Platform Data Extension API

Developer's Guide

Version 1.6.4
Important Information

Notices

Topics:
- Legal Notices
- Document Information

This section contains document notices.
Legal Notices

© 2016 HERE Global B.V. and its Affiliate(s). All rights reserved.

This material, including documentation and any related computer programs, is protected by copyright controlled by HERE. All rights are reserved. Copying, including reproducing, storing, adapting or translating, any or all of this material requires the prior written consent of HERE. This material also contains confidential information, which may not be disclosed to others without the prior written consent of HERE.

Trademark Acknowledgements

HERE is trademark or registered trademark of HERE Global B.V.

Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

Disclaimer

This content is provided "as-is" and without warranties of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability, fitness for a particular purpose, satisfactory quality and non-infringement. HERE does not warrant that the content is error free and HERE does not warrant or make any representations regarding the quality, correctness, accuracy, or reliability of the content. You should therefore verify any information contained in the content before acting on it.

To the furthest extent permitted by law, under no circumstances, including without limitation the negligence of HERE, shall HERE be liable for any damages, including, without limitation, direct, special, indirect, punitive, consequential, exemplary and/or incidental damages that result from the use or application of this content, even if HERE or an authorized representative has been advised of the possibility of such damages.
## Document Information

### Product
<table>
<thead>
<tr>
<th>Name</th>
<th>Platform Data Extension API</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td>Version 1.6.4</td>
</tr>
</tbody>
</table>

### Document
<table>
<thead>
<tr>
<th>Name</th>
<th>Platform Data Extension API Developer's Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>92cbb75-1477665642-578aaa18</td>
</tr>
<tr>
<td>Status</td>
<td>FINAL</td>
</tr>
<tr>
<td>Date</td>
<td>2016-Oct-28, 14:42 (GMT)</td>
</tr>
</tbody>
</table>

### Digital Signature
<table>
<thead>
<tr>
<th>Signatory</th>
<th>O=HERE, CN=here.com, ST=Berlin, C=DE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuer-Certificate</td>
<td>O=HERE, CN=here.com, ST=Berlin, C=DE</td>
</tr>
<tr>
<td>Serial-Number:</td>
<td>17391143833054135595</td>
</tr>
<tr>
<td>Method</td>
<td>urn:adobe.com:Adobe.PPKLite:adbe.pkcs7.sha1 (Adobe Signature)</td>
</tr>
</tbody>
</table>
Contents

Notices .............................................................................................................................................................................. 2
  Legal Notices .................................................................................................................................................................. 3
  Document Information ................................................................................................................................................. 4

Chapter 1: Overview ......................................................................................................................................................... 7
  What is the Platform Data Extension API? .................................................................................................................... 8
  Why use the Platform Data Extension API? .................................................................................................................. 9

Chapter 2: Quick Start ....................................................................................................................................................... 11
  Making your first Requests .......................................................................................................................................... 12

Chapter 3: User Guide ....................................................................................................................................................... 16
  Acquiring Credentials .................................................................................................................................................. 17
  Constructing a Request ................................................................................................................................................ 17
    HERE Server Environments ..................................................................................................................................... 18
  Key Concepts .............................................................................................................................................................. 19
  Examples ....................................................................................................................................................................... 23
    Maps ........................................................................................................................................................................... 23
    Layers .................................................................................................................................................................... 24
  Attributes .................................................................................................................................................................. 26
  Layer .......................................................................................................................................................................... 27
  Tile ............................................................................................................................................................................ 28
  Tiles .......................................................................................................................................................................... 30
  Static .......................................................................................................................................................................... 32
  Indexes ...................................................................................................................................................................... 33
  Index .......................................................................................................................................................................... 33
  File ........................................................................................................................................................................... 34
Chapter 4: API Reference

<table>
<thead>
<tr>
<th>Resource</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ServiceConfiguration</td>
<td>36</td>
</tr>
<tr>
<td>Service Support</td>
<td>36</td>
</tr>
<tr>
<td>Resources</td>
<td>38</td>
</tr>
<tr>
<td>Maps</td>
<td>38</td>
</tr>
<tr>
<td>Layers</td>
<td>38</td>
</tr>
<tr>
<td>Attributes</td>
<td>39</td>
</tr>
<tr>
<td>Layer</td>
<td>40</td>
</tr>
<tr>
<td>Tile</td>
<td>41</td>
</tr>
<tr>
<td>Tiles</td>
<td>42</td>
</tr>
<tr>
<td>Static content</td>
<td>44</td>
</tr>
<tr>
<td>Indexes</td>
<td>45</td>
</tr>
<tr>
<td>Index</td>
<td>45</td>
</tr>
<tr>
<td>File</td>
<td>46</td>
</tr>
<tr>
<td>ServiceConfiguration</td>
<td>47</td>
</tr>
<tr>
<td>Bounding Box Search</td>
<td>48</td>
</tr>
<tr>
<td>Corridor Search</td>
<td>49</td>
</tr>
<tr>
<td>Proximity Search</td>
<td>50</td>
</tr>
<tr>
<td>Quad Key Search</td>
<td>51</td>
</tr>
<tr>
<td>HTTP Status Codes</td>
<td>52</td>
</tr>
</tbody>
</table>

Chapter 5: Coverage Information

<table>
<thead>
<tr>
<th>Resource</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>54</td>
</tr>
</tbody>
</table>
Chapter 1

Overview

Topics:
• What is the Platform Data ...
• Why use the Platform Data ...

This document introduces the Platform Data Extension API and:
• explains key concepts
• provides examples
• documents resources and query parameters
• documents response structures and data types
What is the Platform Data Extension API?

HERE Platform Data Extension API is an API that provides HERE content which is not accessible through other HERE Platform APIs. PDE groups HERE core map data into thematic layers. Each layer contains geographical tiles. Each tile contains a list of data records. Each data record contains attributes. Content is delivered per tile as JSON or plain text file.

Figure 1: Typical Application Control Flow

Each thematic data layer serves a specific use case, e.g. driver warnings, Junction View guidance, fuel efficient driving behavior, safety related driving behavior or polygons of a certain admin level. Each layer contains only the data required for its use case.

To keep applications' data processing simple, each layer consists of a single flat table with simple type records (numbers or text strings).

To reduce transfer data volume, some columns are de-normalized (a column contains a comma separated list of values) or encoded (abbreviations or numbers to represent static string values, bit mask for vehicle type etc.).

For example, geometry is delivered in a single column per coordinate (x, y, z-level columns). Each coordinate is a comma separated list of integer values in 10E-5 WGS degree (or 10E-7 for ADAS accuracy). The first value is absolute, each subsequent is relative to the previous value, a 0 value is reduced to an empty string.
Geographical tiles are requested using a standardized level/tiling system, allowing applications to request data in an appropriate level of detail / tile size for the area of interest.

- The world is recursively divided into halves, where level 0 contains 2 x 1 tiles (East and West of Greenwich) and each tile comprises 180 x 180 degree.
- Level 1 contains 4 x 2 tiles (each of the 2 level 0 tiles subdivided into 4 parts).
- On Level N, each tile comprises 180.0 / (2^level) degrees into each direction.

Platform Data Extension API delivers data only in standard tiles, not along a route or within an administrative area. Applications have to map the locations / areas of interest to tiles, request these tiles from PDE, and extract the required objects from those tiles, e.g. those links that are on the route or within the area of interest. Clients shall accept zipped transfer encoding to reduce the network transfer volume.

Most HERE Platform APIs use one single snapshot of the HERE core map: the latest available release. However, the underlying core map release can slightly differ between the different Platform APIs. Hence, PDE offers all recent map releases. So the customer can retrieve additional map data from the map release that corresponds to other HERE Platform APIs.

Why use the Platform Data Extension API?

