 0 to current time.
<code>before</code>	query	number $x \geq 0$		Milliseconds elapsed since 1 January 1970 00:00:00 UTC. Valid range is from 0 to current time.
<code>count</code>	query	integer $x \leq 100$		The number of items to return per page.
<code>pageToken</code>	query	string		A page token that you can use to retrieve next page.
<code>trackingId</code>	path	string	<b>required</b>	The ID HERE Tracking assigned to the device when it was claimed by a user.
<code>x-request-id</code>	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

## Responses

- 200 OK  
Successful  
The response body contains an array of transitions between the given timestamps (after  $\leq$  timestamp  $\leq$  before).  
Transitions are returned as an array in descending order based on timestamp.
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges
- 404 Not Found Tracking id not found.

schema

scopes

*authBearer*

## Response Example (200 OK)

```
{
  "data": [
    {
      "inOut": "PING_OUTSIDE_FENCE",
      "geofenceId": "e2f651ee-f196-4fa3-bf88-894dc131dea3",
      "trackingId": "HERE-871eb4c9-76f6-4e9d-bed7-fa114f793e83",
      "timestamp": 1499258184142,
      "notificationStatus": "SENT"
    },
    {
      "inOut": "PING_IN_FENCE",
      "geofenceId": "e2f651ee-f196-4fa3-bf88-894dc131dea3",
      "trackingId": "HERE-871eb4c9-76f6-4e9d-bed7-fa114f793e83",
      "timestamp": 1499258057035,
      "notificationStatus": "NOT_SENT"
    }
  ],
  "count": 2,
  "pageToken": "1234abcd"
}
```

## Response Example (400 Bad Request)

```
[
```

```
{
  "error": "Bad request",
  "code": 400,
  "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
  "message": "The request object is in and incorrect format or has values that are invalid or out
of range.",
  "details": {
    "hereErrorCode": 400306
  }
}
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Response Example (404 Not Found)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Authorization, the request lacks valid authentication credentials for the
target resource.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]
```

## Users

Use this service to manage users, groups and roles for the other HERE Tracking services.

## Health status

Part of: *Users*

GET /users/health

### Responses

- 200 OK  
OK  
The service is performing as expected

### Response Example (200 OK)

```
"string"
```

## Service version

Part of: *Users*

GET /users/version

### Responses

- 200 OK  
OK  
Service returns its current version number

### Response Example (200 OK)

```
{  
  "servicename": "1.0.0"  
}
```

## Gets all devices owned by a given user

Part of: *Users*

GET /users/v2/devices

Provides an array of the Tracking IDs for devices that the given user owns.

### Request Parameters

Name	In	Type	Required	Description
count	query	integer x ≤ 100		The number of items to return per page.

Name	In	Type	Required	Description
pageToken	query	string		A page token that you can use to retrieve next page.
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

## Responses

- 200 OK  
Success  
The search was performed and any results were returned.
- 400 Bad Request  
Bad request  
The request object is in and incorrect format or has values that are invalid or out of range.  
If available, further error details are provided in the response body.
- 401 Unauthorized  
Unauthorized  
The request did not provide correct authentication details
- 403 Forbidden  
Forbidden  
The account does not have the correct privileges

schema	scopes
<i>authBearer</i>	

## Response Example (200 OK)

```
{
  "data": [
    {
      "trackingId": "string",
      "shadow": {
        "desired": {
          "payload": "object",
          "system": {
            "stateVersion": "integer",
            "rate": {
              "sampleMs": "number",
              "sendMs": "number",
              "distanceM": "number"
            }
          }
        }
      },
      "reported": {
        "payload": "object",
        "position": {
          "accuracy": "number",
          "alt": "integer",

```



```

    "altaccuracy": "integer",
    "confidence": "integer",
    "course": "integer",
    "floor": {
      "level": "number",
      "id": "string",
      "name": "string"
    },
    "lat": "number",
    "lng": "number",
    "satellitecount": "integer",
    "speed": "integer",
    "type": "string",
    "wlancount": "integer"
  },
  "system": {
    "phoneNumber": "+491234567890",
    "client": {
      "manufacturer": "string",
      "model": "string",
      "firmware": "string",
      "platform": "string",
      "name": "string",
      "version": "string",
      "homenetwork": []
    },
    "stateVersion": "integer"
  }
}
}
}
},
"pageToken": "string",
"count": "integer"
}

```

### Response Example (400 Bad Request)

```

[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]

```

### Response Example (401 Unauthorized)

```

[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]

```

```
]
```

## Response Example (403 Forbidden)

```
[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Gets a valid access token

Part of: *Users*

**POST** /users/v2/login

Use this to get a valid access token for a given HERE Account email and password.

An object containing the email address and password of the user to be logged in.

An object containing the email address and password of the user to be logged in.

type: object

[Required properties: *email*, *password*]

### Properties

Name	Type	Required	Description
email	string (at least 1 chars)	<b>required</b>	The email address of the user
password	string (at least 1 chars)	<b>required</b>	The password of the user

### Request Parameters

Name	In	Type	Required	Description
body	body	object		(no description)
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

### Responses

- 200 OK  
Success  
The login was performed and a valid access token was returned.

- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

## Request Example

```
{
  "email": "string",
  "password": "string"
}
```

## Response Example (200 OK)

```
{
  "userId": "HERE-12345678-9abc-4def-0123-456789abcdef",
  "accessToken": "h1.2...EyS_b6g3uDcKnpknGWQ",
  "expiresIn": 86399,
  "refreshToken": "5qlkthf8mgl5lsrn8br5vdisco"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {

```

```

    "hereErrorCode": 401306
  }
}
]
```

## Response Example (403 Forbidden)

