



Location Intelligence

# Spectrum™ Technology Platform

Version 12.0

Global Geocoding REST Web Services Guide



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# 1 - Using the Global Geocoding REST API

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## Introduction

The Global Geocoding REST API allows you to develop and deploy geocoding desktop, mobile or Web applications that are capable of delivering location information for over 120 countries.

This guide contains information on using the Global Geocoding REST API which provides:

- Forward geocoding, using input addresses and returning latitude/longitude coordinates
- Reverse geocoding, using input coordinates and returning addresses or locations
- Options that allow control of geocoding dataset resources, matching criteria, number of candidates, and other preferences.

### *Sample Application*




A sample application is provided on the Spectrum Global Geocode landing page. This is an interactive application that demonstrates the geocoding API.

**Note:** Prior to using the sample application: You must first install and configure your geocoding datasets using either the Database Resource tool in the Management Console or the Global Geocode database CLI commands. For more information on installing the geocoding datasets, refer to the Spectrum™ Technology Platform *Installation Guide* and the Spectrum™ Technology Platform *Administration Guide*.

## Adding a Global Geocoding Module Database Resource

Whenever you install a new database resource or modify an existing database resource you must define it in the Management Console in order for it to become available on your system. This procedure describes how to add or modify a Global Geocoding Module database resource.

**Important:** You can only define a single Global Geocoding Module database resource that contains all of the country datasets.






1. If you haven't already done so, install the dataset files on your system. For instructions on installing databases, see the *Spectrum™ Technology Platform Installation Guide*.
2. In Management Console, under **Resources**, choose **Spectrum Databases**.
3. To create a new database resource, click the Add button . To make changes to an existing database resource, select it, then click the Edit button . To delete a database resource, select it, then click the Delete button .

**Note:** You can copy a Global Geocoding database resource to use for another installed module; however, a copy of a database resource cannot be made for the Global Geocoding Module since it can only have one database resource.

4. If you are creating a new database resource, on the **Add Database** page, enter a name for the database resource in the **Name** field.
5. In the **Pool size** field, specify the maximum number of concurrent requests you want this database to handle.

The optimal pool size varies by module. You will generally see the best results by setting the pool size between one-half to twice the number of CPUs on the server, with the optimal pool size for most modules being the same as the number of CPUs. For example, if your server has four CPUs you may want to experiment with a pool size between 2 (one-half the number of CPUs) and 8 (twice the number of CPUs) with the optimal size possibly being 4 (the number of CPUs).

**Tip:** You should conduct performance tests with various settings to identify the optimal pool size and runtime instance settings for your environment.

6. In the **Module** field, select `GlobalGeocode`. The **Type** field, `Global Geocode Dataset`, is selected by default.
7. To add a dataset, under **Data Source**, click the Add button . In the **Path** field, specify the folder that contains the dataset files. You can type in a path or click the Browse button  to locate the dataset you need, then click **Ok**.
8. If you have additional datasets to add, click the Add button . To edit a dataset path, select the dataset, then click the Edit button . To remove a dataset, select the dataset, then click the Delete button .
9. When you are done with your changes, click **Save**.

**Note:** If the database fails to configure due to insufficient resources, you may need to increase the Java Virtual Machine (JVM) initial heap size ( $X_{ms}$ ) and/or add the max heap size ( $X_{mx}$ ) in the `java.vargs` file. This file is located in the `SpectrumDirectory\server\modules\GlobalGeocode` folder, where *SpectrumDirectory* is your Spectrum installation directory.

## Input Address Guidelines

Follow these address guidelines for best performance:

- Ensure that your input addresses are as complete and accurate as possible. If there are errors in your input addresses, the Global Geocoding REST API may still be able to geocode those addresses, but there may be more than one possible match.
- Include postal codes in your input addresses if you have them. This is not required, but it allows the Global Geocoding REST API to perform postal geocoding. This may give you more accurate results for some addresses, depending on the country and on the completeness and accuracy of other address components.
- Format your input addresses consistently. The Global Geocoding REST API can handle input addresses in a wide variety of input formats, or can handle unformatted (single line) input. But you can get more accurate and faster results if your input addresses are consistently formatted and conform to country-specific address conventions. Even if your input address are single line (unformatted), you may get better results and performance if the address components are ordered consistently.
- Check your country's section in the [Appendix A - Country-Specific Information](#) for more detailed country-specific address guidelines.

## Geocoding Capabilities

The Global Geocoding REST API provides the means for you to retrieve information about the capabilities of the installed geocoding engine. The following information can be returned:

- available geocoding engines
- supported countries
- supported operations with associated required and optional inputs
- custom fields

The capabilities can be returned for a single country with a named operation or for all operations, as well as the capabilities for all countries.

The following table provides information on how to retrieve information on the geocoding engine's **Capabilities**.

REST API	Feature Implementation
<b>Service:</b>	Capabilities

REST API	Feature Implementation
----------	------------------------

---

<b>Request Type:</b>	GET
----------------------	-----

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For more details, see [Capabilities Service](#) on page 99.

## Configured Geocoding Datasets

**Note:** Geocoding datasets are also referred to as "Dictionaries" or "Databases".

The Global Geocoding REST API provides the means for you to retrieve information about the installed and configured geocoding datasets. Each listed geocoding dataset includes information on the installation path, type of dataset, country support and more.

A list of geocoding datasets can be returned for a single country, as well as a list of all the installed and configured geocoding datasets.

The following table provides information on how to retrieve information on the geocoding engine's **Geocoding Datasets**.

REST API	Feature Implementation
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<b>Service:</b>	Dictionaries
-----------------	--------------

---

<b>Request Type:</b>	GET
----------------------	-----

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For more details, see [Dictionaries Service](#) on page 111.

For information on setting the dataset search order, refer to [Preferred Geocoding Dataset Search Order](#) on page 8

## Matching Options

This section covers the following matching options:

- [Geocoding dataset search order](#)
- [Match modes](#)
- [Must match fields](#)

## Preferred Geocoding Dataset Search Order

The Global Geocoding REST API is able to process addresses using multiple databases at the same time. This allows you to find the best possible match from a variety of data sources and types of data (point data as well as street segment data). The Global Geocoding REST API processes these multiple data sources using the configured geocoding dataset order. When an exact address match is made, the searching stops rather than continuing on to search in additional geocoding datasets. This saves on processing time. When an exact match is not found, the search continues in the available data sources.

### Setting the Geocoding Dataset Search Order

#### *Default Search Order*

The default geocoding dataset search order searches point-level datasets before street-level datasets. This is reflected in the list of configured geocoding datasets.

#### *Changing the Search Order*

You can change the search order or remove a geocoding dataset so it is not used in matching by modifying the preferred geocoding dataset search order in the preferences. The search order is a List of strings. If a geocoding dataset is left off the list, it is not used in matching. The geocoding dataset order is written using the string value of the index in configured geocoding datasets. The default order starts with an index of "0". Setting the order to {"2", "1", "0"} would invert the configured order for a country with 3 geocoding datasets.

- To set the order of geocoding datasets for **single geocode or reverse geocode operations**:

API	Description
REST	Send a POST request to the desired service - geocode or reverse geocode. Set the order using the <code>preferredDictionaryOrder</code> element in the <code>preferences</code> object. For more information, see <a href="#">Geocoding POST Request</a> and <a href="#">Reverse Geocoding POST Request</a> .

- To set the order of geocoding datasets for **multiple geocode or reverse geocode operations** (`geocodeMultiple` or `reverseGeocodeMultiple`):

The multiple geocode/reverse geocode operations may include multiple countries, therefore, you need to specify the country ISO-3166 3-character country code in the search order list. For example: {"USA", "2", "1", "0", "FRA", "0", "1"}. Use the methods specified in the table above to set the preferred geocoding dataset order.

If the list does not start with a country code, an exception will be generated. If a country is not found in the list, its configured dictionary order is used.



**Note:** For USA:

- The USA custom option `FIND_DB_ORDER` will supersede the set preferred geocoding dataset order setting/method.
- For single or multiple reverse geocoding, the set preferred geocoding dataset order setting/method is not supported in USA and is ignored.

### Setting Searching and Matching Preferences When Using Standard and Custom Dictionaries

For countries that support both custom user dictionaries and standard geocoding datasets, a shortcut is provided for specifying which datasets to use for matching. You can set a custom preference with the key `KEY_CUSTOM_DICTIONARY_USAGE` that will define what to do when both custom and standard dictionaries are available in the geocoding engine. This key is only supported in forward geocoding.

Note that when `preferredDictionaryOrder` has been defined, then this key will be ignored.

**Note:** For USA only, if `FIND_DB_ORDER` is set in custom preferences, then `KEY_CUSTOM_DICTIONARY_USAGE` will be ignored.

The possible values allowed for this key are:

<b>USE_CUSTOM_DICTIONARIES_ONLY</b>	If both custom and standard dictionaries are configured, only search in the custom dictionaries. If no custom dictionaries are configured, this setting is ignored.
<b>USE_STANDARD_DICTIONARIES_ONLY</b>	If both custom and standard dictionaries are configured, only search in the standard dictionaries. If no standard dictionaries are configured, this setting is ignored.
<b>PREFER_CUSTOM_DICTIONARIES</b>	When equivalent candidates are found in both custom and standard dictionaries, prefer the candidates from the custom dictionaries. Note that the best quality match candidate will be returned, even if the match is from a non-preferred dictionary.
<b>PREFER_STANDARD_DICTIONARIES</b>	When equivalent candidates are found in both custom and standard dictionaries, prefer the candidates from the standard dictionaries. Note that the best quality match candidate will be returned, even if the match is from a non-preferred dictionary.

For information on setting up a custom option, see [Custom Options](#) on page 24.

## Match Modes

Match modes determine the leniency used to make a match between your input and the geocoding dataset. Select a match mode based on the quality of your input and your desired output. For

example, if you have an input database that is prone to errors, you may want to select the relaxed match mode.

The following match modes are available - they are listed from most to least restrictive.

<b>Exact</b>	Requires a very tight match. This restrictive mode generates the fewest match candidates, which decreases the processing time. When using this mode, ensure that your input is very clean; free of misspellings and incomplete addresses.
<b>Standard</b>	Requires a close match and generates a moderate number of match candidates. Default.
<b>Relaxed</b>	Allows a loose match and generates the most match candidates, which increases the processing time and results in more multiple matches. Use this mode if you are not confident that your input is clean; free of misspellings and incomplete addresses.
<b>Custom</b>	Provides the capability for you to define the matching criteria by setting MustMatch fields.
<b>Interactive (USA only)</b>	Available in single-line address matching only. This mode is designed to better handle the specific matching challenges presented by interactive matching. Interactive mode permits for more flexible matching patterns and may, in some cases, return additional possible matches than relaxed match mode. For more information, see <a href="#">Interactive Match Mode</a> below.
<b>CASS (USA only)</b>	Imposes additional rules to ensure compliance with the USPS CASS regulations. The purpose of this match mode is to create mailable addresses for USPS mailing discounts. Use this mode to standardize your input for mailing. This mode generates a large number of match candidates. For more information, see <a href="#">CASS Mode</a> below.

The following table provides information on how to set the **match mode**.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Type:</b>	GET
<b>Parameter:</b>	matchMode
<b>Request Type:</b>	POST
<b>Object : Element:</b>	preferences : matchMode

For more details, see [Geocode GET Request](#) on page 34 and [Geocode POST Request](#) on page 40.

### *Interactive Match Mode (USA only)*

Interactive mode is designed for interactive mobile/web applications. In this use case, it is expected that users may enter single-line addresses that contain misspelled, inaccurate, and/or missing information, so this input is processed utilizing a looser set of criteria for matching than the other match modes. As a result, the matching output could include multiple match candidates. The list of matches would be presented to the user who could then select the desired match candidate. If an exact match is found, then that single match candidate is returned; a mix of accurate and inaccurate results are not presented.

The capabilities and restrictions of Interactive match mode are as follows:

- Interactive match mode is only available in single-line address processing. If an attempt is made to run a non-single-line address when the match mode is set to `INTERACTIVE`, the match mode is temporarily changed to `RELAXED` and the address is processed in relaxed mode. When the matching process completes, the match mode is automatically reverted back to `INTERACTIVE`.
- Interactive match mode allows users to break the cardinal rule: If the user enters 123 S Main and there is only 123 N Main, a match is made with a match code that reflects the modified directional.
- Interactive match mode handles cases where users transpose pre-directionals with postdirectionals without penalty.
- Interactive match mode ignores the `FIND_PREFER_ZIP_OVER_CITY` custom option setting. When the city and ZIP Code don't match correctly, the best geocoding result will be returned based on an analysis of all the input address elements.
- When operating in interactive mode, in cases where a point address or interpolated street address result cannot be determined, the most accurate level of ZIP-9, ZIP-7 or ZIP-5 centroid available may be returned.