Platform Data Extension API is designed for following usage:

- Customers don't have to download complete core map content in a format like RDF, compile it into application-ready structure and host it in a Web service. Instead, customer applications can directly consume the data from this API without a complex access library (decoder), specifying the required attributes (thematic layers) and geographical scope. This allows for customer applications with limited network bandwidth and limited storage and processing capabilities to directly access HERE core map content.
- HERE customers can enrich their applications by adding additional map attributes through PDE. The API enables new applications that require certain map attributes which are currently not provided through existing HERE Platform APIs.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Use Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Type</td>
<td>Fleet management customers need to know on which road types a vehicle is driving.</td>
</tr>
<tr>
<td>Number of Lanes</td>
<td>Fleet management companies need to know how many lanes the roads have that their vehicles use.</td>
</tr>
<tr>
<td>Builtup Areas</td>
<td>Fleet management companies need to know if an asset is within or outside of an urban area for to risk management.</td>
</tr>
<tr>
<td>Road Condition</td>
<td>Raise alerts if tracked vehicle leaves paved roads.</td>
</tr>
<tr>
<td>Attribute</td>
<td>Use Case</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Slope</td>
<td>Enables estimating fuel consumption and calculation of CO2 emission, for driver education or penalties.</td>
</tr>
<tr>
<td>Traffic Lights</td>
<td>Enables enhanced estimation of potential trip delays due to traffic signals.</td>
</tr>
<tr>
<td>Curvature</td>
<td>Assessment of driver behavior for risk calculation and truck trip planning.</td>
</tr>
<tr>
<td>Speed Limits</td>
<td>Driver behavior analysis for risk calculation and speed warning alerts during drive.</td>
</tr>
<tr>
<td>Junction Views</td>
<td>Integration of junction views for improved directions or guidance.</td>
</tr>
<tr>
<td>Toll Cost</td>
<td>More accurate toll cost estimation for vehicle types based on toll roads and distances, on top of the info returned by the routing service.</td>
</tr>
</tbody>
</table>
Chapter 2

Quick Start

Topics:
- Making your first Requests

This article helps you start using the Platform Data Extension API.
Making your first Requests

Sometimes the easiest way to start using new software is to run simple working examples. `app_id` and `app_code` are authentication credentials. This document uses `{YOUR_APP_CODE}` and `{YOUR_APP_ID}` as placeholders for access and authorization credentials. Please replace these placeholders with your own unique application-specific credentials to access the API resources. For more information about the access and authorization credentials credentials, see Acquiring Credentials.

The examples in this guide use the Customer Integration Testing (CIT) environment. This environment allows you to test your software. For production please use the production environment. See Constructing a Request on page 17 for the base URLs of both environments.

Note that most example URLs in this guide are broken up into multiple lines for better readability. Remove these line breaks and spaces when copying and pasting the examples to make sure URLs are still well formed.

### Prerequisites

The only thing you need to start using the Platform Data Extension API is an HTTP client. Choose any HTTP client application you are familiar with. A command line tool like curl will do the job, as will any modern web browser.

### Browse the Available Thematic Layers

Browse the Available Thematic Layers

<table>
<thead>
<tr>
<th>Layer</th>
<th>Attributes</th>
<th>Premium Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADAS_ATTRIB_FC1</td>
<td>LINK_ID, HPX, HPY, HPZ, SLOPES, HEADINGS, CURVATURES, VERTICAL_FLAGS,</td>
<td>PDE-Premium-Adas</td>
</tr>
<tr>
<td></td>
<td>REFNODE_LINKCURVHEADS, NREFNODE_LINKCURVHEADS, BUA_ROAD, BUA_ROAD_VERIFIED</td>
<td></td>
</tr>
<tr>
<td>ADAS_ATTRIB_FC2</td>
<td>LINK_ID, HPX, HPY, HPZ, SLOPES, HEADINGS, CURVATURES, VERTICAL_FLAGS,</td>
<td>PDE-Premium-Adas</td>
</tr>
<tr>
<td></td>
<td>REFNODE_LINKCURVHEADS, NREFNODE_LINKCURVHEADS, BUA_ROAD, BUA_ROAD_VERIFIED</td>
<td></td>
</tr>
<tr>
<td>ADAS_ATTRIB_FC3</td>
<td>LINK_ID, HPX, HPY, HPZ, SLOPES, HEADINGS, CURVATURES, VERTICAL_FLAGS,</td>
<td>PDE-Premium-Adas</td>
</tr>
<tr>
<td></td>
<td>REFNODE_LINKCURVHEADS, NREFNODE_LINKCURVHEADS, BUA_ROAD, BUA_ROAD_VERIFIED</td>
<td></td>
</tr>
</tbody>
</table>
LINK_ATTRIBUTE_FC1 Layer Attributes in Detail

The PDE thematic map layer LINK_ATTRIBUTE_FC1 contains information about road links to enhance routing, guidance, driver warnings and map display. Furthermore, you can use it to enable driver/journey evaluation or statistical analysis of routes and journeys. The layer is subdivided into the five (5) road functional classes. LINK_ATTRIBUTE_FC1 contains information only about motorways or motorway-like roads, while LINK_ATTRIBUTE_FC2 contains information on secondary (or similar) roads and so on.

Level for tile requests: 9

Example tile requests: json txt

https://pde.cit.api.here.com/1/doc/layer.json
?app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}
&layer=LINK_ATTRIBUTE_FC1

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINK_ID</td>
<td>Permanent link ID. Positive 64 bit Integer that globally identifies the road, carto or buildin footprint link, also across map releases. Link IDs are never reused.</td>
</tr>
<tr>
<td>ISO_COUNTRY_CODE</td>
<td>Identifies the country in which the navigable link or administrative area is located. 3 character country code based on ISO Standard 3166.</td>
</tr>
<tr>
<td></td>
<td>TWN: 台湾</td>
</tr>
<tr>
<td>Attribute</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>VEHICLE_TYPES</td>
<td>Access Characteristics identify the vehicle types that are allowed on a link, allowed on a lane or to which a condition applies. Sum of: Automobiles (1), buses (2), taxis (4), car pools (8), pedestrians (16), trucks (32), deliveries (64), emergency vehicles (128), through traffic (256), motorcycles (512) and road trains (1024).</td>
</tr>
<tr>
<td>URBAN</td>
<td>Indicates if the link is located within the Built-up Area.</td>
</tr>
<tr>
<td>TRANSPORT_VERIFIED</td>
<td>Indicates if the link has been verified for the attribution as defined in the Trucks product specification.</td>
</tr>
<tr>
<td>FUNCTIONAL_CLASS</td>
<td>Defines a hierarchical network used to determine a logical and efficient route.</td>
</tr>
<tr>
<td></td>
<td>5 : LEVEL 5</td>
</tr>
<tr>
<td></td>
<td>4 : LEVEL 4</td>
</tr>
<tr>
<td></td>
<td>2 : LEVEL 2</td>
</tr>
<tr>
<td></td>
<td>3 : LEVEL 3</td>
</tr>
<tr>
<td></td>
<td>1 : LEVEL 1</td>
</tr>
<tr>
<td>CONTROLLES_ACCESS</td>
<td>Identifies roads with limited entrances and exits that allow uninterrupted high speed traffic flow.</td>
</tr>
</tbody>
</table>

**View a Tile**

View an example tile of a certain thematic layer.

```json
https://pde.cit.api.here.com/1/tile.json
?app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}
&layer=LINK_ATTRIBUTE_FC1
&level=9
&tilex=537
&tiley=399
```

```json
{
    "Rows": [
        {
            "iso_country_code": "DEU",
            "link_id": "52307959",
            "route_types": "4",
            "urban": "N"
        },
        {
            "iso_country_code": "DEU",
            "link_id": "52308006",
            "route_types": "0",
            "urban": "N"
        },
        {
            "iso_country_code": "DEU",
            "link_id": "52308070",
            "route_types": "0",
            "urban": "Y"
        }
    ]
}
```
```json
[
  {
    "iso_country_code": "DEU",
    "link_id": "52308071",
    "route_types": "4",
    "urban": "N"
  },
  {
    "iso_country_code": "DEU",
    "link_id": "52308112",
    "route_types": "4",
    "urban": "Y"
  },
  {
    "iso_country_code": "DEU",
    "link_id": "52308154",
    "route_types": "4",
    "urban": "Y"
  },
  ...
]
```
Chapter 3

User Guide

Topics:

- Acquiring Credentials
- Constructing a Request
- Key Concepts
- Examples
- Service Support

The articles in this section provide a guide to using the Platform Data Extension API.
Acquiring Credentials

All users of HERE Extension APIs must obtain authentication and authorization credentials and provide them as values for the parameters `app_id` and `app_code`. The credentials are assigned per application.

This document uses the placeholder text `{YOUR_APP_CODE}` and `{YOUR_APP_ID}` as placeholders for access and authorization credentials. Please replace these placeholders with your own unique application-specific credentials to access the API resources.