```

[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]
```

## Gets a valid access token given a refreshToken

Part of: *Users*

**POST** /users/v2/refresh

Use this to get a valid access token for a given HERE Account access token and refresh token.

An object containing the email address and password of the user to be logged in.

An object containing the email address and password of the user to be logged in.

type: object

[Required properties: *accessToken*, *refreshToken*]

### Properties

Name	Type	Required	Description
accessToken	string (at least 1 chars)	<b>required</b>	The access token obtained through a previous login
refreshToken	string (at least 1 chars)	<b>required</b>	The refresh token obtained through a previous login

### Request Parameters

Name	In	Type	Required	Description
body	body	object		(no description)
x-request-id	header	string (uuid)		ID used for correlating requests within HERE Tracking. Used for logging and error reporting. Must be a valid UUIDv4.

### Responses

- 200 OK

Success

The login was performed and a valid access token was returned.

- 400 Bad Request

Bad request

The request object is in and incorrect format or has values that are invalid or out of range.

If available, further error details are provided in the response body.

- 401 Unauthorized

Unauthorized

The request did not provide correct authentication details

- 403 Forbidden

Forbidden

The account does not have the correct privileges

## Request Example

```
{
  "accessToken": "string",
  "refreshToken": "string"
}
```

## Response Example (200 OK)

```
{
  "userId": "HERE-12345678-9abc-4def-0123-456789abcdef",
  "accessToken": "h1.2...Eys_b6g3uDcKnpknGWQ",
  "expiresIn": 86399,
  "refreshToken": "5qlkthf8mgl5lsrn8br5vdisco"
}
```

## Response Example (400 Bad Request)

```
[
  {
    "error": "Bad request",
    "code": 400,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The request object is in and incorrect format or has values that are invalid or out of range.",
    "details": {
      "hereErrorCode": 400306
    }
  }
]
```

## Response Example (401 Unauthorized)

```
[
  {
    "error": "Unauthorized",
```

```

    "code": 401,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "Invalid Device Authorization, timestamp doesn't match server time.",
    "details": {
      "hereErrorCode": 401306
    }
  }
]

```

## Response Example (403 Forbidden)

```

[
  {
    "error": "Forbidden",
    "code": 403,
    "id": "5771b3d4-95ae-4959-ac63-fbaa3d5d06ee",
    "message": "The account does not have the correct privileges.",
    "details": {
      "hereErrorCode": 403306
    }
  }
]

```

## Definitions

---

The following topics provide details of objects that hold data types consumed and produced by operations. These data types can be primitives, arrays or models.

### bt\_locate

Bluetooth measurement. In addition to `rss`, one of `mac`, `eddystoneId`, or `iBeaconId` is required.

type: object

[Required properties: `rss`]

### Properties

Name	Type	Required	Description
<code>timestamp</code>	string (date-time)		Time of the measurement (UTC)
<code>rss</code>	integer $x \geq -128 \mid x \leq 0$	<b>required</b>	Received signal strength (dBm) at the terminal
<code>mac</code>	string		The MAC address of the Bluetooth access point. MAC-48 address with colon (:) or hyphen (-) separators, upper or lower case hex digits. For privacy reasons positioning based on a single Bluetooth AP is not possible; there has to be at least one other matching wlan or bluetooth access point. Either <code>mac</code> , <code>eddystoneId</code> , or <code>iBeaconId</code> is required.
<code>eddystoneId</code>	string $x \geq 24 \mid x \leq 24$		Full Identifier as Base64 string. A combination of 10-byte Namespace component and a 6-byte Instance component

Name	Type	Required	Description
iBeaconId	string $x \geq 28 \mid x \leq 28$		Full Identifier as Base64 string. A combination of 16-byte UUID + 2-byte major + 2-byte minor

### Example

```
{
  "timestamp": "string (date-time)",
  "rss": "integer",
  "mac": "string",
  "edystoneId": "string",
  "iBeaconId": "string"
}
```

## cell\_cdma\_locate

CDMA measurement

type: object

[Required properties: *sid*, *nid*, *bsid*]

### Properties

Name	Type	Required	Description
sid	integer $x \geq 1 \mid x \leq 32767$	<b>required</b>	System Id, SID
nid	integer $x \geq 0 \mid x \leq 65535$	<b>required</b>	Network Id, NID
rz	integer $x \geq 0 \mid x \leq 4095$		Registration zone (Optional)
bsid	integer $x \geq 0 \mid x \leq 65535$	<b>required</b>	Base Station ID, BID
pnoffset	integer $x \geq 0 \mid x \leq 511$		Pseudonoise offset (Optional, you must specify a value for this item when you specify a value for channel)
channel	integer $x \geq 0 \mid x \leq 2047$		CDMA channel frequency (Optional, you must specify a value for this item when you specify a value for pnoffset)
pilotpower	integer $x \geq -142 \mid x \leq -49$		Pilot Power (dBm) (Optional). If Pilot Power is not available directly, it needs to be calculated from Total Power in the band and Pilot Strength with respect to the Total Power. Pilot power less than -142dBm should be mapped to -142. Pilot power greater than -49dBm should be mapped to -49.
timestamp	string (date-time)		Time of the measurement (UTC)
nmr	object[]		CDMA Network measurements (Optional)

### Example

```
{
  "sid": "integer",
  "nid": "integer",
  "rz": "integer",
  "bsid": "integer",
  "pnoffset": "integer",
}
```

```

"channel": "integer",
"pilotpower": "integer",
"timestamp": "string (date-time)",
"nmr": [
  {
    "pnoffset": "integer",
    "channel": "integer",
    "bsid": "integer",
    "pilotpower": "integer"
  }
]
}

```

## cell\_cdma\_nmr

CDMA Network measurement

type: object

[Required properties: *pnoffset*, *channel*]

### Properties

Name	Type	Required	Description
pnoffset	integer $x \geq 0 \mid x \leq 511$	<b>required</b>	Pseudonoise offset
channel	integer $x \geq 0 \mid x \leq 2047$	<b>required</b>	CDMA channel frequency
bsid	integer $x \geq 0 \mid x \leq 65535$		Base Station ID (Optional)
pilotpower	integer $x \geq -142 \mid x \leq -49$		Pilot Power (dBm) (Optional). If Pilot Power is not available directly, it needs to be calculated from Total Power in the band and Pilot Strength with respect to the Total Power. Pilot power less than -142dBm should be mapped to -142. Pilot power greater than -49dBm should be mapped to -49.

### Example