### *CASS Match Mode (USA only)*

The CASS match mode imposes additional rules to ensure compliance with the USPS CASS regulations. The purpose of this match mode is to create mailable addresses for USPS mailing discounts. Use this mode to standardize your input for mailing. This mode generates a large number of match candidates.

The CASS match mode deviates from the other modes in its processing. This mode does not perform intersection, building name, or spatial alias (TIGER, TomTom, NAVTEQ street name alias or Centrus alias) or matches to User Dictionaries. It does not match to candidates from data sources that do not have USPS equivalent records. This mode recognizes and parses two unit numbers on the same address line, for example a building and unit number.

## Must Match Fields

"Must Match" fields allow you to set the match criteria for determining match candidates. The following "Must Match" fields are available:

**matchOnAddressNumber** A match must be made to the input address number.

<b>matchOnPostCode1</b>	A match must be made to the input <code>PostCode1</code> field.
<b>matchOnAreaName1</b>	A match must be made to the input <code>AreaName1</code> field. See your country's section in the appendix for the definition of the <code>AreaName1</code> field.
<b>matchOnAreaName2</b>	A match must be made to the input <code>AreaName2</code> field. See your country's section in the appendix for the definition of the <code>AreaName2</code> field.
<b>matchOnAreaName3</b>	A match must be made to the input <code>AreaName3</code> field. See your country's section in the appendix for the definition of the <code>AreaName3</code> field.
<b>matchOnAreaName4</b>	A match must be made to the input <code>AreaName4</code> field. See your country's section in the appendix for the definition of the <code>AreaName4</code> field.
<b>matchOnAllStreetFields</b>	A match must be made to the input street name, type and directional fields.
<b>mustMatchInput</b>	The other must match fields are ignored and any of the possible input fields provides, such as postal code and area names, must match against the candidate for the candidate to be returned.

**Note:** For USA, the Must Match field settings are not supported in single-line address matching.

The following table provides information on how to set a Must Match field.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Type:</b>	POST
<b>Object : Element</b>	<code>preferences : mustMatchFields</code>
<b>Key/Value:</b>	Set the desired <code>mustMatchFields = true</code> .
<b>Additional Information:</b>	To enable setting the <code>mustMatchFields</code> option, <code>matchMode</code> must be set to <i>Custom</i> .

For more information, see [Geocode POST Request](#) on page 40.

## Geocoding Options

This section covers the following topics:

- [Geocode types](#)
- [Geocode placement](#)
- [Geocoding fallback](#)
- [Geocode coordinate reference system](#)

### Geocode Types

There are different ways that an address can be geocoded. The following lists the geocoding types from the most accurate to least accurate:

- **Address:**
  - **Point-level** - The geocode is located at the center of the actual building footprint or parcel. This option requires that a point-level geocoding dataset is installed or a User Dictionary with point-level information.
  - **Interpolated Street Address** - This uses street address interpolation to derive the geocode, which is an approximate location of an address on a street segment.
  - **Street Centroid** - The geocode is the centroid of a street segment.
- **Postal** - The geocode is the centroid of a postal code area.
- **Geographic** - The geocode is the centroid of a geographic area; for example, a city, suburb or village.

The support for these geocode types depends on the type of data available in your configured geocoding dataset(s). Refer to your country's section to locate geocoding level support information.

In addition, there are a couple more geocode types that are offered as custom options for a subset of countries. These two geocode types are described in the following sections.

The following table provides information on how to specify a **geocode type**.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Type:</b>	POST

REST API	Feature Implementation
----------	------------------------

<b>Object : Element:</b>	<code>type : geocodeType</code>
--------------------------	---------------------------------

For more information, see [Geocode POST Request](#) on page 40.

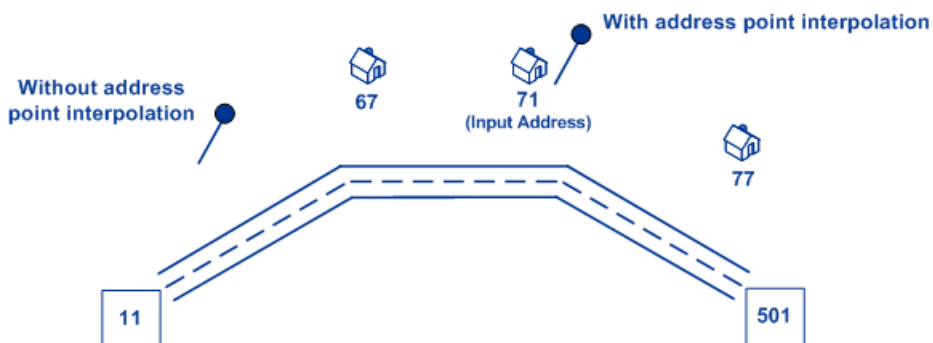
### Address Point Interpolation

Address point interpolation is a patented process that results in a more accurate interpolated point. It improves upon regular street segment interpolation by using point data in the interpolation process, as opposed to using street segments alone.

**Note:** Address point interpolation requires both a street-level and a point-level geocoding dataset.

**Note:** For USA, this feature is not supported with point addresses in Auxiliary files.

The following illustration shows how address point interpolation works. In the example, the input house number is 71. The geocoding dataset contains address points for 67 and 77. The street segment has a range of 11 to 501. With address point interpolation, the Global Geocoding REST API performs the interpolation for the input house number 71 using the points of 67 and 77. Without address point interpolation, the Global Geocoding REST API performs the interpolation with the street segment end points of 11 and 501, resulting in a far less accurate result.



**Note:** This feature is only supported for the following countries:

- [Australia \(AUS\)](#) on page 145
- [Canada \(CAN\)](#) on page 221
- [France \(FRA\)](#) on page 297
- [Germany \(DEU\)](#) on page 309
- [Great Britain \(GBR\)](#) on page 317
- [Portugal \(PRT\)](#) on page 518
- [Singapore \(SGP\)](#) on page 554
- [Sweden \(SWE\)](#) on page 584
- [United States \(USA\)](#) on page 632

The following table provides information on how to implement **address point interpolation**.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Types:</b>	POST
<b>Object : Element</b>	preferences : customPreferences
<b>Key/Value:</b>	USE_ADDRESS_POINT_INTERPOLATION = true

For more details, see [Geocode POST Request](#) on page 40.

### Centerline Matching

Centerline matching is used with point-level matching to tie a point-level geocode with its parent street segment. This functionality is useful for routing applications.

Centerline matching provides you with additional data about the parent street segment that is not retrievable using only the point-level match. The output information also includes the bearing from the point data geocode to the centerline match.

Centerline matching requires that a point-level geocoding dataset is installed.

**Note:** This feature is only supported for the following countries:

- [Australia \(AUS\)](#) on page 145
- [Canada \(CAN\)](#) on page 221
- [Portugal \(PRT\)](#) on page 518
- [United States \(USA\)](#) on page 632

The following table provides information on how to implement the **centerline matching** feature.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Types:</b>	POST
<b>Object : Element</b>	preferences : customPreferences
<b>Key/Value:</b>	USE_CENTERLINE_OFFSET = true

REST API	Feature Implementation
----------	------------------------

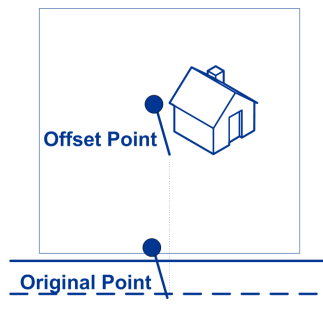
<b>Additional Information:</b>	CENTERLINE_OFFSET and CENTERLINE_OFFSET_UNIT custom keys are used in conjunction with USE_CENTERLINE_OFFSET.
--------------------------------	--

For more details, see [Geocode POST Request](#) on page 40.

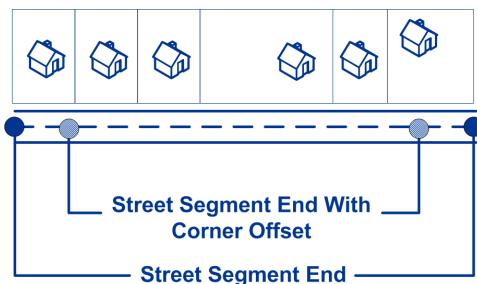
## Geocode Placement

The following options allow optimizing geocoding placement when doing street-level geocoding:

- **Street offset** - This value is used to prevent the geocode from being placed in the middle of the street. The street offset is also used to prevent addresses across the street from each other from being given the same point. The street offset units can be specified in either feet or meters.



- **Corner offset** - This value is used to prevent addresses at street corners from being given the same geocode as the intersection. Defines the offset position of the geocoded point with respect to the corner. The corner offset units can be specified in either feet or meters.



The following table provides information on how to implement the **street offset** feature.

REST API	Feature Implementation
----------	------------------------

<b>Service:</b>	Geocode
-----------------	---------

<b>Request Type:</b>	GET
----------------------	-----



REST API	Feature Implementation
<b>Parameter:</b>	<code>streetOffset</code>
<b>Request Type:</b>	POST
<b>Object : Element</b>	<code>preferences : streetOffset</code>
<b>Additional Information:</b>	<code>streetOffsetUnits</code> is used in conjunction with <code>streetOffset</code> .

For more information, see [Geocode GET Request](#) on page 34 and [Geocode POST Request](#) on page 40.

The following table provides information on how to implement the **corner offset** feature.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Type:</b>	GET
<b>Parameter:</b>	<code>cornerOffset</code>
<b>Request Type:</b>	POST
<b>Object : Element</b>	<code>preferences : cornerOffset</code>
<b>Additional Information:</b>	<code>cornerOffsetUnits</code> is used in conjunction with <code>cornerOffset</code> .

For more information, see [Geocode GET Request](#) on page 34 and [Geocode POST Request](#) on page 40.

## Geocoding Fallback

Using the geocoding fallback option enables the geocoder to attempt to return a less precise geocode when an address-level geocode cannot be determined.

The geocoding fallback options are as follows:

- **Fallback to Postal** - Attempts to return a postal code centroid.

- **Fallback to Geographic** - Attempts to return a centroid of a geographic area.

An additional fallback option can be implemented to cover the cases where either a country geocoder is not installed or a country geocoder is available but does not have a geocoding dataset installed, as follows:

- **Fallback to World** - Attempts to use the World Geocoder (XWG) to return a geocode. The World Geocoder (XWG) may return either a postal or geographic geocode depending on the level of support in the XWG geocoding dataset. The World Geocoder (XWG) is included in your installation. To implement this feature, you must install the World Geocoder geocoding dataset. The following examples, show the responses for cases where the feature is enabled with and without the World Geocoder geocoding dataset installed.

*Scenario 1:* World Geocoder (XWG) is installed WITHOUT data:

- `FALLBACK_TO_WORLD = false` – The exception `Error initializing data manager.` is returned when an attempt is made to geocode for a country that does not have data installed.
- `FALLBACK_TO_WORLD = true` – The exception `Error initializing data manager.` is returned when World Geocoder (XWG) data is not installed..

*Scenario 2:* World Geocoder (XWG) is installed WITH data

- `FALLBACK_TO_WORLD = false` – The exception `Error initializing data manager.` is returned.
- `FALLBACK_TO_WORLD = true` – If the fallback is performed, the results are returned, if possible.

### *Fallback to Postal*

The following table provides information on how to implement the `Fallback to Postal` feature.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Type:</b>	GET
<b>Parameter:</b>	<code>fallbackPostal = true</code>
<b>Request Type:</b>	POST
<b>Object : Element</b>	<code>preferences : fallbackToPostal = true</code>

For more information, see [Geocode GET Request](#) on page 34 and [Geocode POST Request](#) on page 40.

### *Fallback to Geographic*

The following table provides information on how to implement the `Fallback to Geographic` feature.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Type:</b>	GET
<b>Parameter:</b>	<code>fallbackGeo = true</code>
<b>Request Type:</b>	POST
<b>Object : Element</b>	<code>preferences: fallbackToGeographic = true</code>

For more information, see [Geocode GET Request](#) on page 34 and [Geocode POST Request](#) on page 40.