To obtain the credentials for an application, please contact us.

If you wish to explore the API, use the API Explorer at https://developer.here.com/api-explorer.

Constructing a Request

A request to the Platform Data Extension API includes the basic elements shown in the following table and, in addition, it may contain resource-specific parameters or data.

<table>
<thead>
<tr>
<th>Table 2: Basic request elements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Element</strong></td>
</tr>
<tr>
<td>Base URL</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
### HERE Server Environments

HERE provides two server environments for handling your requests: a Production environment and a Customer Integration Testing (CIT) environment.

You are required to use the CIT Environment when evaluating our products via our 90-day free trial.

To access CIT for REST APIs, amend the base URL to include an additional `cit` segment. For example, the CIT URL for this API is **https://pde.cit.api.here.com**.

HERE examples and demos use this CIT environment only to provide an illustration of how the service operates.

You are required to use the Production environment for general production use. The CIT environment must **not** be used for production.

---

<table>
<thead>
<tr>
<th>Element</th>
<th>Value/Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path</td>
<td>/1/</td>
<td>100 requests per hour and 1000 requests per calendar day.</td>
</tr>
<tr>
<td>Resource</td>
<td>doc/maps</td>
<td>GET only, specify request details via query parameters</td>
</tr>
<tr>
<td></td>
<td>doc/layers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>doc/layer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tile</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tiles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>static</td>
<td></td>
</tr>
<tr>
<td></td>
<td>index</td>
<td></td>
</tr>
<tr>
<td></td>
<td>file</td>
<td></td>
</tr>
<tr>
<td></td>
<td>serviceconfiguration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>search/bbox</td>
<td></td>
</tr>
<tr>
<td></td>
<td>search/corridor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>search/proximity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>search/quadkey</td>
<td></td>
</tr>
<tr>
<td>Application Code</td>
<td>&amp;app_code={YOUR_APP_CODE}</td>
<td>Substitute your own unique app_code</td>
</tr>
<tr>
<td>Application Id</td>
<td>&amp;app_id={YOUR_APP_ID}</td>
<td>Substitute your own unique app_id</td>
</tr>
</tbody>
</table>
High Loads and Performance Testing

Neither standard server environment (CIT and Production) is designed to support high loads or performance testing. You must not conduct performance tests against the CIT or Production environments. If you need to do performance testing, contact HERE to discuss options.

Key Concepts

This section provides insights into the key concepts used throughout the Platform Data Extension API.

Layers

The map content is distributed across many thematic layers, allowing applications to request only relevant data and hence reduce the data transfer. The available layers and their content keeps evolving. Hence, the service offers specific resources where application developers can lookup the layers and their content. Applications have to take into account, that the order of the columns might change, and new columns might be introduced.

A typical use case is retrieving information along a route. A route typically starts on smaller roads, climbs to bigger roads and stays on motorway like roads for the main part, and finally steps down into smaller roads when approaching the destination. Retrieving all information about smaller roads along the whole route would result in overwhelming data transfer. Hence, road link related layers are split into 5 layers each, corresponding to the functional road classes in the HERE map. Functional class 1 roads are roughly motorways, while functional class 5 roads are small roads that are used only to reach a destination. If applications know the functional class of the road links along the route, then they only have to request the corresponding layer instead of all 5 layers.

Levels

Geographical tiles are requested using a standardized level/tiling system, allowing applications to request data in an appropriate level of detail / tile size for the area of interest.

The world is recursively divided into halves, where level 0 contains 2 x 1 tiles (East an and West of Greenwich) and each tile comprises 180 x 180 degree. Level 1 contains 4 x 2 tiles (each of the 2
level 0 tiles subdivided into 4 parts). On Level N, each tile comprises \(180.0 / (2^{\text{level}})\) degrees into each direction.

**Figure 2: Level Tiling**

Tiles from a layer must be requested at a certain level. This level is documented for each layer. For road link based layers, the level is always functional class + 8.

**Tiling**

Tiling is done using the NDS tiling scheme. Multiple tiling layers are required for layers that are used for map display and routing. One tiled layer is required for layers that are only relevant when using the most detailed view.

A tile contains all geometry including the lower and left border and excluding the upper and right border (except for additionally included points from cutting geometry across a tile border – there the tile may contain a point on the upper and/or right border).

At tile boundaries, artificial points are inserted (and marked as such). These artificial points exist in both tiles with identical coordinates. Polygons cut at tile borders get closed on each side. This tiling schema allows applications to either

- Ignore the tiling and use the tiled fragments as separate map objects
- Remove the additional geometry and stitch tiled geometry back together
- Suppress the drawing of artificial tiling lines as polygon border lines

The figure should not be misinterpreted as a Mercator projection: The tiling is based on un-projected WGS84 degrees. Only for 2 dimensional drawing a Mercator projected world is shown.
Pieces of a tiled geometry can be identified as belonging to each other, because they have the same permanent ids, e.g. link id or carto / face id.

Some layers do not cut the geometry into tile pieces, but copy the whole geometry of an object into each of the tiles it covers. This is described in the respective layers’ documentation.

Tiled links are represented as:

- Tile "A": start node, shape point(s), artificial shape point
- Tile "B": artificial shape point, shape point(s), end node

Artificial shapes are also represented as relative coordinate values (relative to the previous shape point). However if the artificial shape point is at the start of a listing (as in Tile B example), the full coordinate is published.

How to compute the tile ID for a given coordinate and layer:

\[
\text{tile size} = 180° / 2^{\text{level}} \ [\text{degree}]
\]

\[
\text{tileY} = \text{trunc}((\text{latitude} + 90°) / \text{tile size})
\]

\[
\text{tileX} = \text{trunc}((\text{longitude} + 180°) / \text{tile size})
\]

**Identifiers**

Released Permanent IDs, Tiled IDs, Dynamic Reference Permanent ids are delivered with the data unless suppressed in the request. Permanent ids allow to combine all core map content and additional content within the same release, and also to identify the same map objects across releases (with the known limitations like link splits or POIs that changed POI category).

If no certain release is requested, then the latest available data is delivered. It also contains the permanent ids, but a 100% match between other map objects is not guaranteed. For 100% ID match, applications must request exactly the same map release from PDE as the other corresponding service (e.g. router) is using.

For major map objects (road links and POIs), there is an option to request dynamic reference ids like ULR, AGORA, TMC or street address. This allows combining map data across very different map releases and works for applications that do not have the HERE permanent ids on board. However, this causes more data transfer and more expensive map matching on application side.

**Static Layer Tables**

In addition to the tiled layers, there are also non-tiled, static layers. These are just one small table, that can be retrieved as a whole. These tables contain information, which is referenced in other layers’ tiles.
For example, records in the Traffic Pattern layer contain a PATTERN_ID. A static layer table contains the full specification for each PATTERN_ID.

**File References**

The flat text file format makes sense for core map data, but not for pixel images like Junction Views. For this kind of map content, the flat file data contains a file path. The content itself can then be retrieved through PDE with query parameter path=... next to the layer=... . Tiled or static layers will publish the path information if they can be enhanced with external file data, for example with Junction View SVGs.

**Indexes**

PDE tiles are requested via geographic location (tileX, TileY, level). However, some applications only know a map object ID (Link ID, Admin Place ID) and want to retrieve tiles for them. They can use PDE indexes to retrieve the tile IDs (tileX, TileY, level) for certain map object IDs. E.g. which tiles from which Link Attribute layers (there are 5 for the 5 functional road classes) do i have to request that contain the information for following link IDs - 555, 666, 777? An index request on layer Road Geometry with attributes=LINK_ID and values=555,666,777 returns the Road Geometry tile IDs covering these links. But the application can request the same tile IDs from the Link Attribute layer (on the same level).

Returned tileX, tileY numbers can be used to request tiles from any layer, as long as the level is the same.

The index resource returns (layer, level, tileX, TileY). If the application needs to know the spatial boundary of a tile, it can compute it: tileMinLat = tileY * tileSize - 90.0; tileMinLon = tileX * tileSize - 180.0; tileMaxLat = tileMinLat + tileSize - 0.00001; tileMaxLon = tileMinLon + tileSize - 0.00001; where tileSize = 180 / (2^level).