```

{
  "pnoffset": "integer",
  "channel": "integer",
  "bsid": "integer",
  "pilotpower": "integer"
}

```

## cell\_gsm\_locate

GSM measurement

type: object

[Required properties: *mcc*, *mnc*, *lac*, *cid*]



## Properties

Name	Type	Required	Description
mcc	integer $x \geq 200 \mid x \leq 999$	required	Mobile Country Code
mnc	integer $x \geq 0 \mid x \leq 999$	required	Mobile Network Code
lac	integer $x \geq 1 \mid x \leq 65535$	required	Location Area Code
cid	integer $x \geq 0 \mid x \leq 65535$	required	Cell Identifier, 16 bits. Mcc+mnc+lac+cid uniquely identifies the GSM cell.
ta	integer $x \geq 0 \mid x \leq 63$		Timing advance (Optional). Expressed in the units of GSM bits equaling to $48/13 \mu s \sim 1107$ meters.
rxlevel	integer $x \geq -110 \mid x \leq -25$		Received Signal power (dBm) (Optional). Power less than -110dBm should be mapped to -110. Power greater than -25dBm should be mapped to -25.
timestamp	string (date-time)		Time of the measurement (UTC)
nmr	object[]		Network measurements (Optional)

## Example

```
{
  "mcc": "integer",
  "mnc": "integer",
  "lac": "integer",
  "cid": "integer",
  "ta": "integer",
  "rxlevel": "integer",
  "timestamp": "string (date-time)",
  "nmr": [
    {
      "bsic": "integer",
      "bcch": "integer",
      "rxlevel": "integer",
      "lac": "integer",
      "cid": "integer"
    }
  ]
}
```

## cell\_gsm\_nmr

GSM Network measurement

type: object

[Required properties: *bsic*, *bcch*]

## Properties

Name	Type	Required	Description
bsic	integer $x \geq 0 \mid x \leq 63$	required	Base Station Identity Code (for instance, color code)

Name	Type	Required	Description
bcch	integer $x \geq 0 \mid x \leq 1023$	<b>required</b>	Broadcast Control Channel (Synonymous to ARFCN = Absolute Radio Frequency Channel)
rxlevel	integer $x \geq -110 \mid x \leq -25$		Received Signal power (dBm) (Optional). Power less than -110dBm should be mapped to -110. Power greater than -25dBm should be mapped to -25.
lac	integer $x \geq 1 \mid x \leq 65535$		Location Area Code (Optional)
cid	integer $x \geq 0 \mid x \leq 65535$		Cell Identifier (Optional)

## Example

```
{
  "bsic": "integer",
  "bcch": "integer",
  "rxlevel": "integer",
  "lac": "integer",
  "cid": "integer"
}
```

## cell\_lte\_locate

LTE measurement

type: object

[Required properties: *mcc*, *mnc*, *cid*]

## Properties

Name	Type	Required	Description
mcc	integer $x \geq 200 \mid x \leq 999$	<b>required</b>	Mobile Country Code
mnc	integer $x \geq 0 \mid x \leq 999$	<b>required</b>	Mobile Network Code
tac	integer $x \geq 0 \mid x \leq 65535$		Tracking Area Code (Optional)
cid	integer $x \geq 0 \mid x \leq 268435455$	<b>required</b>	E-UTRA Cell Identifier, 28 bits (20 bits eNodeB and 8 bits Cell id). Mcc+mnc+cid uniquely identifies the LTE cell, tac is optional.
ta	integer $x \geq 0 \mid x \leq 1282$		Timing Advance (Optional). Expressed in the units of 16Ts ( <b>16 Basic time units</b> ) = $16/(150002048)$ seconds ~ 156meters. For reference see TS 36.213 and 36.211.
rsrp	integer $x \geq -140 \mid x \leq -44$		Reference Signal Received Power = RSRP (dBm) (Optional, you must specify a value for this item when you specify a value for rsrq). Power less than -140dBm should be mapped to -140. Power greater than -44dBm should be mapped to -44.
rsrq	number $x \geq -19.5 \mid x \leq -3$		Reference Signal Received Quality = RSRQ (dB) (Optional). Values less than -19.5dB should be mapped to -19.5, and values greater than -3dB should be mapped to -3dB.
timestamp	string (date-time)		Time of the measurement (UTC)
nmr	object[]		LTE Network measurements (Optional)

## Example

```
{
  "mcc": "integer",
  "mnc": "integer",
  "tac": "integer",
  "cid": "integer",
  "ta": "integer",
  "rsrp": "integer",
  "rsrq": "number",
  "timestamp": "string (date-time)",
  "nmr": [
    {
      "pci": "integer",
      "earfcn": "integer",
      "cid": "integer",
      "rsrp": "integer",
      "rsrq": "number"
    }
  ]
}
```

## cell\_lte\_nmr

LTE Network measurement

type: object

[Required properties: *pci*, *earfcn*]

## Properties

Name	Type	Required	Description
<i>pci</i>	integer $x \geq 0 \mid x \leq 503$	<b>required</b>	Physical Cell Identity
<i>earfcn</i>	integer $x \geq 0 \mid x \leq 65535$	<b>required</b>	Evolved Absolute Radio Frequency Channel
<i>cid</i>	integer $x \geq 0 \mid x \leq 268435455$		E-UTRA Cell Identifier (Optional)
<i>rsrp</i>	integer $x \geq -140 \mid x \leq -44$		Reference Signal Received Power = RSRP (dBm) (Optional, you must specify a value for this item when you specify a value for <i>rsrq</i> ). Power less than -140dBm should be mapped to -140. Power greater than -44dBm should be mapped to -44.
<i>rsrq</i>	number $x \geq -19.5 \mid x \leq -3$		Reference Signal Received Quality = RSRQ (dB) (Optional). Values less than -19.5dB should be mapped to -19.5, and values greater than -3dB should be mapped to -3dB.

## Example