### *Fallback to World*

The following table provides information on how to implement the `Fallback to World` feature.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Type:</b>	POST
<b>Object : Element</b>	<code>customPreferences : FALLBACK_TO_WORLD = true</code>

The `customPreferences` object is specified in the `preferences` object. For example, in a POST JSON request, it would be specified as follows:

```

"preferences" : {
  "customPreferences" : {
    "FALLBACK_TO_WORLD" : "true"
  }
}

```

In a POST XML request, it would be specified as follows:

```
<preferences>
  <customPreferences>
    <entry>
      <key>FALLBACK_TO_WORLD</key>
      <value>>true</value>
    </entry>
  </customPreferences>
</preferences>
```

For more information, see [Geocode POST Request](#) on page 40.

## Coordinate Reference System

You can specify the coordinate system that you want to convert the geometry to. The format must be the European Petroleum Survey Group (EPSG) code or the SRID code. The default is EPSG:4326.

The following table provides information on how to specify the **coordinate reference system**.

REST API	Feature Implementation
<b>Service:</b>	Geocode
Request Type:	POST
<b>Object : Element</b>	preferences : clientCoordSysName
<b>Format:</b>	codespace:code

For more information, see [Geocode POST Request](#) on page 40.

## Reverse Geocoding Options

For reverse geocoding, the following options are available:

- Search distance
- Geocode placement
- Coordinate reference system

The following sections provide more detailed information on these options.

## Search Distance

The search distance is the distance of the radius in which to search for a match to the input coordinates. This value can be specified in either feet or meters.

The following table provides information on how to specify the **search distance**.

REST API	Feature Implementation
<b>Service:</b>	<code>reverseGeocode</code>
<b>Request Type:</b>	GET
<b>Parameter:</b>	<code>distance</code>
<b>Request Type:</b>	POST
<b>Object : Element</b>	<code>preferences : distance</code>
<b>Additional Information:</b>	<code>distanceUnits</code> is used in conjunction with <code>distance</code> .

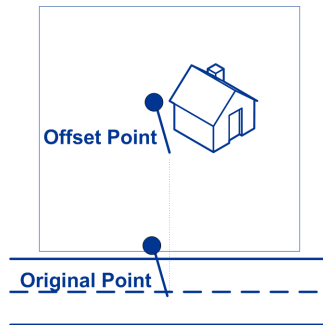
For more information, see [Reverse Geocode GET Request](#) on page 72 and [Reverse Geocode POST Request](#) on page 73.

## Geocode Placement

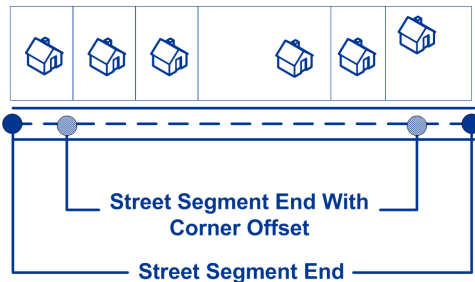
The following options allow optimizing geocoding placement when doing street-level geocoding:

- **Street offset** - This value is used to prevent the geocode from being placed in the middle of the street. The street offset is also used to prevent addresses across the street from each other from

being given the same point. The street offset units can be specified in either feet or meters.



- **Corner offset** - This value is used to prevent addresses at street corners from being given the same geocode as the intersection. Defines the offset position of the geocoded point with respect to the corner. The corner offset units can be specified in either feet or meters.



The following table provides information on how to implement the **street offset** feature.

REST API	Feature Implementation
<b>Service:</b>	<code>reverseGeocode</code>
<b>Request Type:</b>	POST
<b>Object : Element</b>	<code>preferences : streetOffset</code>
<b>Additional Information:</b>	<code>streetOffsetUnits</code> is used in conjunction with <code>streetOffset</code> .

For more details, see [Reverse Geocode POST Request](#) on page 73.

The following table provides information on how to implement the **corner offset** feature.

REST API	Feature Implementation
<b>Service:</b>	<code>reverseGeocode</code>

REST API	Feature Implementation
<b>Request Type:</b>	POST
<b>Object : Element</b>	preferences : cornerOffset
<b>Additional Information:</b>	cornerOffsetUnits is used in conjunction with cornerOffset.

For more information, see [Reverse Geocode POST Request](#) on page 73.

## Coordinate Reference System

You can specify the coordinate reference system that you want to convert the geometry to. The format must be the European Petroleum Survey Group (EPSG) code or the SRID code. The default is EPSG:4326.

The following table provides information on how to specify the **coordinate reference system**.

REST API	Feature Implementation
<b>Service:</b>	reverseGeocode
<b>Request Type:</b>	GET
<b>Parameter:</b>	coordSysName
<b>Request Type:</b>	POST
<b>Object : Element</b>	preferences : clientCoordSysName
<b>Format:</b>	codespace:code

For more information, see [Reverse Geocode GET Request](#) on page 72 and [Reverse Geocode POST Request](#) on page 73.

## Custom Options

There are some countries that support setting custom matching and/or geocoding options that are specific to the country.

Custom options are offered for these countries:

- [Australia \(AUS\)](#) on page 145
- [Canada \(CAN\)](#) on page 221
- [France \(FRA\)](#) on page 297
- [Germany \(DEU\)](#) on page 309
- [Great Britain \(GBR\)](#) on page 317
- [New Zealand \(NZL\)](#) on page 473
- [Portugal \(PRT\)](#) on page 518
- [Singapore \(SGP\)](#) on page 554
- [Sweden \(SWE\)](#) on page 584
- [United States \(USA\)](#) on page 632

For more information, see the "Custom Options" section in the country's write-up.

In addition, for countries that support both custom user dictionaries and standard geocoding datasets, you can set a custom preference with the key `KEY_CUSTOM_DICTIONARY_USAGE` that will define the searching and matching preferences when both custom and standard dictionaries are available in the geocoding engine. This option is only available with forward geocoding. To locate information about whether your country supports custom user dictionaries, refer to the "Supported Geocoding Datasets" section in the country's write-up.

The following table provides information on how to implement a **custom option**.

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Type:</b>	POST
<b>Object : Element</b>	<code>preferences</code> : <code>customPreferences</code> , where the custom option is specified using a key/value pair.

For more information, see [Geocode POST Request](#) on page 40.



## Candidate Return Information

The standard set of fields that may be returned includes:

- Total matches
- Total possible candidates
- Candidate address
- Candidate range
- Matched fields
- Geocode coordinates (for geocoding operation)
- Result codes

The return of some of these fields may depend on the type of data provided in the configured geocoding dataset(s). Refer to each country's section for information on the available output fields and their definitions. In addition, there are some countries that have custom output fields. Refer to each country's section in [Appendix A - Country-Specific Information](#) for information on the available custom output fields.

You also have the option to specify additional return information, such as:

- The maximum number of candidates to be returned.
- Whether to return all available information for each candidate or to return only specific address fields. These additional fields are specified using the `returnFieldsDescriptor`. The following options are available:
  - `returnMatchDescriptor` - Returns the match descriptor object, which indicates the parts of the candidate that matched the input address.
  - `returnStreetAddressFields` - Returns all of the individual street fields that make up the `formattedStreetAddress` field separately, such as the base part of the main address, the thoroughfare type, any pre- and/or post-directionals, etc.
  - `returnUnitInformation` - Where available, returns unit type and unit value information separately in the `unitType` and `unitValue` fields, as well as in the `formattedStreetAddress` field.
  - `returnAllCustomFields` - Returns all of the custom fields for the candidate.
  - `returnedCustomFieldKeys` - Specifies a list of keys that represent the custom fields to be returned in the candidate's `customFields` output. For example: "CTYST\_KEY" or "DATATYPE".

**Note:** To specify multiple key/value pairs for a country, use spaces to separate the names of the custom fields to be returned. Candidates which have the field information available will include the custom fields with the keys in the candidate's `customFields` output.

For example in a REST JSON request:

```
"preferences" : {
  "customPreferences" : {
    "USA.returnedCustomFieldKeys" : "LAT LON SHORT_CITY"
  }
}
```

**Note:** Custom fields vary by country. To locate your country's information, refer to [Country-Specific Information](#) to find the corresponding section in the appendix that provides more details.

### Specifying Additional Candidate Return Information in the REST API

REST API	Feature Implementation
<b>Service:</b>	Geocode
<b>Request Type:</b>	POST
<b>Object : Element</b>	<p><code>preferences</code> : <code>returnFieldsDescriptor</code>, where the additional field option is specified using a key/value pair. Ignored if <code>isReturnAllCandidateInfo</code> is true.</p> <p><b>Note:</b> To override the default value of a <code>returnFieldsDescriptor</code> element for a specific country, specify the key/value pair in the <code>customPreferences</code> object, with the key constant preceded by the ISO-3166 3-character country code plus a period. For example: <code>AUS.returnAllCustomFields</code>.</p>

For more information, see [Geocode POST Request](#) on page 40.

## Setting Country-Level Preference Overrides

The options for matching, geocoding and reverse geocoding have default values/settings that can be overridden on a per country basis. The following list provides some of the overridable options:

- **Matching options** - match nodes and must match field settings

- **Geocoding options** - geocode placement (street and corner offsets), geocoding fallback and coordinate reference system
- **Reverse Geocoding options** - search distance, geocode placement (street and corner offsets), client locale and coordinate reference system
- **Candidate Return Information** - maximum candidate return information, return all candidate information, return all custom fields, return custom field keys, return match descriptor, return street address fields and return unit information

The following table provides information on how to set a country preference.

**Note:** Overriding the preferences on a country by country level may lead to unexpected results – overrides should only be used where there is a need for it.

REST API	Feature Implementation
<b>Services:</b>	Geocode, reverseGeocode
<b>Request Type:</b>	POST
<b>Object : Element</b>	<p>preferences : customPreferences, where the option is specified using a key/value pair. The ISO-3166 3-character country code and a period (.) precedes the key constant. The options that can be set on a per country basis are located in the following objects:</p> <ul style="list-style-type: none"> <li>• preferences</li> <li>• mustMatchFields</li> <li>• returnFieldsDescriptor</li> </ul>

For more information, see [Geocode POST Request](#) on page 40 and [Reverse Geocode POST Request](#) on page 73.

# 2 - REST Web Services

## In this section

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## Introduction to Global Geocoding Services

The Global Geocoding REST API provides the following services:

- **Geocode**—Takes a single input address or multiple input addresses and returns standardized US or international address and geocoding information.
- **ReverseGeocode**—Takes a single input latitude and longitude coordinates or multiple input coordinates and returns address information for the location(s).
- **Capabilities**—Returns the capabilities of the geocode service, such as the supported operations, the available country geocoding engines and the country-specific custom fields.
- **Dictionaries**—Returns information about the installed address dictionaries.

## Making Requests using HTTP

### Service Endpoints

The service endpoints for the Global Geocoding REST API services are:

```
http://<server>:<port>/rest/GlobalGeocode/<service_name>.[content type]
```

where:

**<service\_name>** can be one of the following services:

- geocode
- reverseGeocode
- capabilities
- dictionaries

**.[content type]** is optional. For more details, see [HTTP Headers](#) on page 30.

## WADL URL

The WADL for the Global Geocoding REST API web services is:

```
http://<server>:<port>/rest/GlobalGeocode/?_wadl&type=xml
```

## Supported Payload Formats

The supported message payload formats for the requests and responses are JSON and XML. The message exchange format is negotiated between the client and the service via information specified in the HTTP headers.

## HTTP Headers

To negotiate the content type being sent between the client and service, the request includes an `Accept` header to indicate the acceptable media type. Optionally, it can also indicate the `MIME Content-Type` being sent in the request.

The response from the server will return a status code and the `Content-Type` of the response.

The following are example HTTP content negotiation headers for JSON and XML:

### JSON

```
Accept: application/json; charset=utf-8
Content-Type: application/json; charset=utf-8
```

### XML

```
Accept: application/xml; charset=utf-8
Content-Type: application/xml; charset=utf-8
```

The following table defines the type of response to expect based on the header information specified in the request.