**Links and Nodes**

A Link is a piece of road with a fixed set of attributes. A Link ends at an intersection, or when any attributes change, e.g. the speed limit. A Link has a Node at each end. The "lower left" Node (lower latitude, or if equal then lower longitude, or if equal then lower z-level) is called Reference Node. The other Node is called Non-Reference Node. A Node can connect 2 Links (attribute change along the road) or multiple Links (intersection).

**Map Regions**

The HERE map is divided into following regions: ANTARC (Antarctica), APAC (Asia Pacific), AUS (Australia), EEU (Eastern Europe), HKG (Hongkong), IND (India), MEA (Middle East Africa), NA (North
America), SAM (South America), TWN (Taiwan), WEU (Western Europe). PDE requests can refer to one or multiple regions by using the "region" parameter. Except for the documentation resources, the "region" parameter is optional. If omitted, PDE finds out the applicable region(s).

Some layers contain content which does not match exactly one of above regions, or is not available for each quarterly map release. These layers can be addressed through specific "region" names, like PCBEU (European Postal Code Boundaries, not released regularly) or DTM_WORLD (Digital Terrain Model of the World, also not released regularly).

**Map Releases**

The HERE map is released quarterly and weekly. Per default, PDE delivers the latest available map release, for each map region. But PDE also offers older map releases on demand, selectable via the "region" parameter. Until end of 2015, quarterly map releases are named like 2015Q4, where the 4 tells that the map was released in the fourth quarter. Starting 2016, quarterly map releases are named like 161J0, 161 telling the underlying base release is 2016Q1 and letter J incrementing with the quarterly releases since then, last digit incrementing with repair reshipments. Weekly releases are named like 16133, 161 telling the base release and 33 incrementing with the weekly releases since then. For availability of certain older map releases please contact your sales representative or technical customer support.

**Examples**

This section provides examples of requests along with the responding results.

More examples are provided by the Technical Customer Support.

**Example Maps**

**User Story**

The user wants to lookup, which maps are available. This resource should be used by an application developer during development, not within the application at runtime.

**Request Summary**

The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.
Resource: doc/maps

Request

?app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}

Response

{
  "maps": [
    {"coverage": "WEU", "releaseYearAndQuarter": "161H0"},
    {"coverage": "NA", "releaseYearAndQuarter": "16161"},
    {"coverage": "SAM", "releaseYearAndQuarter": "16162"},
    ...
  ]
}

Example Layers

User Story

The user wants to determine, which layers the map contains. This is online documentation. It is not intended that applications look this up during runtime.

Request Summary

The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

<table>
<thead>
<tr>
<th>Resource:</th>
<th>doc/layers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameters:</td>
<td>region [WEU], one map region, optional, default = global</td>
</tr>
</tbody>
</table>
?app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE} |
Response

[

{
"name":"ADAS_ATTRIB_FC1",
"type":"attr",
"attributes":[
"LINK_ID",
"HPX","HPY",
"HPZ","SLOPES",
"HEADINGS",
"CURVATURES",
"VERTICAL_FLAGS",
"REFNODE_LINKCURVHEADS",
"NREFNODE_LINKCURVHEADS",
"BUA_ROAD",
"BUA_ROAD_VERIFIED"
],
"featureMapping":"premium_adas",
"tileLevel":9
},
{
"name":"ADAS_ATTRIB_FC2",
"type":"attr",
"attributes":[
"LINK_ID",
"HPX",
"HPY",
"HPZ",
"SLOPES",
"HEADINGS",
"CURVATURES",
"VERTICAL_FLAGS",
"REFNODE_LINKCURVHEADS",
"NREFNODE_LINKCURVHEADS",
"BUA_ROAD",
"BUA_ROAD_VERIFIED"
],
"featureMapping":"premium_adas",
"tileLevel":10
},
...
{
"name":"ADMIN_POLY_0",
"type":"geom",
"attributes":[
"CARTO_ID",
"ADMIN_PLACE_ID",
"ADMIN_LEVEL",
"ADMIN_ORDER",
"FEATURE_TYPE",
"FROM_LINEAR",
"NAME",
"LAT",
"LON"
],
"featureMapping":"base",
"tileLevel":7
},
{
"name":"ADMIN_POLY_1",
"type":"geom",
"attributes":[
"CARTO_ID",
"ADMIN_PLACE_ID",
"ADMIN_LEVEL",
"ADMIN_ORDER",
"FEATURE_TYPE",
"FROM_LINEAR",
"NAME",
"LAT",
"LON"
],
"featureMapping":"base",
"tileLevel":7
}
]
Example Attributes

User Story

The user searches for a certain attribute within any of the map's layers. This is online documentation. It is not intended that applications look this up during runtime.

Request Summary

The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

Resource:  
doc/attributes
Parameters: region (WEU), one map region, optional, default = global

Request

https://pde.cit.api.here.com/1/doc/attributes.json
?app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}

Response

[
  {
    "layers": [
      "ADMIN_POLY_0",
      "ADMIN_POLY_1",
      "ADMIN_POLY_2",
      "ADMIN_POLY_8",
      "ADMIN_POLY_9"
    ],
    "description": "1 : adminlevel1<br/> 2 : adminlevel2<br/> 3 : adminlevel3<br/> 4 : adminlevel4<br/> 5 : adminlevel5<br/> 6 : adminlevel6<br/> 7 : adminlevel7",
    "name": "ADMIN_LEVEL"
  },
  ...
  {
    "layers": [
      "TRUCK_SPEED_LIMITS_FC1",
      "TRUCK_SPEED_LIMITS_FC2",
      "TRUCK_SPEED_LIMITS_FC3",
      "TRUCK_SPEED_LIMITS_FC4",
      "TRUCK_SPEED_LIMITS_FC5"
    ],
    "description": "In rare cases there are special speed limits only in a region of a country. This region can be identified by the administrative place id."
  },
  {
    "layers": [
      "ROAD_ADMIN_FC1",
      "ROAD_ADMIN_FC2",
      "ROAD_ADMIN_FC3",
      "ROAD_ADMIN_FC4",
      "ROAD_ADMIN_FC5"
    ],
    "description": "Contains the left and right administrative place ids in following order: CountryLeft;CountryRight,Order1Left;Order1Right,Order2Left;Order2Right, Order8Left;Order8Right,BuiltupLeft;BuiltupRight."
  },
  A Null value means, there is no administrative place id. ...
]

Example Layer

User Story

The application developer wants to see which thematic layers are available for this map.
Request Summary

The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

<table>
<thead>
<tr>
<th>Resource:</th>
<th>doc/layer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameters:</td>
<td>region[WEU], one map region, optional, default = global</td>
</tr>
<tr>
<td></td>
<td>layer[LINK_ATTRIBUTE_FC3], thematic layer</td>
</tr>
</tbody>
</table>

Request

&app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}

Response

```json
{
"tileRequestsLevel":9,
"tileX":496,"tileY":358,
"referencedStaticContents":[]

"description":"Layer with road link attributes. Please be aware that some columns are nullable.",
"attributes":{
"LINK_ID":
"Permanent link ID. Positive 64 bit Integer that globally identifies the road, carto or buildin footprint link, also across map releases. Link IDs are never reused.",
"ISO_COUNTRY_CODE":
"Identifies the country in which the navigable link is located.",
"VEHICLE_TYPES":...
...}
}
```

Example Tile

User Story

The user wants to retrieve road link attributes like route type (motorway etc) or whether a link is inside a builtup, for a certain geographic area, for all roads with functional class 3. The functional road class is returned by the routing service per link. If functional class is unknown, then all 5 layers (functional class 1 ... 5) must be requested. The level is documented for each layer. For road
link based layers, the level is always functional class + 8. For a given level, tileX + tileY for a given coordinate lat + lon can be computed by

\[
\begin{align*}
tileSizeDegree &= 180.0 / (2^\text{level}) \\
tileY &= \text{floor}((\text{latitude} + 90.0) / tileSizeDegree) \\
tileX &= \text{floor}((\text{longitude} + 180.0) / tileSizeDegree)
\end{align*}
\]

Request Summary

The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

<table>
<thead>
<tr>
<th>Resource:</th>
<th>tile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameters:</td>
<td>region [WEU], map region, optional, &quot;WEU&quot; or &quot;APAC,IND&quot;...</td>
</tr>
<tr>
<td></td>
<td>layer [LINK_ATTRIBUTE_FC3], thematic layer</td>
</tr>
<tr>
<td></td>
<td>level [10], size of requested tile: N x N degree in WGS84, where N = 180 / (2^\text{level})</td>
</tr>
<tr>
<td></td>
<td>tileX [1073], level dependent tile number, e.g. to cover &quot;LON&quot;, request tileX = floor((LON + 180.0) / tileSize)</td>
</tr>
<tr>
<td></td>
<td>tileY [797], level dependent tile number, e.g. to cover &quot;LAT&quot;, request tileX = floor((LAT + 90.0) / tileSize)</td>
</tr>
</tbody>
</table>

Request

https://pde.cit.api.here.com/1/tile.json
?layer=LINK_ATTRIBUTE_FC3
&level=11
&tileX=2146
&tileY=1594
&app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}

Response

```json
{
  "Rows": [
    {
      "iso_country_code": "DEU",
      "link_id": "52307959",
      "route_types": "4",
      "urban": "N"
    },
    {
```
Example Tiles

User Story

The user wants to load many tiles. To reduce the HTTP overhead of many "tile" requests, he can request multiple tiles in a single request.