```
{
  "pci": "integer",
  "earfcn": "integer",
  "cid": "integer",
  "rsrp": "integer",
  "rsrq": "number"
}
```

## cell\_tdscdma\_locate

TD-SCDMA measurement

type: object

[Required properties: *mcc*, *mnc*, *cid*]

### Properties

Name	Type	Required	Description
mcc	integer $x \geq 200 \mid x \leq 999$	<b>required</b>	Mobile Country Code
mnc	integer $x \geq 0 \mid x \leq 999$	<b>required</b>	Mobile Network Code
lac	integer $x \geq 1 \mid x \leq 65535$		Location Area Code (Optional)
cid	integer $x \geq 0 \mid x \leq 268435455$	<b>required</b>	UTRAN Cell Identifier, 28 bits (12 bits RNC and 16 bits Cell id). Mcc +mnc+cid uniquely identifies the TDSCDMA cell, lac is optional.
ta	integer $x \geq 0 \mid x \leq 1530$		Timing advance (Optional). Round-Trip distance presented in the units of $4*c/7.68e6 \sim 156$ meters. That is, the scaling factor is 4 times the chip length at chip rate of 7.68 Mchips/s. Note that at chip rates 1.28 Mchips/s and 3.84 Mchips/s you need to scale according to chip length of 7.68 Mchips/s, that is, multiply by 6 or 2 if needed.
timestamp	string (date-time)		Time of the measurement (UTC)
nmr	object[]		Network measurements (Optional). Maximum of 8 uarfcn times maximum of 32 psc.

### Example

```
{
  "mcc": "integer",
  "mnc": "integer",
  "lac": "integer",
  "cid": "integer",
  "ta": "integer",
  "timestamp": "string (date-time)",
  "nmr": [
    {
      "uarfcn": "integer",
      "cellparams": "integer",
      "cid": "integer",
      "rscp": "integer",
      "pathloss": "integer"
    }
  ]
}
```

## cell\_tdscdma\_nmr

TD-SCDMA Network measurement

type: object

[Required properties: *uarfcn*, *cellparams*]

## Properties

Name	Type	Required	Description
<i>uarfcn</i>	integer $x \geq 0 \mid x \leq 16383$	<b>required</b>	Carrier frequency of a UTRA-TDD Serving Cell
<i>cellparams</i>	integer $x \geq 0 \mid x \leq 127$	<b>required</b>	Cell Parameters ID (CDMA Spreading Code ID)
<i>cid</i>	integer $x \geq 0 \mid x \leq 268435455$		Cell Identifier (uc-id) (Optional)
<i>rscp</i>	integer $x \geq -120 \mid x \leq -25$		Received Signal Code Power = RSCP (dBm) (Optional, you must specify a value for this item when you specify a value for <i>pathloss</i> ). Power less than -120dBm should be mapped to -120. Power greater than -25dBm should be mapped to -25.
<i>pathloss</i>	integer $x \geq 46 \mid x \leq 158$		UTRAN path loss (dB) (Optional, you must specify a value for this item when you specify a value for <i>rscp</i> ).

## Example

```
{
  "uarfcn": "integer",
  "cellparams": "integer",
  "cid": "integer",
  "rscp": "integer",
  "pathloss": "integer"
}
```

## cell\_wcdma\_locate

WCDMA measurement

type: object

[Required properties: *mcc*, *mnc*, *cid*]

## Properties

Name	Type	Required	Description
<i>mcc</i>	integer $x \geq 200 \mid x \leq 999$	<b>required</b>	Mobile Country Code
<i>mnc</i>	integer $x \geq 0 \mid x \leq 999$	<b>required</b>	Mobile Network Code
<i>lac</i>	integer $x \geq 1 \mid x \leq 65535$		Location Area Code (Optional)
<i>cid</i>	integer $x \geq 0 \mid x \leq 268435455$	<b>required</b>	UTRAN Cell Identifier, 28 bits (12 bits RNC and 16 bits Cell id). Mcc +mnc+cid uniquely identifies the WCDMA cell, lac is optional.
<i>timestamp</i>	string (date-time)		Time of the measurement (UTC)
<i>nmr</i>	object[]		Network measurements (Optional). Maximum of 8 <i>uarfcndl</i> times maximum of 32 psc.

## Example

```
{
  "mcc": "integer",
  "mnc": "integer",
  "lac": "integer",
  "cid": "integer",
  "timestamp": "string (date-time)",
  "nmr": [
    {
      "uarfcndl": "integer",
      "psc": "integer",
      "cid": "integer",
      "rscp": "integer",
      "pathloss": "integer"
    }
  ]
}
```

## cell\_wcdma\_nmr

WCDMA Network measurement

type: object

[Required properties: *uarfcndl*, *psc*]

## Properties

Name	Type	Required	Description
uarfcndl	integer $x \geq 0 \mid x \leq 16383$	<b>required</b>	Downlink frequency of a UTRA-FDD Serving Cell
psc	integer $x \geq 0 \mid x \leq 511$	<b>required</b>	Primary Scrambling Code (Primary CPICH, Primary Control Pilot Channel)
cid	integer $x \geq 0 \mid x \leq 268435455$		UTRAN Cell Identifier (uc-id) (Optional)
rscp	integer $x \geq -120 \mid x \leq -25$		Received Signal Code Power = RSCP (dBm) (Optional). Power less than -120dBm should be mapped to -120. Power greater than -25dBm should be mapped to -25.
pathloss	integer $x \geq 46 \mid x \leq 158$		UTRAN path loss (dB) (Optional).

## Example

```
{
  "uarfcndl": "integer",
  "psc": "integer",
  "cid": "integer",
  "rscp": "integer",
  "pathloss": "integer"
}
```

## circle

A circular geofence

type: object

## Example

```
{
  "definition": {
    "center": {
      "lng": "13.38490035",
      "lat": "52.5308398"
    },
    "radius": 100
  },
  "name": "Berlin Office",
  "type": "circle",
  "description": "An area in berlin"
}
```

## claimedDevice

### Properties

Name	Type	Required	Description
trackingId	string		HERE Account Id

### Example

```
{
  "trackingId": "HERE-6da0f871-b4eb-4800-90e6-4bae86a788d6"
}
```

## client\_info

Information about the client that took the measurements

type: object

[Required properties: *manufacturer*, *model*, *name*, *version*]

### Properties

Name	Type	Required	Description
manufacturer	string (2 to 50 chars)	<b>required</b>	Manufacturer of the device (hardware)
model	string (1 to 50 chars)	<b>required</b>	Model of the device (hardware)
firmware	string (1 to 150 chars)		Device firmware version information
platform	string (3 to 50 chars)		Software platform information of the device, for example operating system name and version.
name	string (3 to 50 chars)	<b>required</b>	Name of the client software accessing the HERE API

Name	Type	Required	Description
version	string (3 to 13 chars)	<b>required</b>	Version of the client software in format X.Y.Z, where X [0..255] is a major, Y [0..255] is a minor, and Z [0..65535] is a build version number. Increase the version/build number for each release of the client.

## Example