Request	Header Information	Response Content Type
<code>service_name.json</code>	No special header information.	json
<code>service_name.json</code>	Content-Type: application/xml; charset=utf-8 Accept: application/xml; charset=utf-8	xml

Request	Header Information	Response Content Type
<i>service_name.json</i>	Content-Type: application/json; charset=utf-8 Accept: application/json; charset=utf-8	json
<i>service_name</i>	Content-Type: application/json; charset=utf-8 Accept: application/json; charset=utf-8	json
<i>service_name</i>	Content-Type: application/xml; charset=utf-8 Accept: application/xml; charset=utf-8	xml
<i>service_name</i>	No special header information.	json
<i>service_name.xml</i>	Content-Type: application/json; charset=utf-8 Accept: application/json; charset=utf-8	json
<i>service_name.xml</i>	Content-Type: application/xml; charset=utf-8 Accept: application/xml; charset=utf-8	xml
<i>service_name.xml</i>	No special header information.	xml

## Supported HTTP Methods

A complete REST request is formed by combining an HTTP method with the full URI to the service you're addressing.

To create a complete request, combine the operation with the appropriate HTTP headers and any required payload.

The following table lists the HTTP methods that are supported by each service API.

Service	HTTP Method	Description
Geocode	GET	Retrieves a resource from the <code>Geocode</code> service for a single input address. Takes a subset of parameter elements compared to the <code>POST</code> command.
	POST	Retrieves a <code>Geocode</code> resource from the server. Allows the client to specify the complete set of preferences.
ReverseGeocode	GET	Retrieves a resource from the <code>ReverseGeocode</code> service for a single input latitude and longitude coordinates. Takes a subset of parameter elements compared to the <code>POST</code> command.
	POST	Retrieves a <code>ReverseGeocode</code> resource from the server. Allows the client to specify the complete set of preferences.
Capabilities	GET	Retrieves a resource from the <code>Capabilities</code> service. The resource returns information about the capabilities of the geocoding service.
Dictionaries	GET	Retrieves a resource from the <code>Dictionaries</code> service. The resource returns information about the available geocoding datasets/dictionaries.



## HTTP Status Codes

Each response to a request contains an HTTP status code. The HTTP status code reports on the outcome of the HTTP request to a service. The following table provides the most common status codes that are returned by the services.

Status Code	Short Description	Description
200	OK	The request is successful. Typically returned by a GET or a POST returning information.
400	Bad Request	The request contained an error. This status is returned by various methods when the data provided by the client - either as part of the URI, query parameters or the body - does not meet the server requirements.
404	Not Found	The requested resource was not found.
405	Method Not Allowed	The method requested is not allowed for the resource in the URI.
406	Not Acceptable	The requested media type specified in the Accept header is not supported. The supported media types include <code>application/JSON</code> and <code>application/xml</code> .
500	Internal Server Error	An internal error was encountered that prevents the server from processing the request and providing a valid response.

# Geocode Service

## Geocode Service Request

### Geocode GET Request

The `GET` request enables you to submit an input address and matching and/or geocoding preferences to the `Geocode` service and receive a response that provides the candidates object which contains the associated latitude/longitude coordinates and other matching and location information about each candidate. The preference options for a `GET` request are a subset of the total available with the `POST` request.

#### Base URI

```
http://<server>:<port>/rest/GlobalGeocode/geocode.[content type]
```

where:

*.[content type]* indicates that the specified content type will be used by default. Optional.

#### **json**

Default content type is `JSON`, unless superseded by `HTTP` content negotiation

#### **xml**

Default content type is `XML`, unless superseded by `HTTP` content negotiation

*[query parameters]* are described in the following section. Each key/value pair entered in the request is separated by an ampersand.

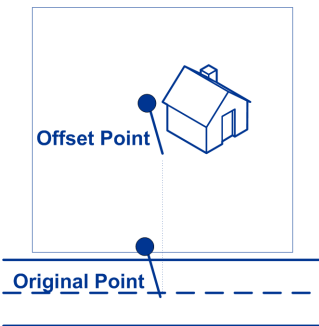
#### Query Parameters


The following table defines the `GET` query parameters for the `Geocode` service. For information on the response, see [GeocodeServiceResponse Object](#) on page 52.

Parameter	Type	Description
<p><b>Note:</b> The meaning, valid values and support of the following address elements vary by country:</p> <ul style="list-style-type: none"> <li>• placeName</li> <li>• mainAddress</li> <li>• lastLine</li> <li>• areaName1</li> <li>• areaName2</li> <li>• areaName3</li> <li>• areaName4</li> <li>• postCode1</li> <li>• postCode2</li> <li>• country</li> </ul> <p>In addition, there are certain matching and geocoding options that vary by country. It is important to review the information specific to your country/countries. To locate your country's information, refer to the <a href="#">Country-Specific Information</a> sections in the appendix.</p>		
placeName	String	<p>Building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional. For example:</p> <p><b>Pitney Bowes</b> 4750 Walnut St. Boulder, CO 80301</p>
mainAddress	String	<p><b>Single Line input</b>—If no other field is populated, then the <code>mainAddress</code> entry will be treated as a single line input and can be a collection of address field elements. The input order of the address fields should reflect the normal address formatting for your country. Optional. For example:</p> <p><b>4750 Walnut St., Boulder CO, 80301</b></p> <p><b>Street Address</b>—If the address fields (<code>placeName</code>, <code>lastLine</code>, <code>postalCode</code>, etc.) are provided separately, then the content of this field will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	The last line of the address. Optional.
areaName1	String	Specifies the largest geographic area, typically a state or province. Optional.

Parameter	Type	Description
areaName2	String	Specifies the secondary geographic area, typically a county or district. Optional.
areaName3	String	Specifies a city or town name. Optional.
areaName4	String	Specifies a city subdivision or locality. Optional.
postalCode	String	The postal code in the appropriate format for the country. Optional.
country	String	ISO 3166-1 alpha-3 country code. Required. For country codes, see <a href="#">Country Reference Listing and ISO 3166-1 Country Codes</a> on page 117.

Parameter	Type	Description
matchMode	String	<p>Match modes determine the leniency used to make a match between the input address and the reference data. Select a match mode based on the quality of your input and your desired output. The following match modes are available:</p> <p><b>Exact</b> Requires a very tight match. This restrictive mode generates the fewest match candidates, which decreases the processing time. When using this mode, ensure that your input is very clean; free of misspellings and incomplete addresses.</p> <p><b>Standard</b> Requires a close match and generates a moderate number of match candidates. Default.</p> <p><b>Relaxed</b> Allows a loose match and generates the most match candidates, which increases the processing time and results in more multiple matches. Use this mode if you are not confident that your input is clean; free of misspellings and incomplete addresses.</p> <p><b>Custom</b> Provides the capability for you to define the matching criteria by setting <code>MustMatch</code> fields; however, you can only set the <code>MustMatch</code> fields using a POST request. For a GET request, the <code>MustMatch</code> default values are used. For more information on the <code>MustMatch</code> fields, refer to <a href="#">mustMatchFields</a>.</p> <p><b>Interactive (USA only)</b> Available in single-line address matching only. This mode is designed to better handle the specific matching challenges presented by interactive matching. Interactive mode permits for more flexible matching patterns and may, in some cases, return additional possible matches than relaxed match mode.</p> <p><b>CASS (USA only)</b> Imposes additional rules to ensure compliance with the USPS CASS regulations. The purpose of this match mode is to create mailable addresses for USPS mailing discounts. Use this mode to standardize your input for mailing. This mode generates a large number of match candidates.</p>
fallbackGeo	Boolean	<p>Specifies whether to attempt to determine a geographic region centroid when an address-level geocode cannot be determined. Optional.</p> <p><b>True</b> Return a geographic centroid when an address-level centroid cannot be determined. Default.</p> <p><b>False</b> Do not return a geographic centroid when an address-level centroid cannot be determined.</p>

Parameter	Type	Description
fallbackPostal	Boolean	<p>Specifies whether to attempt to determine a post code centroid when an address-level geocode cannot be determined. Optional.</p> <p><b>True</b> Return a post code centroid when an address-level centroid cannot be determined. Default.</p> <p><b>False</b> Do not return a post code centroid when an address-level centroid cannot be determined.</p>
maxCands	Integer	The maximum number of candidates to return. Optional. Must be an integer value. Default = 1.
streetOffset	Double	<p>Indicates the offset distance from the street segments to use in street-level geocoding. The distance is specified in the units you specify in the <code>streetOffsetUnits</code> option. Default value = 7 meters.</p> <p>The offset distance is used in street-level geocoding to prevent the geocode from being in the middle of a street. It compensates for the fact that street-level geocoding returns a latitude and longitude point in the center of the street where the address is located. Since the building represented by an address is not on the street itself, you do not want the geocode for an address to be a point on the street. Instead, you want the geocode to represent the location of the building which sits next to the street. For example, an offset of 50 feet means that the geocode will represent a point 50 feet back from the center of the street. The distance is calculated perpendicular to the portion of the street segment for the address. Offset is also used to prevent addresses across the street from each other from being given the same point. The following diagram shows an offset point in relation to the original point.</p> 
streetOffsetUnits	String	<p>Specifies the unit of measurement for the street offset. One of the following:</p> <ul style="list-style-type: none"> <li>• Feet</li> <li>• Meters - Default</li> </ul>

Parameter	Type	Description
cornerOffset	Double	<p>Specifies the distance to offset the street end points in street-level matching. The distance is specified in the units you specify in the <code>cornerOffsetUnits</code> option. This value is used to prevent addresses at street corners from being given the same geocode as the intersection. Defines the offset position of the geocoded point with respect to the corner. Default value = 7 meters.</p> <p>The following diagram compares the end points of a street to offset end points.</p> 
cornerOffsetUnits	String	<p>Specifies the unit of measurement for the corner offset. One of the following:</p> <ul style="list-style-type: none"> <li>• Feet</li> <li>• Meters - Default</li> </ul>

## Geocode POST Request

The `POST` request enables you to submit a single input address or a list of addresses for batch processing. Matching and/or geocoding preferences can optionally be specified to the `Geocode` service and receive the associated latitude/longitude coordinates and location information. The preference options for a `POST` request are the complete set of available options.

### Base URI

```
http://<server>:<port>/rest/GlobalGeocode/geocode.[content type]
```

Where:

`.[content type]` indicates that the specified content type will be used by default. Optional.

#### **json**

Default content type is `JSON`, unless superseded by `HTTP` content negotiation

#### **xml**

Default content type is `XML`, unless superseded by `HTTP` content negotiation

### Request Parameters

The `POST` request comprises the following input parameters:

- `addresses` - The address or addresses to be geocoded. Required.
- `type` - The type of geocode. Optional.
- `preferences` - The matching and geocoding options. Optional.

These objects and their elements are defined in the following table.



Parameter	Type	Description
-----------	------	-------------

**Note:** The meaning, valid values and support of the following address elements vary by country:

- placeName
- mainAddress
- lastLine
- areaName1
- areaName2
- areaName3
- areaName4
- postCode1
- postCode2
- country

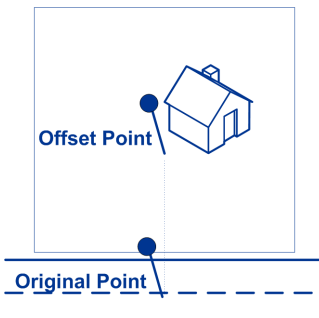
In addition, there are certain matching and geocoding options that vary by country. It is important to review the information specific to your country/countries. To locate your country's information, refer to the [Country-Specific Information](#) sections in the appendix.

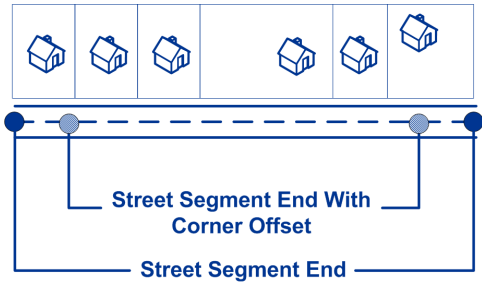
`addresses` array of `Address` objects. The `addresses` array may contain one or more input addresses. Each `Address` object may contain the following elements:

placeName	String	<p>Building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional. For example:</p> <p><b>Pitney Bowes</b> 4750 Walnut St. Boulder, CO 80301</p>
mainAddress	String	<p><b>Single Line input</b>—If no other field is populated, then the <code>mainAddress</code> entry will be treated as a single line input and can be a collection of address field elements. The input order of the address fields should reflect the normal address formatting for your country. Optional. For example:</p> <p><b>4750 Walnut St., Boulder CO, 80301</b></p> <p><b>Street Address</b>—If the address fields (<code>placeName</code>, <code>lastLine</code>, <code>postalCode</code>, etc.) are provided separately, then the content of this field will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	The last line of the address. Optional.