Request Summary

The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

<table>
<thead>
<tr>
<th>Resource:</th>
<th>tiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameters:</td>
<td>The parameters are the same as for the &quot;tile&quot; resource, with following exceptions:</td>
</tr>
<tr>
<td></td>
<td>layer or layers [LINK_ATTRIBUTE_FC3 or LINK_ATTRIBUTE_FC3, SPEED_LIMIT_FC5], thematic layer(s)</td>
</tr>
</tbody>
</table>
level or levels [10 or 10,12], size(s) of requested tiles
tilexy [1073, 797, 1074, 797, ...], comma separated list of tilex,tiley pairs	
tiley [797], level dependent tile number, e.g. to cover "LAT", request tileX = floor((LAT + 90.0) / tileSize)
meta [1], specifies that the response tiles are each framed by tile description meta data

Request

https://pde.cit.api.here.com/1/tiles.json
?layers=LINK_ATTRIBUTE_FC3,SPEED_LIMITS_FC4
&levels=11,12
&tilexy=2146,1594,4290,3000
&meta=1
&app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}

Response

{"Tiles": [
    "Meta": [
        "layerName":"LINK_ATTRIBUTE_FC3",
        "tileX":"2146",
        "tileY":"1594",
        "level":"11",
        "rowCount":"2175",
        "mapRegion":"EU",
        "mapRelease":"2014Q4"
    ],
    "Rows": [
        "LINK_ID":"52298977",
        "ISO_COUNTRY_CODE":"DEU",
        "VEHICLE_TYPES":"1023",
        "URBAN":"Y",
        ...
    ],
    ...
    ... more rows ...
]}
... next tile ...
}
Example Static

User Story

Some layers contain IDs, for which the actual content is stored in a static (non-tiled) table. The user got a vehicle type ID in a toll cost layer tile, and wants to lookup the according vehicle type specification.

Request Summary

The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

| Resource: | static |
| Parameters: | region [WEU], map region, optional, "WEU" or "APAC,IND"...<br>content [TC_VEH_TYPES], name of the static table |

Request

https://pde.cit.api.here.com/1/static.json<br>?content=TC_VEH_TYPES<br>&app_id={YOUR_APP_ID}<br>&app_code={YOUR_APP_CODE}

Response

```json
[
  {
    MAX_NR_AXLES_VEHICLE: "4",
    MIN_WEIGHT_VEHICLE: "7.5",
    MIN_WEIGHT_TOTAL: "8.0",
    ...
    HYBRID: "",
  },
  {
    MAX_NR_AXLES_VEHICLE: "4",
    MIN_WEIGHT_VEHICLE: "2.8",
    MIN_WEIGHT_TOTAL: "2.8",
    ...
    HYBRID: "",
  },
  ...]
```
Example Indexes

User Story
The user needs driving direction and speed category of some road links, but doesn’t know their geometry. So the user cannot directly request PDE tiles. He first has to call the index resource to obtain the tiles for those links. The indexes resource lists, which indexes are available for the map. This is online documentation. It is not intended that applications look this up during runtime.

Request Summary
The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

| Resource: | doc/indexes |
| Parameters: | region [WEU], one map region, optional, default = global |

Request

https://pde.cit.api.here.com/1/doc/indexes.json
?app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}

Response

```
[  
  { indexedLayerName: "ROAD_GEOM_FC1", indexedColumnNames: "LINK_ID" },
  { indexedLayerName: "ROAD_GEOM_FC2", indexedColumnNames: "LINK_ID" }
]
```

Example Index

User Story
The user needs driving direction and speed category of some road links, but doesn’t know their geometry. So the user cannot directly request PDE tiles. He first has to call the index resource to obtain the tiles for those links. Then he uses the [layer, tileX, tileY, level] tuples from the result to request those tiles from PDE.
Request Summary

The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

<table>
<thead>
<tr>
<th>Resource:</th>
<th>index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameters:</td>
<td></td>
</tr>
<tr>
<td>region</td>
<td>[WEU], map region, optional, &quot;WEU&quot; or &quot;APAC,IND&quot;...</td>
</tr>
<tr>
<td>layer</td>
<td>[ROAD_GEOM_FC3], or other indexed layer, or ROAD_GEOM_FCn to search in all 5 layers</td>
</tr>
<tr>
<td>attributes</td>
<td>[LINK_ID], or other indexed attribute(s)</td>
</tr>
<tr>
<td>values</td>
<td>[33, 44, 55, 66], list of values for this attribute, e.g. the link IDs on a route</td>
</tr>
</tbody>
</table>

Request

https://pde.cit.api.here.com/1/index.json
?layer=ROAD_GEOM_FCn
&attributes=LINK_ID
&values=548294575,833539855,550088940,930893121
&app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}

Response

Layers: [
  {layer: "ROAD_GEOM_FC1", level: 9, tileXYs: [534,397,536,398]),
  {layer: "ROAD_GEOM_FC2", level: 10, tileXYs: []},
  {layer: "ROAD_GEOM_FC3", level: 11, tileXYs: [2139,1590 ]},
  {layer: "ROAD_GEOM_FC4", level: 12, tileXYs: []},
  {layer: "ROAD_GEOM_FC5", level: 13, tileXYs: [8580,6376 ]}
]

Example File

User Story

Some layer information can be enhanced with external file content. A user calculated route can be checked for example against the Junction View layer to determine if the route contains Junction View image files. The path to the respective file is part of the Junction View layer. This path information can be used to retrieve the respective Junction View SVG.
Request Summary

The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

<table>
<thead>
<tr>
<th>Resource:</th>
<th>file</th>
</tr>
</thead>
</table>
| Parameters:| region [WEU], map region, optional, "WEU" or "APAC,IND"...
layer [JUNCTION_VIEW], thematic layer
path [B/16x9/JV_AT_55877107.svg], or other paths that are published as layer content |

Request

https://pde.cit.api.here.com/1/file.bin
?layer=JUNCTION_VIEW
&path=B/16x9/JV_AT_55877107.svg
&app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}

Response
Example Service Configuration

User Story
The user wants to know the current service configuration parameters, e.g. how many tiles he can ask for in a single HTTP request.

Request Summary
The following list summarizes the elements required to create a request matching the user story and shows, in square brackets, how those elements are used in the request example below. Note that the request example also uses the authentication parameters.

<table>
<thead>
<tr>
<th>Resource:</th>
<th>serviceconfiguration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameters:</td>
<td>none</td>
</tr>
</tbody>
</table>

Request

https://pde.cit.api.here.com/1/serviceconfiguration.json
?app_id={YOUR_APP_ID}
&app_code={YOUR_APP_CODE}

Response

{ "Configuration":
  { "multiTileRequestLimit":"100",
    "indexRequestValueLimit":"100",
    "maxGetLinkInfoLinkIdsPerRequest":"100"
  }
}

Service Support
If you need assistance with this or other HERE products, contact your HERE representative or Technical Customer Support.
Chapter 4

API Reference

Topics:
- Resources
- HTTP Status Codes

This section provides descriptions of the resources, parameters, return types and error codes of the HERE Platform Data Extension API.
Resources

All parameter values including letters outside A-Z and a-z must be first UTF-8 encoded and then URL encoded. Every URL unsafe character should be URL encoded.

Responses can be extended by new elements or attributes without prior announcement, and without a new major version. Hence, applications that parse the responses should not assume fixed response structures, but should deal with additional, unexpected elements and attributes.