```
{
  "manufacturer": "string",
  "model": "string",
  "firmware": "string",
  "platform": "string",
  "name": "string",
  "version": "string"
}
```

## country

Indicates in which country the WLAN APs are located (in case cell data is not present in radio\_observations)

type: object

[Required properties: *mcc*]

## Properties

Name	Type	Required	Description
mcc	integer $x \geq 200 \mid x \leq 999$	<b>required</b>	Mobile Country Code

## Example

```
{
  "mcc": "integer"
}
```

## geofence

## Properties

Name	Type	Required	Description
name	string		A human-readable name for the geofence.
description	string		A description of the area that the geofence encloses and the purpose of the geofence.
type	string, <i>enum</i> { circle, polygon }	<b>required discriminator</b>	The type of geofence shape. A geofence can be a circle or a polygon.
definition	object	<b>required</b>	



## Example

```
{
  "name": "Berlin Office",
  "type": "circle",
  "description": "An area in berlin",
  "definition": {
    "center": {
      "lng": "13.38490035",
      "lat": "52.5308398"
    },
    "radius": 100
  }
}
```

## geofenceUpdate

### Properties

Name	Type	Required	Description
name	string		A human-readable name for the geofence.
description	string		A description of the area that the geofence encloses and the purpose of the geofence.
type	string	<b>discriminatio</b>	The type of geofence shape. A geofence can be a circle or a polygon.
definition	object		

## Example

```
{
  "name": "Berlin Office",
  "type": "circle",
  "description": "An area in berlin",
  "definition": {
    "center": {
      "lng": "13.38490035",
      "lat": "52.5308398"
    },
    "radius": 100
  }
}
```

## observations\_locate

Object wrapping the location data submitted in a request for a position. At least one of gsm, wcdma, tdsdcdma, lte, cdma, wlan, or bt elements is required.

type:

## Properties

Name	Type	Required	Description
client	object		Information about the client that took the measurements
gsm	object[]		GSM cells (GERAN)
wcdma	object[]		WCDMA cells (UTRA-FDD, 3G UMTS)
tdscdma	object[]		TD-SCDMA cell (UTRA-TDD, 3G UMTS TDD)
lte	object[]		LTE cells (E-UTRA, 4G)
cdma	object[]		CDMA cells
wlan	object[]		WLAN access points
bt	object[]		Bluetooth access points

## Example

```
{
  "client": {
    "manufacturer": "string",
    "model": "string",
    "firmware": "string",
    "platform": "string",
    "name": "string",
    "version": "string"
  },
  "gsm": [
    {
      "mcc": "integer",
      "mnc": "integer",
      "lac": "integer",
      "cid": "integer",
      "ta": "integer",
      "rxlevel": "integer",
      "timestamp": "string (date-time)",
      "nmr": []
    }
  ],
  "wcdma": [],
  "tdscdma": [],
  "lte": [],
  "cdma": [],
  "wlan": [],
  "bt": []
}
```

## polygon

A polygonal geofence

type: object

## Example

```
{
  "definition": {
    "center": {
```

```

    "lng": "13.38490035",
    "lat": "52.5308398"
  },
  "radius": 100
},
"name": "Berlin Office",
"type": "circle",
"description": "An area in berlin"
}

```

## position\_floor

The building where the measurements were taken

type: object

[Required properties: *id*, *name*, *level*]

### Properties

Name	Type	Required	Description
level	number $x \geq -999 \mid x \leq 999$	<b>required</b>	The floor in the building in integer format
id	string $x \geq 1 \mid x \leq 100$	<b>required</b>	The building id
name	string $x \geq 1 \mid x \leq 255$	<b>required</b>	The building name

### Example

```

{
  "level": "number",
  "id": "string",
  "name": "string"
}

```

## provisionedAndClaimedDevice

### Example

```

{
  "deviceId": "4cdafa38-fdf9-474c-8eb3-72ea276a163a",
  "deviceSecret": "AGIhZGmU1jJS-H1ZfAZuh5U9cswyqquWVrbOKGwKN9s",
  "trackingId": "HERE-6da0f871-b4eb-4800-90e6-4bae86a788d6"
}

```

## provisionedDevice

A JSON object containing the newly created device credentials

type: object

## Properties

Name	Type	Required	Description
deviceId	string (uuid)		UUID v.4.0
deviceSecret	string		The newly created device secret. Valid credentials are the combination of a secret and ID

## Example

```
{
  "deviceId": "4cdafa38-fdf9-474c-8eb3-72ea276a163a",
  "deviceSecret": "AGIhZGmU1jJS-H1ZFZuh5U9cswyqquWVrbOKGwKN9s"
}
```

## registerRequestBody

### Properties

Name	Type	Required	Description
type	string, enum { SMS, webhook }	<b>discriminator</b>	The type of notification channel to be created
url	string		A URL for webhook notifications capable of receiving POST requests
phone	string		A phone number for SMS notifications validated against E.164 international phone number format.

## Example

```
{
  "type": "webhook",
  "url": "https://example.com/call/this/web/hook"
}
```

## requestAddUser

string

HERE Account Id

type: string

## Example

```
[
  "HERE-144bca42-292b-4147-b59e-c548b0bd4005"
]
```

## requestCreateDeviceLicenses

### Properties

Name	Type	Required	Description
count	integer $x \geq 1 \mid x \leq 1000000$	<b>required</b>	Number of device credentials requested

### Example

```
{
  "count": 10
}
```

## requestLogin

An object containing the email address and password of the user to be logged in.

type: object

[Required properties: *email*, *password*]

### Properties

Name	Type	Required	Description
email	string (at least 1 chars)	<b>required</b>	The email address of the user
password	string (at least 1 chars)	<b>required</b>	The password of the user

### Example

```
{
  "email": "string",
  "password": "string"
}
```

## requestNotify

### Properties

Name	Type	Required	Description
text	string	<b>required</b>	

### Example