Parameter	Type	Description
areaName1	String	Specifies the largest geographic area, typically a state or province. Optional.
areaName2	String	Specifies the secondary geographic area, typically a county or district. Optional.
areaName3	String	Specifies a city or town name. Optional.
areaName4	String	Specifies a city subdivision or locality. Optional.
postCode1	String	The postal code in the appropriate format for the country. Optional.
postCode2	String	The postal code extension in the appropriate format for the country. Optional.
country	String	ISO 3166-1 alpha-3 country code. Required. For country codes, see <a href="#">Country Reference Listing and ISO 3166-1 Country Codes</a> on page 117.
addressNumber	String	House or building number.
streetName	String	Street name.
unitType	String	Specifies the type of unit, such as Apt., Ste. and Bldg.
unitValue	String	Specifies the unit value/number, such as "3B".
type object of type geocodeType:		
geocodeType	String	Indicates the geocode type to be performed. Optional. <ul style="list-style-type: none"> <li><b>Address</b>                      Geocode to a street address. Default.</li> <li><b>Geographic</b>                Geocode to the geographic centroid of a city or state.</li> <li><b>Postal</b>                        Geocode to a postal code.</li> </ul>

Parameter	Type	Description
<p><code>preferences</code> object of type <code>Preferences</code>, consisting of the following elements.</p> <p><b>Note:</b> The following elements are only applicable to the <code>Geocode</code> service.</p> <p><b>Note:</b> To override the default value of a <code>preferences</code> element for a specific country, specify the key/value pair in the <code>customPreferences</code> object, with the key constant preceded by the ISO-3166 3-character country code plus a period. For example: <code>"DEU.fallbackToGeographic"</code>.</p>		
<code>returnAllCandidateInfo</code>	Boolean	<p>Specifies whether to return all available information for each candidate.</p> <p><b>True</b>            Return all available information for each candidate.</p> <p><b>False</b>            Do not return all available information for each candidate. Default.</p>
<code>fallbackToGeographic</code>	Boolean	<p>Specifies whether to attempt to determine a geographic region centroid when an address-level geocode cannot be determined. Optional.</p> <p><b>True</b>            Return a geographic centroid when an address-level centroid cannot be determined. Default.</p> <p><b>False</b>            Do not return a geographic centroid when an address-level centroid cannot be determined.</p>
<code>fallbackToPostal</code>	Boolean	<p>Specifies whether to attempt to determine a post code centroid when an address-level geocode cannot be determined. Optional.</p> <p><b>True</b>            Return a post code centroid when an address-level centroid cannot be determined. Default.</p> <p><b>False</b>            Do not return a post code centroid when an address-level centroid cannot be determined.</p>

Parameter	Type	Description
FALLBACK_TO_WORLD	String	<p>Specifies whether to use the World Geocoder (XWG) to determine a geocode when either a country geocoder is not installed or a country geocoder is installed without a geocoding dataset. The World Geocoder (XWG) may return either a postal or geographic geocode depending on the level of support in the XWG geocoding dataset. Optional.</p> <p><b>True</b> Use the World Geocoder (XWG) for matching when either a country geocoder is not installed or a country geocoder is installed without a geocoding dataset.</p> <p><b>False</b> Do not use the World Geocoder (XWG) for matching when either a country geocoder is not installed or a country geocoder is installed without a geocoding dataset. Default.</p>
maxReturnedCandidates	Integer	The maximum number of candidates to return. Optional. Must be an integer value. Default = 1.
streetOffset	Double	<p>Indicates the offset distance from the street segments to use in street-level geocoding. The distance is specified in the units you specify in the <code>streetOffsetUnits</code> option. Default value = 7 meters.</p> <p>The offset distance is used in street-level geocoding to prevent the geocode from being in the middle of a street. It compensates for the fact that street-level geocoding returns a latitude and longitude point in the center of the street where the address is located. Since the building represented by an address is not on the street itself, you do not want the geocode for an address to be a point on the street. Instead, you want the geocode to represent the location of the building which sits next to the street. For example, an offset of 50 feet means that the geocode will represent a point 50 feet back from the center of the street. The distance is calculated perpendicular to the portion of the street segment for the address. Offset is also used to prevent addresses across the street from each other from being given the same point. The following diagram shows an offset point in relation to the original point.</p> 

Parameter	Type	Description
streetOffsetUnits	String	<p>Specifies the unit of measurement for the street offset. One of the following:</p> <ul style="list-style-type: none"> <li>• Feet</li> <li>• Meters - Default</li> </ul>
cornerOffset	Double	<p>Specifies the distance to offset the street end points in street-level matching. The distance is specified in the units you specify in the <code>cornerOffsetUnits</code> option. This value is used to prevent addresses at street corners from being given the same geocode as the intersection. Defines the offset position of the geocoded point with respect to the corner. Default value = 7 meters.</p> <p>The following diagram compares the end points of a street to offset end points.</p> 
cornerOffsetUnits	String	<p>Specifies the unit of measurement for the corner offset. One of the following:</p> <ul style="list-style-type: none"> <li>• Feet</li> <li>• Meters - Default</li> </ul>

Parameter	Type	Description
matchMode	String	<p>Match modes determine the leniency used to make a match between the input address and the reference data. Select a match mode based on the quality of your input and your desired output. The following match modes are available:</p> <p><b>Exact</b> Requires a very tight match. This restrictive mode generates the fewest match candidates, which decreases the processing time. When using this mode, ensure that your input is very clean; free of misspellings and incomplete addresses.</p> <p><b>Standard</b> Requires a close match and generates a moderate number of match candidates. Default.</p> <p><b>Relaxed</b> Allows a loose match and generates the most match candidates, which increases the processing time and results in more multiple matches. Use this mode if you are not confident that your input is clean; free of misspellings and incomplete addresses.</p> <p><b>Custom</b> Provides the capability for you to define the matching criteria by setting <code>MustMatch</code> fields; however, you can only set the <code>MustMatch</code> fields using a POST request. For a GET request, the <code>MustMatch</code> default values are used. For more information on the <code>MustMatch</code> fields, refer to <a href="#">mustMatchFields</a>.</p> <p><b>Interactive (USA only)</b> Available in single-line address matching only. This mode is designed to better handle the specific matching challenges presented by interactive matching. Interactive mode permits for more flexible matching patterns and may, in some cases, return additional possible matches than relaxed match mode.</p> <p><b>CASS (USA only)</b> Imposes additional rules to ensure compliance with the USPS CASS regulations. The purpose of this match mode is to create mailable addresses for USPS mailing discounts. Use this mode to standardize your input for mailing. This mode generates a large number of match candidates.</p>
clientCoordSysName	String	<p>Specifies the coordinate system that you want to convert the geometry to. The format must be the European Petroleum Survey Group (EPSG) code or the SRID code. Default = <code>EPSG:4326</code>.</p> <p>Specify the coordinate reference system in the format <code>codespace:code</code>.</p>

Parameter	Type	Description
customPreferences	Map<String key, String value>	<p>Specifies the country-specific input preferences. This object can be used to specify:</p> <ul style="list-style-type: none"> <li>A country override to a default value of one or more elements in the <code>preferences</code>, <code>mustMatchFields</code> or <code>returnFieldsDescriptor</code> objects.</li> <li>A custom country input option.</li> </ul> <p>To override the default value for a specific country, precede the key constant with the ISO-3166 3-character country code plus a period, and then specify the value. For example, in an XML request, an entry for a country override would look as follows:</p> <pre>&lt;customPreferences&gt;   &lt;entry&gt;     &lt;key&gt;USA.maxReturnedCandidates&lt;/key&gt;      &lt;value&gt;3&lt;/value&gt;   &lt;/entry&gt; &lt;/customPreferences&gt;</pre> <p>Custom country input options are available for the following countries:</p> <ul style="list-style-type: none"> <li><a href="#">Australia (AUS)</a> on page 145</li> <li><a href="#">Canada (CAN)</a> on page 221</li> <li><a href="#">France (FRA)</a> on page 297</li> <li><a href="#">Germany (DEU)</a> on page 309</li> <li><a href="#">Great Britain (GBR)</a> on page 317</li> <li><a href="#">New Zealand (NZL)</a> on page 473</li> <li><a href="#">Portugal (PRT)</a> on page 518</li> <li><a href="#">Singapore (SGP)</a> on page 554</li> <li><a href="#">Sweden (SWE)</a> on page 584</li> <li><a href="#">United States (USA)</a> on page 632</li> </ul> <p>In addition, for countries that support both custom user dictionaries and standard geocoding datasets, you can set a custom preference with the key <code>KEY_CUSTOM_DICTIONARY_USAGE</code> that will define the searching and matching preferences when both custom and standard dictionaries are available in the geocoding engine. This option is only available with forward geocoding. For more information, see <a href="#">Setting Searching and Matching Preferences When Using Standard and Custom Dictionaries</a> on page 9. To locate information on whether your country supports custom user dictionaries, refer to the "Supported Geocoding Datasets" section in the country's write-up.</p>

Parameter	Type	Description
preferredDictionaryOrder	List<String>	Specifies the dictionary search order when multiple dictionaries are installed. The default search order is the order in which the dictionaries are configured.

`mustMatchFields` object of type `FieldsMatching`. Allows setting the match criteria for determining match candidates. To enable these options, you must set the `matchMode` field to *Custom*. This object consists of the following elements:

**Note:** To override the default value of a `mustMatchFields` element for a specific country, specify the key/value pair in the `customPreferences` object, with the key constant preceded by the ISO-3166 3-character country code plus a period. For example: "CAN.matchOnAddressNumber".

matchOnAddressNumber	Boolean	<b>True</b>	A match must be made to the input address number.
		<b>False</b>	A match does not need to be made to the input address number. Default.

matchOnPostCode1	Boolean	<b>True</b>	A match must be made to the input <code>PostCode1</code> field.
		<b>False</b>	A match does not need to be made to the input <code>PostCode1</code> field. Default.

matchOnAreaName1	Boolean	<b>True</b>	A match must be made to the input <code>AreaName1</code> field.
		<b>False</b>	A match does not need to be made to the input <code>AreaName1</code> field. Default.

matchOnAreaName2	Boolean	<b>True</b>	A match must be made to the input <code>AreaName2</code> field.
		<b>False</b>	A match does not need to be made to the input <code>AreaName2</code> field. Default.

**Note:** This option is not supported by USA.



Parameter	Type	Description	
matchOnAreaName3	Boolean	<b>True</b>	A match must be made to the input <code>AreaName3</code> field.
		<b>False</b>	A match does not need to be made to the input <code>AreaName3</code> field. Default.
matchOnAreaName4	Boolean	<b>True</b>	A match must be made to the input <code>AreaName4</code> field.
		<b>False</b>	A match does not need to be made to the input <code>AreaName4</code> field. Default.
matchOnAllStreetFields	Boolean	<b>True</b>	A match must be made to the input street name, type and directional fields.
		<b>False</b>	A match does not need to be made to the input street name, type and directional fields. Default.
mustMatchInput	Boolean	<b>True</b>	The other must match fields are ignored and any of the possible input fields provided (postal code, area names, etc.) must match against the candidate for the candidate to be returned.
		<b>False</b>	The other must match fields are honored. A match does not need to be made to any specific input field provided for the candidate to be returned. Default.
<p><code>returnFieldsDescriptor</code> object of type <code>ReturnsFieldsDescriptor</code>. Controls the return of additional data on a candidate. By default, the extended candidate information is not returned, but in the cases where more is available, it can be controlled in the following ways:</p> <p><b>Note:</b> To override the default value of a <code>returnFieldsDescriptor</code> element for a specific country, specify the key/value pair in the <code>customPreferences</code> object, with the key constant preceded by the ISO-3166 3-character country code plus a period. For example: <code>"AUS.returnAllCustomFields"</code>.</p>			
returnAllCustomFields	Boolean	<b>True</b>	Return all of the custom fields for the candidate.
		<b>False</b>	Return only the standard set of fields for the candidate. Default.