Maps

List all available maps in JSON (doc/maps.json), HTML (doc/maps.html) or text (doc/maps.txt) format.

Resource URI

doc/maps

Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
</tbody>
</table>

Layers

List all available thematic layers for this map in JSON (doc/layers.json), HTML (doc/layers.html) or plain text (doc/layers.txt) format.

Resource URI

doc/layers
Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See <a href="#">Acquiring Credentials</a>.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See <a href="#">Acquiring Credentials</a>.</td>
</tr>
<tr>
<td>region</td>
<td>String</td>
<td>Optional (default=whole world). Map coverage region, e.g. APAC, AUS, WEU, IND, MEA, NA, SAM, TWN. The region may also contain hints to distinguish specific content. E.g. there can be an WEU and PCBEU, where the 2nd map contains only Postal Code Boundary layers. This parameter is optional. If not specified, PDE will find the region(s) automatically, that cover the tile. The parameter can also contain a comma separated list of regions. If it contains more than one region, PDE will use these regions out of the list that cover the tile. Specifying a region is strongly discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
</tr>
<tr>
<td>release</td>
<td>String</td>
<td>Map release quarter, e.g. 2015Q4, 161J0, 16153 or LATEST (= default) for the latest available map release quarter. Specifying a map release is strongly discouraged, because there is no guarantee how long old map releases are available, hence applications that specify a release might stop working when the release gets retired.</td>
</tr>
</tbody>
</table>

Attributes

Alphabetical list of all available attributes - across all layers - for this map in JSON (doc/attributes.json) or HTML (doc/attributes.html) format.

Resource URI

doc/attributes

Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See <a href="#">Acquiring Credentials</a>.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See <a href="#">Acquiring Credentials</a>.</td>
</tr>
</tbody>
</table>
## Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>region</td>
<td>String</td>
<td>Optional (default=whole world). Map coverage region, e.g. APAC, AUS, WEU, IND, MEA, NA, SAM, TWN. The region may also contain hints to distinguish specific content. E.g. there can be an WEU and PCBEU, where the 2nd map contains only Postal Code Boundary layers. This parameter is optional. If not specified, PDE will find the region(s) automatically, that cover the tile. The parameter can also contain a comma separated list of regions. If it contains more than one region, PDE will use these regions out of the list that cover the tile. Specifying a region is strongly discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
</tr>
<tr>
<td>release</td>
<td>String</td>
<td>Map release quarter, e.g. 2015Q4, 161J0, 16153 or LATEST (= default) for the latest available map release quarter. Specifying a map release is strongly discouraged, because there is no guarantee how long old map releases are available, hence applications that specify a release might stop working when the release gets retired.</td>
</tr>
</tbody>
</table>

---

### Layer

Show description of the thematic layer and its columns in JSON (doc/layer.json) or HTML (doc/layer.html) format.

### Resource URI

doc/layer

#### Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>layer</td>
<td>String</td>
<td>Thematic Layer</td>
</tr>
<tr>
<td>region</td>
<td>String</td>
<td>Optional (default=whole world). Map coverage region, e.g. APAC, AUS, WEU, IND, MEA, NA, SAM, TWN. The region may also contain hints to distinguish specific content. E.g. there can be an WEU and PCBEU, where the 2nd map contains only Postal Code Boundary layers. This parameter is optional. If not specified, PDE will find the region(s) automatically, that cover the tile. The parameter can also contain a comma separated list of regions. If it contains more than one region, PDE will use these regions out of the list that cover the tile. Specifying a region is strongly discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**release**  
String  
Map release quarter, e.g. 2015Q4, 161J0, 16153 or LATEST (= default) for the latest available map release quarter. Specifying a map release is strongly discouraged, because there is no guarantee how long old map releases are available, hence applications that specify a release might stop working when the release gets retired.

### Tile

Returns a data tile with map data content in JSON (/tile.json) or plain text (/tile.txt) format.

### Resource URI

/tile

### Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>callback</td>
<td>String</td>
<td>Specifies the name of a user-defined function used to wrap the JSON response.</td>
</tr>
<tr>
<td>layer</td>
<td>String</td>
<td>Thematic Layer</td>
</tr>
<tr>
<td>region</td>
<td>String</td>
<td>Optional (default=whole world). Map coverage region, e.g. APAC, AUS, WEU, IND, MEA, NA, SAM, TWN. The region may also contain hints to distinguish specific content. E.g. there can be an WEU and PCBEU, where the 2nd map contains only Postal Code Boundary layers. This parameter is optional. If not specified, PDE will find the region(s) automatically, that cover the tile. The parameter can also contain a comma separated list of regions. If it contains more than one region, PDE will use these regions out of the list that cover the tile. Specifying a region is strongly discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
</tr>
<tr>
<td>release</td>
<td>String</td>
<td>Map release quarter, e.g. 2015Q4, 161J0, 16153 or LATEST (= default) for the latest available map release quarter. Specifying a map release is strongly discouraged, because there is no guarantee how long old map releases are available, hence applications that specify a release might stop working when the release gets retired.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>level</td>
<td>Number</td>
<td>Specifies the size of the requested tile: ( N \times N ) degree in WGS84, where ( N = \frac{180}{2^\text{level}} ).</td>
</tr>
<tr>
<td>tilex</td>
<td>Number</td>
<td>Specifies the tile number in West-East direction. This depends on the level. The tile covering the longitude ( \text{LON} ) has ( \text{tileX} = \text{floor}((\text{LON} + 180.0) / \text{tileSize}) ), where ( \text{tileSize} = \frac{180}{2^\text{level}} ). The tile with a given ( \text{tileX} ) value covers the longitude range ( [\text{tileX} \times \text{tileSize} - 180.0 ... (\text{tileX} + 1) \times \text{tileSize} - 180.0] ).</td>
</tr>
<tr>
<td>tiley</td>
<td>Number</td>
<td>Specifies the tile number in South-North direction. This depends on the level. The tile covering the latitude ( \text{LAT} ) has ( \text{tileY} = \text{floor}((\text{LAT} + 90.0) / \text{tileSize}) ), where ( \text{tileSize} = \frac{180}{2^\text{level}} ). The tile with a given ( \text{tileY} ) value covers the latitude range ( [\text{tileY} \times \text{tileSize} - 90.0 ... (\text{tileY} + 1) \times \text{tileSize} - 90.0] ).</td>
</tr>
<tr>
<td>meta</td>
<td>String</td>
<td>Request that the response tile(s) get(s) framed with meta information (layer, level, tilex, tiley, region, release). Currently the parameter value must be 1. In the future, other format variants of meta data might be supported through other meta values. The tile(s) can consist of multiple regions and/or releases. Therefore the response fields are a comma separated list of regions/releases.</td>
</tr>
<tr>
<td>cols</td>
<td>String</td>
<td>Specifies the tile columns to be retained or removed from result. To have only certain columns in the resulting tile, value can be specified as semi-colon-separated column names. As an example, the parameter value cols=\text{LAT};\text{LON} will make the resulting tile include only LAT and LON columns. Columns can be removed from results using the syntax cols=\text{-LAT};\text{-LON}. This will make the resulting tile exclude LAT and LON columns. If cols parameter is specified, all columns must be retaining (only column name) or removed (minus sign before column name). Non existing column names are simply ignored in both cases.</td>
</tr>
</tbody>
</table>

**Tiles**

Returns a set of data tiles with map data content in JSON (/tiles.json) or plain text (/tiles.txt) format. Applications should look up the maximum supported number of tiles per request through the resource serviceconfiguration.json / serviceconfiguration.txt.