```
{
  "text": "SMS text"
}
```

## requestRefresh

An object containing the email address and password of the user to be logged in.

type: object

[Required properties: *accessToken*, *refreshToken*]

### Properties

Name	Type	Required	Description
accessToken	string (at least 1 chars)	<b>required</b>	The access token obtained through a previous login
refreshToken	string (at least 1 chars)	<b>required</b>	The refresh token obtained through a previous login

### Example

```
{
  "accessToken": "string",
  "refreshToken": "string"
}
```

## requestRetrieveBatch

string

HERE Account Id

type: string

### Example

```
[
  "string"
]
```

## requestShadow

A shadow object with either desired or reported state update. The same request can't update properties in both reported and desired state.

type: object

### Properties

Name	Type	Required	Description
desired	object		
reported	object		

## Example

```
{
  "reported": {
    "payload": {
      "velocity": 100,
      "color": "blue"
    }
  }
}
```

# requestTelemetry

object

## Properties

Name	Type	Required	Description
timestamp	integer $x \geq 0 \mid x \leq 4102448400000$		Milliseconds elapsed since 1 January 1970 00:00:00 UTC.
payload	object		An application-specific JSON object. HERE Tracking doesn't read this object but you can use it to pass information to other applications. The maximum size is 1KB
system	object		<p>Values within the device configuration that are used by HERE Tracking for various application flows.</p> <p>This object can be read by HERE Tracking whereas the content of the payload is opaque.</p> <p>stateVersion can be provided by the Device, denoting the version of the last known desired state seen by the Device.</p>
position	object		The reported or determined location of the device
scan	object		Radio measurements used for positioning or radio map contribution.

## Example

```
[
  {
    "timestamp": "integer",
    "payload": "object",
    "system": {
      "phoneNumber": "+491234567890",
      "client": {
        "manufacturer": "string",
        "model": "string",
        "firmware": "string",
        "platform": "string",
        "name": "string",
        "version": "string",
        "homenetwork": []
      },
      "stateVersion": "integer"
    },
    "position": {
      "accuracy": "number",
```

```

    "alt": "integer",
    "altaccuracy": "integer",
    "confidence": "integer",
    "course": "integer",
    "floor": {
      "level": "number",
      "id": "string",
      "name": "string"
    },
    "lat": "number",
    "lng": "number",
    "satellitecount": "integer",
    "speed": "integer",
    "type": "string",
    "wlanccount": "integer"
  },
  "scan": {
    "bt": [],
    "country": {
      "mcc": "integer"
    },
    "gsm": [],
    "wcdma": [],
    "tdscdma": [],
    "lte": [],
    "cdma": [],
    "wlan": []
  }
}
]

```

## resolvedPosition

### Properties

Name	Type	Required	Description
timestamp	integer $x \geq 0 \mid x \leq 4102448400000$		Milliseconds elapsed since 1 January 1970 00:00:00 UTC.
payload	object		An application-specific JSON object. HERE Tracking doesn't read this object but you can use it to pass information to other applications. The maximum size is 1KB
position	object	<b>required</b>	The reported or determined location of the device

### Example

```

{
  "position": {
    "lat": 52.530878,
    "lng": 13.384696,
    "accuracy": 3,
    "floor": {
      "level": 2,
      "id": "DM_15383",
      "name": "HERE Berlin 1"
    }
  },
  "timestamp": 1456344677000,
  "payload": {

```



```

    "temperature": 273,
    "any": "fantastic"
  }
}

```

## responseCreateDeviceLicenses

### Properties

Name	Type	Required	Description
jobId	string	<b>required</b>	ID identifying this job. Retain for future use. Valid for 24 hours after {now}.

### Example

```

[
  {
    "jobId": "344a17a4-1b19-4420-bb6f-8400b87071fd"
  }
]

```

## responseCreateGeofence

### Properties

Name	Type	Required	Description
id	string (uuid)	<b>required</b>	UUID v.4.0

### Example

```

{
  "id": "0d994f31-ceea-42e4-96a5-4484585c3802"
}

```

## responseJobResults

### Example

```

{
  "data": [
    {
      "deviceId": "d34d8c7f-6bd5-496a-edef-7bf2395aa456",
      "deviceSecret": "qerjpsdujnewppqnqefvli"
    },
    {
      "deviceId": "c6a22c91-c185-474c-9970-5eea445d92ac",
      "deviceSecret": "xvbnm,do0e,md;ffgdsle,d"
    }
  ],
  "count": 2,
}

```

```
"pageToken": "1490376144514"
}
```

## responseJobStatus

### Properties

Name	Type	Required	Description
status	string, <i>enum</i> { started, complete }	<b>required</b>	The status of the requested job. May be "started" or "complete". When status is "complete", results may be downloaded.
percent	number $x \geq 0 \mid x \leq 100$	<b>required</b>	The percentage of the job that was completed at the time of the request.

### Example

```
{
  "status": "started",
  "percent": 10
}
```

## responseListDevices

### Example

```
{
  "data": [
    {
      "trackingId": "string",
      "shadow": {
        "desired": {
          "payload": "object",
          "system": {
            "stateVersion": "integer",
            "rate": {
              "sampleMs": "number",
              "sendMs": "number",
              "distanceM": "number"
            }
          }
        }
      }
    },
    {
      "reported": {
        "payload": "object",
        "position": {
          "accuracy": "number",
          "alt": "integer",
          "altaccuracy": "integer",
          "confidence": "integer",
          "course": "integer",
          "floor": {
            "level": "number",
            "id": "string",
            "name": "string"
          }
        }
      },
      "lat": "number",
      "lng": "number",
    }
  ]
}
```

```

        "satellitecount": "integer",
        "speed": "integer",
        "type": "string",
        "wlancount": "integer"
    },
    "system": {
        "phoneNumber": "+491234567890",
        "client": {
            "manufacturer": "string",
            "model": "string",
            "firmware": "string",
            "platform": "string",
            "name": "string",
            "version": "string",
            "homenetwork": []
        },
        "stateVersion": "integer"
    }
}
    }
}
    },
    "pageToken": "string",
    "count": "integer"
}

```

## responseLogin

### Properties

Name	Type	Required	Description
userId	string		HERE Account Id
accessToken	string		
expiresIn	integer		
refreshToken	string		

### Example