Parameter	Type	Description	
returnedCustomFieldKeys	List<String>	<p>Specifies a list of keys that represent the custom fields to be returned in the candidate's <code>customFields</code> output. For example: "CTYST_KEY" or "DATATYPE". Default: empty.</p> <p><b>Note:</b> To specify multiple key/value pairs for a country, use spaces to separate the names of the custom fields to be returned. For example:  "USA.returnedCustomFieldKeys" : "LAT LON SHORT_CITY". Candidates which have this information available will include the three custom fields with these keys in the candidate's <code>customFields</code> output.</p> <p><b>Note:</b> Custom fields vary by country. To locate your country's information, refer to <a href="#">Country-Specific Information</a> to find the corresponding section in the appendix that provides more details.</p>	
returnMatchDescriptor	Boolean	<b>True</b>	Return the match descriptor object, which indicates the parts of the candidate that matched the input address.
		<b>False</b>	Do not return the match descriptor object. Default.

Parameter	Type	Description
returnStreetAddressFields	Boolean	<p><b>True</b> Return all of the individual street fields that make up the <code>formattedStreetAddress</code> field separately, as follows:</p> <ul style="list-style-type: none"> <li>• <code>MAIN_ADDRESS</code> — the base part of the street name. For example: “River” in “13 River Ave”</li> <li>• <code>THOROUGHFARE_TYPE</code> — the thoroughfare type, which may appear before or after the street name, such as Ave, Via, St, Rd, etc.</li> <li>• <code>ADDRESS_ID</code> — the unique identifier for the address in the source data</li> <li>• <code>PRE_ADDRESS</code> — value may contain articles, etc. that appear before the main street name. For example: “de la” from “Calle de la mesa”</li> <li>• <code>POST_ADDRESS</code> — value may contain phrases that appear after the main street name. For example: “de la tiedra” from “Calle Ramon Perez de la tiedra”</li> <li>• <code>PRE_DIRECTIONAL</code> — value contains a directional that appears before the main street name. For example: “South” in “123 South Main St”</li> <li>• <code>POST_DIRECTIONAL</code> — value contains a directional that appears after the main street name. For example: “SW” in “123 River St SW”</li> </ul> <p><b>False</b> Do not return the individual street fields separately; return these values in the <code>formattedStreetAddress</code> field. Default.</p>
returnUnitInformation	Boolean	<p><b>True</b> Where available, return unit type and unit value information separately in the <code>unitType</code> and <code>unitValue</code> fields, as well as in the <code>formattedStreetAddress</code> field.</p> <p><b>False</b> Where available, return unit type and unit value information only in the <code>formattedStreetAddress</code> field. Default.</p>

## Geocode Service Response

### GeocodeServiceResponse Object

A request to the `Geocode` service returns a `GeocodeServiceResponse` object that contains:

- `totalPossibleCandidates`— the total number of possible candidates.
- `totalMatches`— the total number of matches.
- `candidates` — lists one or more candidates that matched to your input address/addresses. Matching and location information is returned for each match candidate.

Name	Type	Description
<code>totalPossibleCandidates</code>	Integer	Indicates the total number of possible candidates.
<code>totalMatches</code>	Integer	Indicates the total number of matches.
<code>candidates</code> object of type <code>Candidate</code> , consisting of an array with one or more match candidates and associated address, matching and location information. Contains the following elements:		

Name	Type	Description
precisionLevel	Integer	<p>A code describing the precision of the geocode. One of the following:</p> <ul style="list-style-type: none"> <li><b>0</b> No coordinate information is available for this candidate address.</li> <li><b>1</b> Interpolated street address.</li> <li><b>2</b> Street segment midpoint.</li> <li><b>3</b> Postal code 1 centroid.</li> <li><b>4</b> Partial postal code 2 centroid.</li> <li><b>5</b> Postal code 2 centroid.</li> <li><b>6</b> Intersection.</li> <li><b>7</b> Point of interest. (If database contains POI data.)</li> <li><b>8</b> State/province centroid.</li> <li><b>9</b> County centroid.</li> <li><b>10</b> City centroid.</li> <li><b>11</b> Locality centroid.</li> <li><b>12-15</b> Reserved for unspecified custom items.</li> <li><b>16</b> The result is an address point.</li> <li><b>17</b> The result was generated by using address point data to modify the candidate's segment data.</li> <li><b>18</b> The result is an address point that was projected using the centerline offset feature. You must have both a point and a street range database to use the centerline offset feature.</li> </ul> <p><b>Note:</b> This field is not returned for USA. For geocode precision information for USA, see <a href="#">Location Codes</a> on page 741.</p>
formattedStreetAddress	String	The formatted main address line.
formattedLocationAddress	String	The formatted last address line.
identifier	String	For street- or point-level candidates, this is usually the segment ID.

Name	Type	Description
precisionCode	String	

Name	Type	Description
		A code describing the precision of the geocode.
		The format of the geocode result string is <code>match_category[additional_match_information]</code> .
		The possible match categories are as follows:
	<b>Z1</b>	Postal match with post code 1 centroid.
	<b>Z2</b>	Postal match with partial post code 2 centroid.
	<b>Z3</b>	Postal match with post code 2 centroid.
	<b>G1</b>	Geographic match with area name 1 centroid.
	<b>G2</b>	Geographic match with area name 2 centroid.
	<b>G3</b>	Geographic match with area name 3 centroid.
	<b>G4</b>	Geographic match with area name 4 centroid.
		The matches in the 'S' category indicate that the record was matched to a single address candidate.
	<b>SX</b>	Point located at a street intersection.
	<b>SC</b>	Match point located at the house-level that has been projected from the nearest segment.
	<b>S0</b>	No coordinates are available, but parts of the address may have matched the source data.
	<b>S4</b>	The geocode is located at a street centroid.
	<b>S5</b>	The geocode is located at a street address.
	<b>S7</b>	The geocode is located at a street address that has been interpolated between point house locations.
	<b>S8</b>	Match point located at the house location.
		Additional match information is of the format <code>HPNTSCSZA</code> . If a match result was not made for the specified component, a dash (-) will appear in place of a letter.
	<b>H</b>	House number.
	<b>P</b>	Street prefix direction.
	<b>N</b>	Street name.
	<b>T</b>	Street type.
	<b>S</b>	Street suffix direction.
	<b>C</b>	City name.
	<b>Z</b>	Post code.
	<b>A</b>	Geocoding dataset.
	<b>U</b>	Custom User Dictionary.

Name	Type	Description
<p><b>Note:</b> For more detailed information including country-specific meanings and values, see <a href="#">Global Result Codes</a> on page 757.</p>		
sourceDictionary	String	Identifies the dictionary that is the source for the candidate information and data. The source dictionary is a 0-based integer value that indicates which configured dictionary the candidate came from. If you only have a single dictionary this will always be "0".
<p>matching object. Indicates what parts of the input matched; consisting of the following elements:</p>		
matchOnAddressNumber	Boolean	<p>Indicates if the input address number matched the candidate's address number.</p> <p><b>True</b>            The input address number matched the candidate's address number.</p> <p><b>False</b>           The input address number did not match the candidate's address number.</p>
matchOnPostCode1	Boolean	<p>Indicates if the input <code>postCode1</code> field matched the candidate's <code>postCode1</code> field.</p> <p><b>True</b>            The input <code>postCode1</code> matched the candidate's <code>postCode1</code>.</p> <p><b>False</b>           The input <code>postCode1</code> did not match the candidate's <code>postCode1</code>.</p>
matchOnPostCode2	Boolean	<p>Indicates if the input <code>postCode2</code> field (post code extension) matched the candidate's <code>postCode2</code> field.</p> <p><b>True</b>            The input <code>postCode2</code> matched the candidate's <code>postCode2</code>.</p> <p><b>False</b>           The input <code>postCode2</code> did not match candidate's <code>postCode2</code>.</p>
matchOnAreaName1	Boolean	<p>Indicates if the input <code>areaName1</code> field matched the candidate's <code>areaName1</code> field.</p> <p><b>True</b>            The input <code>areaName1</code> matched the candidate's <code>areaName1</code>.</p> <p><b>False</b>           The input <code>areaName1</code> did not match the candidate's <code>areaName1</code>.</p>



Name	Type	Description
matchOnAreaName2	Boolean	<p>Indicates if the input <code>areaName2</code> field matched the candidate's <code>areaName2</code> field.</p> <p><b>True</b>      The input <code>areaName2</code> matched the candidate's <code>areaName2</code>.</p> <p><b>False</b>     The input <code>areaName2</code> did not match the candidate's <code>areaName2</code>.</p>
matchOnAreaName3	Boolean	<p>Indicates if the input <code>areaName3</code> field matched the candidate's <code>areaName3</code> field.</p> <p><b>True</b>      The input <code>areaName3</code> matched the candidate's <code>areaName3</code>.</p> <p><b>False</b>     The input <code>areaName3</code> did not match the candidate's <code>areaName3</code>.</p>
matchOnAreaName4	Boolean	<p>Indicates if the input <code>areaName4</code> field matched the candidate's <code>areaName4</code> field.</p> <p><b>True</b>      The input <code>areaName4</code> matched the candidate's <code>areaName4</code>.</p> <p><b>False</b>     The input <code>areaName4</code> did not match the candidate's <code>areaName4</code>.</p>
matchOnStreetName	Boolean	<p>Indicates if the input street name matched the candidate's street name.</p> <p><b>True</b>      The input street name matched the candidate's street name.</p> <p><b>False</b>     The input street name did not match the candidate's street name.</p>
matchOnStreetType	Boolean	<p>Indicates if the input street type matched the candidate's street type.</p> <p><b>True</b>      The input street type matched the candidate's street type.</p> <p><b>False</b>     The input street type did not match the candidate's street type.</p>

Name	Type	Description
matchOnStreetDirectional	Boolean	Indicates if the input street directional matched the candidate's street directional.
		<b>True</b> The input street directional matched the candidate's street directional.
		<b>False</b> The input street directional did not match the candidate's street directional.

matchOnPlaceName	Boolean	Indicates if the input place name matched the candidate's place name.
		<b>True</b> The input place name matched the candidate's place name.
		<b>False</b> The input place name did not match the candidate's place name.

`geometry` object. Returned geocode consisting of the following elements:

<code>coordinates</code>	Double	The candidate's geocode, specified as x (longitude) and y (latitude) coordinates separated by a comma.
<code>crs</code>	String	The coordinate reference system used for the candidate's geocode.
<code>type</code>	String	Geometry type. The return value is always <code>Point</code> .

`address` object. Returned candidate address which may contain some of the following elements:

Name	Type	Description
------	------	-------------

**Note:** The meaning, valid values and support of the following address elements vary by country:

- placeName
- mainAddress
- lastLine
- areaName1
- areaName2
- areaName3
- areaName4
- postCode1
- postCode2
- country

In addition, there are certain matching and geocoding options that vary by country. It is important to review the information specific to your country/countries. To locate your country's information, refer to the [Country-Specific Information](#) sections in the appendix.

mainAddressLine	String	Candidate address line.
addressLastLine	String	Candidate last address line.
placeName	String	Firm, company, organization, business or building name.
areaName1	String	State, province or region.
areaName2	String	County or district.
areaName3	String	City, town or suburb.
areaName4	String	Locality
postCode1	String	Main postal code.
postCode2	String	Secondary postal code, where one exists.
country	String	Country
addressNumber	String	House or building number.
streetName	String	Street name.

Name	Type	Description
unitType	String	The type of unit, such as Apt., Ste. and Bldg.
unitValue	String	The unit value/number, such as "3B".
customFields	Object	The fields and corresponding values returned are country-specific. Refer to the <a href="#">Country-Specific Information</a> sections in the appendix.
<p>ranges: CandidateRange object. Contains information about a candidate's ranges, consisting of the following elements:</p>		
placeName	String	If applicable, indicates the name of the candidate's place or building.
lowHouse	String	Indicates the low house number in the candidate's street range.
highHouse	String	Indicates the high house number in the candidate's street range.
side	String	<p>Provides information on the side of street that the candidate's range is located.</p> <p><b>LEFT</b>                    The range is on the left side of the street.</p> <p><b>RIGHT</b>                    The range is on the right side of the street.</p> <p><b>BOTH</b>                    The range is on both the left and right side of the street.</p> <p><b>UNKNOWN</b>                No information is available on the side of the street this range is located.</p>
oddEvenIndicator	String	<p>Provides information on the house numbering of the candidate's range.</p> <p><b>ODD</b>                    The range contains odd house numbers.</p> <p><b>EVEN</b>                    The range contains even house numbers.</p> <p><b>BOTH</b>                    The range contains both odd and even house numbers.</p> <p><b>IRREGULAR</b>                The range contains both even and odd numbers in an irregular order.</p> <p><b>UNKNOWN</b>                No information is available on the odd/even house numbering on this range.</p>
customValues	Map	A map of local values associated with the candidate's range.