**Resource URI**

/tiles
# Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>callback</td>
<td>String</td>
<td>Specifies the name of a user-defined function used to wrap the JSON response.</td>
</tr>
<tr>
<td>layer or layers</td>
<td>String</td>
<td>Thematic Layer(s). Either specify the layer that applies for all requested tiles, or specify the layers per requested tile, as a comma separated list. Either the parameter layer or the parameter layers is required.</td>
</tr>
<tr>
<td>level or levels</td>
<td>String</td>
<td>Specifies the size of the requested tiles: N x N degree in WGS84, where N = 180 / 2^level. Either specify the level that applies for all requested tiles, or specify the levels per requested tile, as a comma separated list. Either the parameter level or the parameter levels is required.</td>
</tr>
<tr>
<td>tilexy</td>
<td>String</td>
<td>Comma separated sequence of tilex,tiley pairs for the requested tiles. The tilex and tiley values are described in the &quot;tile&quot; resource.</td>
</tr>
<tr>
<td>meta</td>
<td>String</td>
<td>Request that the response tile(s) get(s) framed with meta information (layer, level, tilex, tiley, region, release). Currently the parameter value must be 1. In the future, other format variants of meta data might be supported through other meta values. The tile(s) can consist of multiple regions and/or releases. Therefore the response fields are a comma separated list of regions/releases.</td>
</tr>
<tr>
<td>region</td>
<td>String</td>
<td>Optional (default=whole world). Map coverage region, e.g. APAC, AUS, WEU, IND, MEA, NA, SAM, TWN. The region may also contain hints to distinguish specific content. E.g. there can be an WEU and PCBEU, where the 2nd map contains only Postal Code Boundary layers. This parameter is optional. If not specified, PDE will find the region(s) automatically, that cover the tile. The parameter can also contain a comma separated list of regions. If it contains more than one region, PDE will use these regions out of the list that cover the tile. Specifying a region is strongly discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
</tr>
<tr>
<td>release</td>
<td>String</td>
<td>Map release quarter, e.g. 2015Q4, 161J0, 16153 or LATEST (= default) for the latest available map release quarter. Specifying a map release is strongly discouraged, because there is no guarantee how long old map releases are available, hence applications that specify a release might stop working when the release gets retired.</td>
</tr>
<tr>
<td>cols</td>
<td>String</td>
<td>Specifies the tile columns to be retained or removed from result. The client can specify a single column filter or exactly as many comma filters as the number of requested tiles. Columns names must be semi-colon separated, syntax is the same</td>
</tr>
</tbody>
</table>
Static content

Returns a static content data in JSON (/static.json) or plain text (/static.txt) format.

Resource URI

/static

Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>region</td>
<td>String</td>
<td>Optional (default=whole world). Map coverage region, e.g. APAC, AUS, WEU, IND, MEA, NA, SAM, TWN. The region may also contain hints to distinguish specific content. E.g. there can be an WEU and PCBEU, where the 2nd map contains only Postal Code Boundary layers. This parameter is optional. If not specified, PDE will find the region(s) automatically, that cover the tile. The parameter can also contain a comma separated list of regions. If it contains more than one region, PDE will use these regions out of the list that cover the tile. Specifying a region is strongly discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
</tr>
<tr>
<td>release</td>
<td>String</td>
<td>Map release quarter, e.g. 2015Q4, 161J0, 16153 or LATEST (= default) for the latest available map release quarter. Specifying a map release is strongly discouraged, because there is no guarantee how long old map releases are available, hence applications that specify a release might stop working when the release gets retired.</td>
</tr>
<tr>
<td>content</td>
<td>String</td>
<td>Specifies the name of the static content</td>
</tr>
</tbody>
</table>
## Indexes

List all available indexes for this map in JSON (doc/indexes.json) or HTML (doc/indexes.html) format.

### Resource URI

doc/indexes

### Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See <a href="#">Acquiring Credentials</a>.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See <a href="#">Acquiring Credentials</a>.</td>
</tr>
<tr>
<td>region</td>
<td>String</td>
<td>Optional (default=whole world). Map coverage region, e.g. APAC, AUS, WEU, IND, MEA, NA, SAM, TWN. The region may also contain hints to distinguish specific content. E.g. there can be an WEU and PCBEU, where the 2nd map contains only Postal Code Boundary layers. This parameter is optional. If not specified, PDE will find the region(s) automatically, that cover the tile. The parameter can also contain a comma separated list of regions. If it contains more than one region, PDE will use these regions out of the list that cover the tile. Specifying a region is strongly discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
</tr>
<tr>
<td>release</td>
<td>String</td>
<td>Map release quarter, e.g. 2015Q4, 161J0, 16153 or LATEST (= default) for the latest available map release quarter. Specifying a map release is strongly discouraged, because there is no guarantee how long old map releases are available, hence applications that specify a release might stop working when the release gets retired.</td>
</tr>
</tbody>
</table>

## Index

Return the list of tiles that contain information on the given attribute, e.g. a list of link IDs, in JSON (/index.json) or text (/index.txt) format. Applications should look up the maximum supported number of attribute values per request through the resource serviceconfiguration.json / serviceconfiguration.txt.
Resource URI

/index

Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>region</td>
<td>String</td>
<td>Optional (default=whole world). Map coverage region, e.g. APAC, AUS, WEU, IND, MEA, NA, SAM, TWN. The region may also contain hints to distinguish specific content. E.g. there can be an WEU and PCBEU, where the 2nd map contains only Postal Code Boundary layers. This parameter is optional. If not specified, PDE will find the region(s) automatically, that cover the tile. The parameter can also contain a comma separated list of regions. If it contains more than one region, PDE will use these regions out of the list that cover the tile. Specifying a region is strongly discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
</tr>
<tr>
<td>release</td>
<td>String</td>
<td>Map release quarter, e.g. 2015Q4, 161J0, 16153 or LATEST (= default) for the latest available map release quarter. Specifying a map release is strongly discouraged, because there is no guarantee how long old map releases are available, hence applications that specify a release might stop working when the release gets retired.</td>
</tr>
<tr>
<td>layer</td>
<td>String</td>
<td>Thematic Layer</td>
</tr>
<tr>
<td>attributes</td>
<td>String</td>
<td>Specifies the attributes that are searched, as a comma separated list. E.g. LINK_ID.</td>
</tr>
<tr>
<td>values</td>
<td>String</td>
<td>Specifies the attribute values that are searched, as a comma separated list. E.g. 123,456,789. If attributes is a list with several values, then values contains a value for each attribute. E.g. attributes=LEFT_POSTAL_AREA_ID,TUNNEL with values 222,Y,333,Y,444,N.</td>
</tr>
</tbody>
</table>

File

Returns a file in binary format.

Resource URI

/file
Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>callback</td>
<td>String</td>
<td>Specifies the name of a user-defined function used to wrap the JSON response.</td>
</tr>
<tr>
<td>layer</td>
<td>String</td>
<td>Optional (default=whole world). Map coverage region, e.g. APAC, AUS, WEU, IND, MEA, NA, SAM, TWN. The region may also contain hints to distinguish specific content. E.g. there can be an WEU and PCBEU, where the 2nd map contains only Postal Code Boundary layers. This parameter is optional. If not specified, PDE will find the region(s) automatically, that cover the tile. The parameter can also contain a comma separated list of regions. If it contains more than one region, PDE will use these regions out of the list that cover the tile. Specifying a region is strongly discouraged, because regions might change and hence applications that specify a region might stop working when the region gets discontinued, renamed, splitted or changed otherwise.</td>
</tr>
<tr>
<td>region</td>
<td>String</td>
<td>Map release quarter, e.g. 2015Q4, 161J0, 16153 or LATEST (= default) for the latest available map release quarter. Specifying a map release is strongly discouraged, because there is no guarantee how long old map releases are available, hence applications that specify a release might stop working when the release gets retired.</td>
</tr>
<tr>
<td>path</td>
<td>Text</td>
<td>Specifies a relative file path</td>
</tr>
</tbody>
</table>

ServiceConfiguration

Show service settings and limits that are subject to change and hence are not statically documented.

Resource URI

serviceconfiguration

Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
</tbody>
</table>
Bounding Box Search

Returns map layer content that overlaps a bounding box.

Caution: The recommended way to use PDE is the tile interface, with caching on the client side. This search function is less efficient and provided only for specific use cases.

Note that using PDE for Geo Fencing on map data may include additional license cost. Please contact your account executive.

Resource URI

/search/bbox.json

Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>callback</td>
<td>String</td>
<td>Specifies the name of a user-defined function used to wrap the JSON response.</td>
</tr>
<tr>
<td>layer_id</td>
<td>String</td>
<td>Thematic Layer</td>
</tr>
<tr>
<td>key_attribute</td>
<td>String</td>
<td>Comma separated list of this layer's key column(s).</td>
</tr>
<tr>
<td>attributes</td>
<td>String</td>
<td>Specifies the tile columns to be retained or removed from result. To have only certain columns in the resulting tile, value can be specified as semi-colon-separated column names. As an example, the parameter value attributes=LAT;LON will make the resulting tile include only LAT and LON columns. Columns can be removed from results using the syntax attributes=-LAT;-LON. This will make the resulting tile exclude LAT and LON columns. If attributes parameter is specified, all columns must be retaining (only column name) or removed (minus sign before column name). Non existing column names are simply ignored in both cases.</td>
</tr>
<tr>
<td>bbox</td>
<td>String</td>
<td>Search boundary rectangle coordinates in WGS84 degree: North,West;South,East.</td>
</tr>
<tr>
<td>geom</td>
<td>String</td>
<td>local, full or none. Specifies the geometry representation in the result. Default = local. Local geometry is used for map display purposes, returning geometry</td>
</tr>
</tbody>
</table>
Corridor Search

Returns map layer content that overlaps a corridor polygon.