```

{
  "userId": "HERE-12345678-9abc-4def-0123-456789abcdef",
  "accessToken": "h1.2...EyS_b6g3uDcKnpknGWQ",
  "expiresIn": 86399,
  "refreshToken": "5qlkthf8mgl5lsrn8br5vdisco"
}

```

## responseRetrieveBatch

object

### Properties

Name	Type	Required	Description
body	object		The data that Shadows persists for each Device.

Name	Type	Required	Description
statusCode	integer		

## Example

```
[
  {
    "body": {
      "reported": {},
      "desired": {},
      "metadata": {}
    },
    "statusCode": 404
  }
]
```

## responseShadow

The data that Shadows persists for each Device.

type: object

## Properties

Name	Type	Required	Description
desired	object		
reported	object		

## Example

```
{
  "desired": {
    "payload": "object",
    "system": {
      "stateVersion": "integer",
      "rate": {
        "sampleMs": "number",
        "sendMs": "number",
        "distanceM": "number"
      }
    }
  },
  "reported": {
    "payload": "object",
    "position": {
      "accuracy": "number",
      "alt": "integer",
      "altaccuracy": "integer",
      "confidence": "integer",
      "course": "integer",
      "floor": {
        "level": "number",
        "id": "string",
        "name": "string"
      },
      "lat": "number",
    }
  }
}
```

```

    "lng": "number",
    "satellitecount": "integer",
    "speed": "integer",
    "type": "string",
    "wlancount": "integer"
  },
  "system": {
    "phoneNumber": "+491234567890",
    "client": {
      "manufacturer": "string",
      "model": "string",
      "firmware": "string",
      "platform": "string",
      "name": "string",
      "version": "string",
      "homenetwork": [
        {
          "mcc": "integer",
          "mnc": "integer",
          "sid": "integer",
          "nid": "integer"
        }
      ]
    }
  },
  "stateVersion": "integer"
}

```

## responseTelemetry

### Properties

Name	Type	Required	Description
configuration	object		

### Example

```

{
  "configuration": "object"
}

```

## responseToken

### Properties

Name	Type	Required	Description
accessToken	string		
expiresIn	integer		

### Example

```

{

```

```

"accessToken": "h1.ySDEpBjW2fXM0Nk1IyBohA.6Y0v1MfQUd1K7MCg9eLZrrVTT5fKfqYECYUrD7Y77d-
p9KqIZrVfjpIrkMqVC9MmfUIL0m7xk7VuhCH59o0oLJCL6M8Q8cGHTKvrPcpqiEzUQKs7pSZXxVbIui005caUgJ3GhrS1X4aZQuB1KSsngvWmCIZ
WEtWW3SZiLa30IR0gz2121vLRjdNoLnJYsuJzHoaEKEkrMj9ffybtcBVWo9dkY1qmDQ-
DRg_loVenJK45kjHJijkQ902r_vhH8jtoXTrZ1RBFHuZtwLW8xXBw70BCWPu4OYGgthjaq61mpE8iP1s7MG7gbAiW_S249aaowMUxQN6djw8cNoT
ivSieRMxwP156mhRQ5GRjQa8AYkuOvoCFg-
LCMIxTYhrDZM4HFWQ.duHFPjvWUQbdArCL5CU7bTowK5fD07ro83r6CRWjuB_1TK2Vy01lvfNFZIZePWLyTlN0y9uqD7Uro6t87h_a0zfpeU8_52
kv_aM-
uddpzZJJ7CmrJiwhucaEJeYRDSpuzzZWT6_NwBg6_xLjyseCv5AGs8EmsuStCFP0Ey7UDIqo9V2RA9uDP64Q0mvEw3EUTHmJGHF_8E2s4iIpjKJC
"expiresIn": 86399
}

```

## responseTraces

The response body contains an array of trace samples along with the count and pageToken parameters, if available.

If no traces are found, an object with empty data array is returned

Samples are in descending order based on timestamp.

type:

### Example

```

{
  "data": [
    {
      "timestamp": 1451425708571,
      "position": {
        "lat": "52.4988217",
        "lng": "13.35170005",
        "alt": "86",
        "accuracy": "25",
        "altaccuracy": "96"
      }
    },
    {
      "timestamp": 1451425708216,
      "position": {
        "lat": "52.4988217",
        "lng": "13.35170005",
        "alt": "86",
        "accuracy": "25",
        "altaccuracy": "96"
      }
    }
  ],
  "count": 1,
  "pageToken": "1490376144514"
}

```

## responseTransitions

The response body contains an array of transition samples, a count and a pageToken if available.

If no transitions are found, an object with empty data array is provided.

Transitions are returned as an array in descending order based on timestamp.

type:

## Example

```
{
  "data": [
    {
      "inOut": "PING_OUTSIDE_FENCE",
      "geofenceId": "e2f651ee-f196-4fa3-bf88-894dc131dea3",
      "trackingId": "HERE-871eb4c9-76f6-4e9d-bed7-fa114f793e83",
      "timestamp": 1499258184142,
      "notificationStatus": "SENT"
    },
    {
      "inOut": "PING_IN_FENCE",
      "geofenceId": "e2f651ee-f196-4fa3-bf88-894dc131dea3",
      "trackingId": "HERE-871eb4c9-76f6-4e9d-bed7-fa114f793e83",
      "timestamp": 1499258057035,
      "notificationStatus": "NOT_SENT"
    }
  ],
  "count": 2,
  "pageToken": "1234abcd"
}
```

## response\_error

Object wrapper for the error response to a request.

type: object

[Required properties: *error*]

## Properties

Name	Type	Required	Description
error	object	required	

## Example