Name	Type	Description
<hr/> <p><code>units</code>: <code>CandidateRangeUnit</code> object. Contains information about a candidate range's units, consisting of the following elements:</p> <hr/>		
<code>placeName</code>	String	If applicable, indicates the name of the candidate's place or building.
<code>unitType</code>	String	Indicates the unit type (APT, STE, etc.).
<code>highUnitValue</code>	String	Indicates the high unit number for this range unit.
<code>lowUnitValue</code>	String	Indicates the low unit number for this range unit.
<code>customValues</code>	Map	A map of local values associated with the unit.

## Examples

### Geocode JSON GET Request & Response

#### JSON GET Request

The following is an example of a JSON GET request for the Geocode service. Note that the query parameters are separated by an ampersand.

```
GET http://myserver:8080/rest/GlobalGeocode/geocode.json?
mainAddress=SANTA ANA&country=Mex&areaName1=DISTRITO FEDERAL
&postalCode=44910 HTTP/1.1
```

#### JSON GET Response

The following shows the JSON response returned by the previous request.

```
{
  "totalPossibleCandidates": 3,
  "totalMatches": 3,
  "candidates": [
    {
      "precisionLevel": 3,
      "formattedStreetAddress": "",
      "formattedLocationAddress": "44910 GUADALAJARA, JALISCO",
      "identifier": null,
      "precisionCode": "Z1",
      "sourceDictionary": "0",
      "matching": null,
      "geometry": {
        "type": "Point",
        "coordinates": [
          -103.356,
          20.64732
        ],
        "crs": {
          "type": "name",
          "properties": {
            "name": "epsg:4326"
          }
        }
      },
      "address": {
        "mainAddressLine": "",
        "addressLastLine": "44910 GUADALAJARA, JALISCO",
        "placeName": "",
        "areaName1": "JALISCO",
        "areaName2": "GUADALAJARA",

```

```
        "areaName3": "GUADALAJARA",
        "areaName4": "8 DE JULIO 1RA SECC",
        "postCode1": "44910",
        "postCode2": "",
        "country": "MEX",
        "addressNumber": "",
        "streetName": "",
        "unitType": null,
        "unitValue": null,
        "customFields": {}
    },
    "ranges": []
}
]
```

## Geocode XML GET Request & Response

### XML GET Request

The following is an example of an XML request for the Geocode service.

```
GET http://myserver:8080/rest/GlobalGeocode/geocode.json?
mainAddress=18 Merivales St&country=AUS&areaName1=QLD&postalCode=4101
HTTP/1.1
```

### XML GET Response

The following shows the XML response returned by the previous request.

```
<?xml version="1.0" encoding="UTF-8"?>
<GeocodeServiceResponse>
  <totalPossibleCandidates>1</totalPossibleCandidates>
  <totalMatches>1</totalMatches>
  <candidates>
    <precisionLevel>1</precisionLevel>
    <formattedStreetAddress>
      18 MERIVALE STREET</formattedStreetAddress>
    <formattedLocationAddress>
      SOUTH BRISBANE QLD 4101</formattedLocationAddress>
    <identifier>300211549</identifier>
    <precisionCode>S5HP-TSCZA</precisionCode>
    <sourceDictionary>0</sourceDictionary>
    <geometry>
      <type>Point</type>
      <coordinates>153.01511420131578</coordinates>
      <coordinates>-27.47292827752508</coordinates>
      <crs>
        <type>name</type>
        <properties>
          <name>epsg:4326</name>
        </properties>
      </crs>
    </geometry>
    <address>
      <mainAddressLine>18 MERIVALE STREET</mainAddressLine>
      <addressLastLine>SOUTH BRISBANE QLD 4101</addressLastLine>
      <placeName />
      <areaName1>QLD</areaName1>
      <areaName2>BRISBANE CITY</areaName2>
      <areaName3>SOUTH BRISBANE</areaName3>
      <areaName4 />
      <postCode1>4101</postCode1>
      <postCode2 />
      <country>AUS</country>
      <addressNumber>18</addressNumber>
```



```
    <streetName>MERIVALE</streetName>
    <customFields />
</address>
<ranges>
  <lowHouse>6</lowHouse>
  <highHouse>18</highHouse>
  <side>RIGHT</side>
  <oddEvenIndicator>BOTH</oddEvenIndicator>
  <customValues />
</ranges>
</candidates>
</GeocodeServiceResponse>
```

## Geocode JSON POST Request & Response

### JSON POST Request

The following is an example of a JSON POST request for the Geocode service. In this example the address point interpolation feature is enabled in `customPreferences`.

```
POST http://myserver:8080/rest/GlobalGeocode/geocode.json HTTP/1.1
{
  "type": "ADDRESS",
  "preferences": {
    "returnAllCandidateInfo": null,
    "fallbackToGeographic": null,
    "fallbackToPostal": null,
    "maxReturnedCandidates": null,
    "distance": null,
    "streetOffset": null,
    "cornerOffset": null,
    "matchMode": null,
    "clientLocale": null,
    "clientCoordSysName": null,
    "distanceUnits": null,
    "streetOffsetUnits": null,
    "cornerOffsetUnits": null,
    "mustMatchFields": {
      "matchOnAddressNumber": false,
      "matchOnPostCode1": false,
      "matchOnPostCode2": false,
      "matchOnAreaName1": false,
      "matchOnAreaName2": false,
      "matchOnAreaName3": false,
      "matchOnAreaName4": false,
      "matchOnAllStreetFields": false,
      "matchOnStreetName": false,
      "matchOnStreetType": false,
      "matchOnStreetDirectional": false,
      "matchOnPlaceName": false,
      "matchOnInputFields": false
    },
    "returnFieldsDescriptor": null,
    "customPreferences": {
      "USE_ADDRESS_POINT_INTERPOLATION": "true"
    },
    "preferredDictionaryOrders": null
  },
  "addresses": [
    {
      "mainAddressLine": "21 Byng Ave, toronto ON M9W 2M5",
      "addressLastLine": null,
      "placeName": null,
      "areaName1": null,

```

```

        "areaName2": null,
        "areaName3": null,
        "areaName4": null,
        "postCode1": null,
        "postCode2": null,
        "country": "CAN",
        "addressNumber": null,
        "streetName": null,
        "unitType": null,
        "unitValue": null,
        "customFields": null
    }
]
}

```

### JSON POST Response

The following shows the JSON response returned by the previous request.

```

{
  "responses": [
    {
      "totalPossibleCandidates": 1,
      "totalMatches": 1,
      "candidates": [
        {
          "precisionLevel": 16,
          "formattedStreetAddress": "21 BYNG AVE",
          "formattedLocationAddress": "TORONTO ON M9W 2M5",
          "identifier": "29566199",
          "precisionCode": "S8HPNTSCZA",
          "sourceDictionary": "1",
          "matching": null,
          "geometry": {
            "type": "Point",
            "coordinates": [
              -79.54916,
              43.72659
            ],
            "crs": {
              "type": "name",
              "properties": {
                "name": "epsg:4326"
              }
            }
          },
          "address": {
            "mainAddressLine": "21 BYNG AVE",
            "addressLastLine": "TORONTO ON M9W 2M5",
            "placeName": "",
            "areaName1": "ON",
            "areaName2": "TORONTO",

```

```

        "areaName3": "TORONTO",
        "areaName4": "",
        "postCode1": "M9W",
        "postCode2": "2M5",
        "country": "CAN",
        "addressNumber": "21",
        "streetName": "BYNG",
        "unitType": null,
        "unitValue": null,
        "customFields": {}
    },
    "ranges": [
        {
            "placeName": null,
            "lowHouse": "21",
            "highHouse": "21",
            "side": "LEFT",
            "oddEvenIndicator": "ODD",
            "units": [],
            "customValues": {
                "AREA_NAME_1": "ON",
                "POST_CODE_1": "M9W",
                "POST_CODE_2": "2M5",
                "AREA_NAME_3": "ETOBICOKE"
            }
        }
    ]
}

```

## Geocode XML POST Request & Response

### XML POST Request

The following is an example of an XML POST request to the Geocode service. This example illustrates enabling the centerline offset feature in `customPreferences`, as well as setting the `matchOnAddressNumber` and `matchOnStreetName` fields in the `mustMatchFields` object. To enable the `mustMatchFields` settings, the `matchMode` field is set to `CUSTOM`.

```
POST http://myserver:8080/rest/GlobalGeocode/geocode.xml HTTP/1.1
<?xml version="1.0" encoding="UTF-8"?>
<geocodeRequest>
  <type>ADDRESS</type>
  <preferences>
    <returnAllCandidateInfo
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:nil="true" />
    <fallbackToGeographic
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:nil="true" />
    <fallbackToPostal
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:nil="true" />
    <maxReturnedCandidates
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:nil="true" />
    <distance
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:nil="true" />
    <streetOffset
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:nil="true" />
    <cornerOffset
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:nil="true" />
    <matchMode>CUSTOM</matchMode>
    <mustMatchFields>
      <matchOnAddressNumber>true</matchOnAddressNumber>
      <matchOnPostCode1>false</matchOnPostCode1>
      <matchOnPostCode2>false</matchOnPostCode2>
      <matchOnAreaName1>false</matchOnAreaName1>
      <matchOnAreaName2>false</matchOnAreaName2>
      <matchOnAreaName3>false</matchOnAreaName3>
      <matchOnAreaName4>false</matchOnAreaName4>
      <matchOnAllStreetFields>false</matchOnAllStreetFields>
      <matchOnStreetName>true</matchOnStreetName>
      <matchOnStreetType>false</matchOnStreetType>
      <matchOnStreetDirectional>false</matchOnStreetDirectional>
      <matchOnPlaceName>false</matchOnPlaceName>
      <matchOnInputFields>false</matchOnInputFields>
    </mustMatchFields>
  </preferences>
</geocodeRequest>
```

```

<customPreferences>
  <entry>
    <key
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:type="xs:string">CENTERLINE_OFFSET_UNIT</key>
    <value
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:type="xs:string">FEET</value>
    </entry>
  <entry>
    <key
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:type="xs:string">CENTERLINE_OFFSET</key>
    <value xmlns:xs="http://www.w3.org/2001/XMLSchema"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:type="xs:string">30.0</value>
    </entry>
  <entry>
    <key
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:type="xs:string">USE_CENTERLINE_OFFSET</key>
    <value
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:type="xs:string">>true</value>
    </entry>
</customPreferences>
</preferences>
<addresses>
  <mainAddressLine>
    36 Rue de la Haute Moline Champagne-Ardenne 10800
  </mainAddressLine>
  <country>FRA</country>
</addresses>
</geocodeRequest>

```

### XML POST Response

The following shows the XML response returned by the previous request.

```

<?xml version="1.0" encoding="UTF-8"?>
<GeocodeServiceResponseList>
  <responses>
    <totalPossibleCandidates>1</totalPossibleCandidates>
    <totalMatches>1</totalMatches>
    <candidates>
      <precisionLevel>1</precisionLevel>
      <formattedStreetAddress>

```

```

        36 rue de la Haute Moline
    </formattedStreetAddress>
    <formattedLocationAddress>
        10800 Saint-Julien-les-Villas
    </formattedLocationAddress>
    <identifiant>65277882</identifiant>
    <precisionCode>S5HPNTS-ZA</precisionCode>
    <sourceDictionary>0</sourceDictionary>
    <geometry>
        <type>Point</type>
        <coordinates>4.10284503209829</coordinates>
        <coordinates>48.28588205764661</coordinates>
        <crs>
            <type>name</type>
            <properties>
                <name>epsg:4326</name>
            </properties>
        </crs>
    </geometry>
    <address>
        <mainAddressLine>36 rue de la Haute Moline</mainAddressLine>

        <addressLastLine>
            10800 Saint-Julien-les-Villas
        </addressLastLine>
        <placeName />
        <areaName1>Champagne-Ardenne</areaName1>
        <areaName2>Aube</areaName2>
        <areaName3>Saint-Julien-les-Villas</areaName3>
        <areaName4 />
        <postCode1>10800</postCode1>
        <postCode2 />
        <country>FRA</country>
        <addressNumber>36</addressNumber>
        <streetName>de la Haute Moline</streetName>
        <customFields />
    </address>
    <ranges>
        <lowHouse>34</lowHouse>
        <highHouse>38</highHouse>
        <side>RIGHT</side>
        <oddEvenIndicator>EVEN</oddEvenIndicator>
        <customValues />
    </ranges>
</candidates>
</responses>
</GeocodeServiceResponseList>

```

# Reverse Geocode Service

## Reverse Geocode Service Request

### Reverse Geocode GET Request

The `GET` request enables you to submit an input coordinate and a coordinate reference system, and optionally specify a search distance and country code to use for matching. The associated address data is returned. The preference options for a `GET` request are a subset of the total available with the `POST` request.