Caution: The recommended way to use PDE is the tile interface, with caching on the client side. This search function is less efficient and provided only for specific use cases.

Note that using PDE for Geo Fencing on map data may include additional license cost. Please contact your account executive.

Resource URI

/search/corridor.json

Resource Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>callback</td>
<td>String</td>
<td>Specifies the name of a user-defined function used to wrap the JSON response.</td>
</tr>
<tr>
<td>layer_ids</td>
<td>String</td>
<td>Comma separated list of thematic Layers</td>
</tr>
<tr>
<td>key_attributes</td>
<td>String</td>
<td>Comma separated list of this layer’s key column(s).</td>
</tr>
<tr>
<td>attributes</td>
<td>String</td>
<td>Specifies the tile columns to be retained or removed from result. To have only certain columns in the resulting tile, value can be specified as semi-colon-separated column names. As an example, the parameter value attributes=LAT;LON will make the resulting tile include only LAT and LON columns. Columns can be removed from results using the syntax attributes=-LAT;-LON. This will make the resulting tile exclude LAT and LON columns. If attributes parameter is specified, all columns must be retaining (only column name) or removed (minus sign before column name). Non existing column names are simply ignored in both cases.</td>
</tr>
</tbody>
</table>
**Parameter** | **Type** | **Description**
---|---|---
geom | String | local, full or none. Specifies the geometry representation in the result. Default = local. Local geometry is used for map display purposes, returning geometry pieces that cover the given search radius, bounding box or corridor polygon. Full geometry is used for interactive editing, where the original geometry is required. None is used for applications like geofencing, which most of the time want to know only the ids of the geofence points/lines polygones they are in or near. Note: Not all geometry options are supported in all resources.

radius | Number | The buffer search radius in meters. All geometries within this radius distance from the corridor will be returned.

corridor | String | WGS84 degree coordinates of the polyline used as corridor center line, e.g. latitude 1;longitude 1,latitude 2;longitude 2;... Route id and corridor id are alternatives.

route_id | String | A route_id obtained from a previous Router call. This route_id will be turned into a corridor polyline. Route id and corridor id are alternatives.

---

**Proximity Search**

Returns map layer content in a circle around the location.

Caution: The recommended way to use PDE is the tile interface, with caching on the client side. This search function is less efficient and provided only for specific use cases.

Note that using PDE for Geo Fencing on map data may include additional license cost. Please contact your account executive.

**Resource URI**

/search/proximity.json

**Resource Parameters**

| Parameter | Type | Description |
---|---|---|
app_id | String | Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials. |
app_code | String | Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials. |
callback | String | Specifies the name of a user-defined function used to wrap the JSON response. |
layer_ids | String | Comma separated list of thematic Layers |
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>key_attributes</td>
<td>String</td>
<td>Comma separated list of this layer's key column(s).</td>
</tr>
<tr>
<td>attributes</td>
<td>String</td>
<td>Specifies the tile columns to be retained or removed from result. To have only certain columns in the resulting tile, value can be specified as semi-colon-separated column names. As an example, the parameter value attributes=LAT;LON will make the resulting tile include only LAT and LON columns. Columns can be removed from results using the syntax attributes=-LAT;-LON. This will make the resulting tile exclude LAT and LON columns. If attributes parameter is specified, all columns must be retaining (only column name) or removed (minus sign before column name). Non existing column names are simply ignored in both cases.</td>
</tr>
<tr>
<td>geom</td>
<td>String</td>
<td>local, full or none. Specifies the geometry representation in the result. Default = local. Local geometry is used for map display purposes, returning geometry pieces that cover the given search radius, bounding box or corridor polygon. Full geometry is used for interactive editing, where the original geometry is required. None is used for applications like geofencing, which most of the time want to know only the ids of the geofence points/lines polygons they are in or near. Note: Not all geometry options are supported in all resources.</td>
</tr>
<tr>
<td>proximity</td>
<td>String</td>
<td>lat,lon or lat,lon.radius. WGS84 degree coordinate, optionally with search radius in meters (default = 0). All geometries overlapping the circle around the location will be returned.</td>
</tr>
</tbody>
</table>

**Quad Key Search**

Returns map layer content within the quad key map area.

Caution: The recommended way to use PDE is the tile interface, with caching on the client side. This search function is less efficient and provided only for specific use cases.

Note that using PDE for Geo Fencing on map data may include additional license cost. Please contact your account executive.

**Resource URI**

`/search/quadkey.json`

**Resource Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_id</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
</tbody>
</table>
#### Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>app_code</td>
<td>String</td>
<td>Typically, but not guaranteed to be, 20 bytes Base64 URL-safe encoded string used for the authentication of the client application. See Acquiring Credentials.</td>
</tr>
<tr>
<td>callback</td>
<td>String</td>
<td>Specifies the name of a user-defined function used to wrap the JSON response.</td>
</tr>
<tr>
<td>layer_id</td>
<td>String</td>
<td>Thematic Layer</td>
</tr>
<tr>
<td>key_attribute</td>
<td>String</td>
<td>Comma separated list of this layer’s key column(s).</td>
</tr>
<tr>
<td>attributes</td>
<td>String</td>
<td>Specifies the tile columns to be retained or removed from result. To have only certain columns in the resulting tile, value can be specified as semi-colon-separated column names. As an example, the parameter value attributes=LAT;LON will make the resulting tile include only LAT and LON columns. Columns can be removed from results using the syntax attributes=-LAT;-LON. This will make the resulting tile exclude LAT and LON columns. If attributes parameter is specified, all columns must be retaining (only column name) or removed (minus sign before column name). Non existing column names are simply ignored in both cases.</td>
</tr>
<tr>
<td>geom</td>
<td>String</td>
<td>local, full or none. Specifies the geometry representation in the result. Default = local. Local geometry is used for map display purposes, returning geometry pieces that cover the given search radius, bounding box or corridor polygon. Full geometry is used for interactive editing, where the original geometry is required. None is used for applications like geofencing, which most of the time want to know only the ids of the geofence points/lines polygones they are in or near. Note: Not all geometry options are supported in all resources.</td>
</tr>
<tr>
<td>quad_key</td>
<td>Number</td>
<td>The quad key number of the map tile area to search from.</td>
</tr>
</tbody>
</table>

#### HTTP Status Codes

Platform Data Extension API supports the standard HTTP status codes

<table>
<thead>
<tr>
<th>Error code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 OK</td>
<td>Indicates success, but may also be returned when an invalid resource name and/or an invalid parameter combination has been used in the request.</td>
</tr>
<tr>
<td>400 Bad request</td>
<td>Invalid parameter value in the request, for example non-existing layer requested.</td>
</tr>
<tr>
<td>401 Unauthorized</td>
<td>Invalid authentication.</td>
</tr>
<tr>
<td>403 Forbidden</td>
<td>Incorrect app_code or app_id in the request. See Acquiring Credentials for more information.</td>
</tr>
<tr>
<td>404 Not found</td>
<td>Resource not found.</td>
</tr>
<tr>
<td>500 Internal error</td>
<td>There is a server configuration issue.</td>
</tr>
<tr>
<td>Error code</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>503 Service Unavailable</td>
<td>Indicates that the service is temporarily unavailable due to system overload or maintenance or the resource is currently disabled.</td>
</tr>
</tbody>
</table>
Chapter 5

Coverage Information

The currently available maps can be looked up on

https://pde.cit.api.here.com/1/doc/maps.json?
app_id={YOUR_APP_ID}&app_code={YOUR_APP_CODE}  (CIT)

or

https://pde.api.here.com/1/doc/maps.json?
app_id={YOUR_APP_ID}&app_code={YOUR_APP_CODE}
(PRD) respectively.