```
{
  "error": {
    "code": "integer",
    "statusMessage": "string",
    "description": "string"
  }
}
```

## response\_position\_locate

Object containing information on a location where the measurements was taken.

type: object

[Required properties: *lat*, *lng*, *accuracy*]

## Properties

Name	Type	Required	Description
lat	number $x \geq -90 \mid x \leq 90$	<b>required</b>	Latitude in WGS-84 format, decimal representation ranging from -90 to 90.
lng	number $x \geq -180 \mid x \leq 180$	<b>required</b>	Longitude in WGS-84 format, decimal representation ranging from -180 to 180.
accuracy	number $x \geq 1$	<b>required</b>	Uncertainty circle radius in meters (degree of confidence according to the 'confidence' parameter).
alt	integer		Altitude in meters (referenced to the WGS-84 ellipsoid) negative or positive.
altaccuracy	integer $x \geq 1$		Uncertainty of the altitude estimate in meters (degree of confidence according to the 'confidence' parameter).
floor	object		The building where the measurements were taken

## Example

```
{
  "lat": "number",
  "lng": "number",
  "accuracy": "number",
  "alt": "integer",
  "altaccuracy": "integer",
  "floor": {
    "level": "number",
    "id": "string",
    "name": "string"
  }
}
```

## response\_success\_locate

Object wrapper for the response to a location request.

type: object

[Required properties: *location*]

## Properties

Name	Type	Required	Description
location	object	<b>required</b>	Object containing information on a location where the measurements was taken.

## Example

```
{
  "location": {
    "lat": "number",
    "lng": "number",
    "accuracy": "number",
```



```

    "alt": "integer",
    "altaccuracy": "integer",
    "floor": {
      "level": "number",
      "id": "string",
      "name": "string"
    }
  }
}

```

## scan

Radio measurements used for positioning or radio map contribution.

type: object

### Properties

Name	Type	Required	Description
bt	object[]		Bluetooth access points
country	object		Indicates in which country the WLAN APs are located (in case cell data is not present in radio_observations)
gsm	object[]		GSM cells (GERAN)
wcdma	object[]		WCDMA cells (UTRA-FDD, 3G UMTS)
tdscdma	object[]		TD-SCDMA cell (UTRA-TDD, 3G UMTS TDD)
lte	object[]		LTE cells (E-UTRA, 4G)
cdma	object[]		CDMA cells
wlan	object[]		WLAN access points

### Example

```

{
  "bt": [
    {
      "timestamp": "string (date-time)",
      "rss": "integer",
      "mac": "string",
      "eddystoneId": "string",
      "iBeaconId": "string"
    }
  ],
  "country": {
    "mcc": "integer"
  },
  "gsm": [],
  "wcdma": [],
  "tdscdma": [],
  "lte": [],
  "cdma": [],
  "wlan": []
}

```

## telemetry

### Properties

Name	Type	Required	Description
timestamp	integer $x \geq 0 \mid x \leq 4102448400000$		Milliseconds elapsed since 1 January 1970 00:00:00 UTC.
payload	object		An application-specific JSON object. HERE Tracking doesn't read this object but you can use it to pass information to other applications. The maximum size is 1KB
system	object		<p>Values within the device configuration that are used by HERE Tracking for various application flows.</p> <p>This object can be read by HERE Tracking whereas the content of the payload is opaque.</p> <p>stateVersion can be provided by the Device, denoting the version of the last known desired state seen by the Device.</p>
position	object		The reported or determined location of the device
scan	object		Radio measurements used for positioning or radio map contribution.

### Example

```
{
  "timestamp": "integer",
  "payload": "object",
  "system": {
    "phoneNumber": "+491234567890",
    "client": {
      "manufacturer": "string",
      "model": "string",
      "firmware": "string",
      "platform": "string",
      "name": "string",
      "version": "string",
      "homenetwork": [
        {
          "mcc": "integer",
          "mnc": "integer",
          "sid": "integer",
          "nid": "integer"
        }
      ]
    }
  },
  "stateVersion": "integer",
  "position": {
    "accuracy": "number",
    "alt": "integer",
    "altaccuracy": "integer",
    "confidence": "integer",
    "course": "integer",
    "floor": {
      "level": "number",
      "id": "string",

```

```

    "name": "string"
  },
  "lat": "number",
  "lng": "number",
  "satellitecount": "integer",
  "speed": "integer",
  "type": "string",
  "wlanccount": "integer"
},
"scan": {
  "bt": [],
  "country": {
    "mcc": "integer"
  },
  "gsm": [],
  "wcdma": [],
  "tdscdma": [],
  "lte": [],
  "cdma": [],
  "wlan": []
}
}

```

## transition

Transition Type	Meaning
PING_OUTSIDE_FENCE	The ping has transitioned fully outside the geofence. The accuracy circle does not intersect the geofence anywhere
PING_IN_FENCE	The ping has transitioned fully inside the geofence. The accuracy circle does not intersect the geofence anywhere
PING_NEAR_FENCE_BOUNDARY	The accuracy circle intersects the geofence.

type: object

## Properties

Name	Type	Required	Description
inOut	string, enum { PING_OUTSIDE_FENCE , PING_IN_FENCE , PING_NEAR_FENCE_BOUNC		
geofenceId	string (uuid)		UUID v.4.0
trackingId	string		HERE Account Id
timestamp	integer x ≥ 0   x ≤ 4102448400000		Milliseconds elapsed since 1 January 1970 00:00:00 UTC.
notificationStatus	string, enum { SENT , NOT_SENT }		

## Example

```
{
  "inOut": "PING_IN_FENCE",
  "fenceId": "e2f651ee-f196-4fa3-bf88-894dc131dea3",
  "trackingId": "HERE-871eb4c9-76f6-4e9d-bed7-fa114f793e83",
  "timestamp": 1499258057035,
  "notificationStatus": "NOT_SENT"
}
```

## wlan\_locate

WLAN measurement

type: object

[Required properties: *mac*]

## Properties

Name	Type	Required	Description
mac	string	<b>required</b>	The MAC address of the WLAN access point. MAC-48 address with colon (:) or hyphen (-) separators, upper or lower case hex digits. Note that if the SSID contains postfix "_nomap", the AP should not be used for positioning. For privacy reasons positioning based on a single WLAN AP is not possible; there has to be at least one other matching wlan, cell or bluetooth.
powrx	integer $x \geq -128 \mid x \leq 0$		Received signal level (dBm) at the terminal (Required for floor level location)
timestamp	string (date-time)		Time of the measurement (UTC)

## Example

```
{
  "mac": "string",
  "powrx": "integer",
  "timestamp": "string (date-time)"
}
```