#### Base URI

```
http://<server>:<port>/rest/GlobalGeocode/reverseGeocode.[content
type]?[query parameters]
```

where:

*.[content type]* indicates that the specified content type will be used by default. Optional.

#### **json**

Default content type is `JSON`, unless superseded by `HTTP` content negotiation

#### **xml**

Default content type is `XML`, unless superseded by `HTTP` content negotiation

*[query parameters]* are described in the following section.

#### Query Parameters

The following table defines the `GET` query parameters for the Reverse Geocode service. For information on the response, see [GeocodeServiceResponse Object](#) on page 81.

Name	Type	Description
x	Double	Longitude in degrees. Required. For example: -79.391165
y	Double	Latitude in degrees. Required. For example: 43.643469



Name	Type	Description
country	String	Three-letter ISO country code, for example: CAN. Optional. For a list of ISO codes, see <a href="#">Country Reference Listing and ISO 3166-1 Country Codes</a> on page 117.
coordSysName	String (URL-encoded)	Specifies the coordinate system that you want to convert the geometry to. The format must be the European Petroleum Survey Group (EPSG) code or the SRID code. Default = EPSG:4326.  Specify the coordinate reference system in the format <code>codespace:code</code> .
distance	Double	Sets the radius in which the Reverse Geocode service searches for a match to the input coordinates. The unit of measurement is specified using <code>distanceUnits</code> . Default = 150 meters. Maximum value = 5280 feet (1 mile ) or 1609 meters.
distanceUnits	String	Specifies the unit of measurement for the search distance. One of the following: <ul style="list-style-type: none"> <li>• Feet</li> <li>• Meters - Default</li> </ul>

## Reverse Geocode POST Request

The `POST` request enables you to submit a single input coordinate or a list of coordinates for batch processing. A country code, coordinate reference system and matching preferences can optionally be specified. A response containing a list of candidates with associated address data and matching information is returned. The preference options for a `POST` request are the complete set of available options.

### Base URI

```
http://<server>:<port>/rest/GlobalGeocode/reverseGeocode.[content type]
```

where:

`.[content type]` indicates that the specified content type will be used by default. Optional.

#### json

Default content type is `JSON`, unless superseded by `HTTP` content negotiation

#### xml

Default content type is `XML`, unless superseded by `HTTP` content negotiation

### Request Parameters

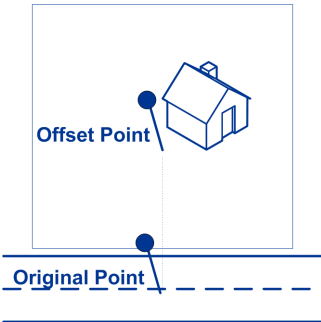
The `POST` request comprises the following input parameters:


- `points` — The input coordinates or multiple input coordinates to be reverse geocoded. Required.
- `preferences` — The matching options. Optional.

These objects and their elements are defined in the following table.

Name	Type	Description
<code>points</code> an array object containing both a geometry object and a country code string:		
<code>country</code>	String	Indicates the country to search for the reverse geocode result, specified using a 3-letter ISO country code. Optional. For country codes, see <a href="#">Country Reference Listing and ISO 3166-1 Country Codes</a> on page 117.
<code>geometry</code> object, consisting of the following elements:		
<code>coordinates</code>	Double	Specifies the x, y input coordinates, where x=longitude and y=latitude. For example: [ -105.25175, 40.024494 ]
<code>type</code>	String	Indicates the type of geographic entity the input coordinates represent. <b>point</b> The input coordinates represent a point location.
<code>crs</code>	String	Indicates the coordinate reference system used for the input coordinates. The format must be the European Petroleum Survey Group (EPSG) code or the SRID code. Default = <code>EPSG:4326</code> . Specify the coordinate reference system in the format <code>codespace:code</code> .
<code>preferences</code> object, consisting of the following elements.		
<b>Note:</b> Only the following elements in the <code>preferences</code> object are applicable to the Reverse Geocode service.		
<b>Note:</b> To override the default value of a <code>preferences</code> element for a specific country, specify the key/value pair in the <code>customPreferences</code> object, with the key constant preceded by the ISO-3166 3-character country code plus period. For example: <code>DEU.streetOffset</code> .		
<code>distance</code>	Double	Sets the radius in which the Reverse Geocode service searches for a match to the input coordinates. The unit of measurement is specified using <code>distanceUnits</code> . Default = 150 meters. Maximum value = 5280 feet (1 mile ) or 1609 meters.

Name	Type	Description
distanceUnits	String	<p>Specifies the unit of measurement for the search distance. One of the following:</p> <ul style="list-style-type: none"><li>• Feet</li><li>• Meters - Default</li></ul>
clientLocale	String	<p>This field is used for a country that has multiple languages to determine the preferred order of language candidates. The locale must be specified in the format "cc_CC", where "cc" is the language and "CC" is the ISO 3166-1 Alpha-2 code, such as: en-US, fr_CA or fr_FR.</p> <p>For example, Egypt supports both english and arabic. The clientLocale field could be set to either english-first (en-EN) or arabic-first (ar-EG).</p> <p><b>Note:</b> For a listing of ISO Alpha-2 country codes, see <a href="#">Country Reference Listing and ISO 3166-1 Country Codes</a> on page 117.</p>
clientCoordSysName	String	<p>Specifies the coordinate system that you want to convert the geometry to. The format must be the European Petroleum Survey Group (EPSG) code or the SRID code. Default = <code>EPSG:4326</code>.</p> <p>Specify the coordinate reference system in the format <code>codespace:code</code>.</p>

Name	Type	Description
streetOffset	Double	<p>Indicates the offset distance from the street segments to use in street-level geocoding. The distance is specified in the units you specify in the <code>streetOffsetUnits</code> option. Default value = 7 meters.</p> <p>The offset distance is used in street-level geocoding to prevent the geocode from being in the middle of a street. It compensates for the fact that street-level geocoding returns a latitude and longitude point in the center of the street where the address is located. Since the building represented by an address is not on the street itself, you do not want the geocode for an address to be a point on the street. Instead, you want the geocode to represent the location of the building which sits next to the street. For example, an offset of 50 feet means that the geocode will represent a point 50 feet back from the center of the street. The distance is calculated perpendicular to the portion of the street segment for the address. Offset is also used to prevent addresses across the street from each other from being given the same point. The following diagram shows an offset point in relation to the original point.</p> 
streetOffsetUnits	String	<p>Specifies the unit of measurement for the street offset. One of the following:</p> <ul style="list-style-type: none"><li>• Feet</li><li>• Meters - Default</li></ul>

Name	Type	Description
cornerOffset	Double	<p>Specifies the distance to offset the street end points in street-level matching. The distance is specified in the units you specify in the <code>cornerOffsetUnits</code> option. This value is used to prevent addresses at street corners from being given the same geocode as the intersection. Defines the offset position of the geocoded point with respect to the corner. Default value = 7 meters.</p> <p>The following diagram compares the end points of a street to offset end points.</p> 
cornerOffsetUnits	String	<p>Specifies the unit of measurement for the corner offset. One of the following:</p> <ul style="list-style-type: none"> <li>• Feet</li> <li>• Meters - Default</li> </ul>

Name	Type	Description
customPreferences	Map<String key, String value>	<p>Specifies the country-specific input preferences. This object can be used to specify:</p> <ul style="list-style-type: none"> <li>• A country override to a default value of one or more elements in the <code>preferences</code> or <code>returnFieldsDescriptor</code> objects.</li> <li>• A custom country input option.</li> </ul> <p>To override the default value for a specific country, precede the key constant with the ISO-3 country code plus period, and then specify the value. For example, in an XML request, an entry for a country override would look as follows:</p> <pre>&lt;customPreferences&gt;   &lt;entry&gt;     &lt;key&gt;CAN.distance&lt;/key&gt;     &lt;value&gt;300&lt;/value&gt;   &lt;/entry&gt; &lt;/customPreferences&gt;</pre> <p>Custom country input options are available for the following countries:</p> <ul style="list-style-type: none"> <li>• <a href="#">Australia (AUS)</a> on page 145</li> <li>• <a href="#">Canada (CAN)</a> on page 221</li> <li>• <a href="#">France (FRA)</a> on page 297</li> <li>• <a href="#">Germany (DEU)</a> on page 309</li> <li>• <a href="#">Great Britain (GBR)</a> on page 317</li> <li>• <a href="#">New Zealand (NZL)</a> on page 473</li> <li>• <a href="#">Portugal (PRT)</a> on page 518</li> <li>• <a href="#">Singapore (SGP)</a> on page 554</li> <li>• <a href="#">Sweden (SWE)</a> on page 584</li> <li>• <a href="#">United States (USA)</a> on page 632</li> </ul> <p>In addition, for countries that support both custom user dictionaries and standard geocoding datasets, you can set a custom preference with the key <code>KEY_CUSTOM_DICTIONARY_USAGE</code> that will define the searching and matching preferences when both custom and standard dictionaries are available in the geocoding engine. This option is only available with forward geocoding. For more information, see <a href="#">Setting Searching and Matching Preferences When Using Standard and Custom Dictionaries</a> on page 9. To locate information on whether your country supports custom user dictionaries, refer to the "Supported Geocoding Datasets" section in the country's write-up.</p>

`returnFieldsDescriptor` object of type `ReturnsFieldsDescriptor`. Controls the return of additional data on a candidate. By default, the extended candidate information is not returned, but in the cases where more is available, it can be controlled in the following ways:

**Note:** To override the default value of a `returnFieldsDescriptor` element for a specific country, specify the key/value pair in the `customPreferences` object, with the key constant preceded by the ISO-3166 3-character country code plus a period. For example: "AUS.returnAllCustomFields".

Name	Type	Description
returnAllCustomFields	Boolean	<p><b>True</b> Return all of the custom fields for the candidate.</p> <p><b>False</b> Return only the standard set of fields for the candidate. Default.</p>
returnedCustomFieldKeys	List<String>	<p>Specifies a list of keys that represent the custom fields to be returned in the candidate's <code>customFields</code> output. For example: "CTYST_KEY" or "DATATYPE". Default: empty.</p> <p><b>Note:</b> To specify multiple key/value pairs for a country, use spaces to separate the names of the custom fields to be returned. For example:  "USA.returnedCustomFieldKeys" : "LAT LON SHORT_CITY". Candidates which have this information available will include the three custom fields with these keys in the candidate's <code>customFields</code> output.</p> <p><b>Note:</b> Custom fields vary by country. To locate your country's information, refer to <a href="#">Country-Specific Information</a> to find the corresponding section in the appendix that provides more details.</p>
returnMatchDescriptor	Boolean	<p><b>True</b> Return the match descriptor object, which indicates the parts of the candidate that matched the input address.</p> <p><b>False</b> Do not return the match descriptor object. Default.</p>

Name	Type	Description
returnStreetAddressFields	Boolean	<p><b>True</b> Return all of the individual street fields that make up the <code>formattedStreetAddress</code> field separately, as follows:</p> <ul style="list-style-type: none"> <li>• <code>MAIN_ADDRESS</code> — the base part of the street name. For example: “River” in “13 River Ave”</li> <li>• <code>THOROUGHFARE_TYPE</code> — the thoroughfare type, which may appear before or after the street name, such as Ave, Via, St, Rd, etc.</li> <li>• <code>ADDRESS_ID</code> — the unique identifier for the address in the source data</li> <li>• <code>PRE_ADDRESS</code> — value may contain articles, etc. that appear before the main street name. For example: “de la” from “Calle de la mesa”</li> <li>• <code>POST_ADDRESS</code> — value may contain phrases that appear after the main street name. For example: “de la tiedra” from “Calle Ramon Perez de la tiedra”</li> <li>• <code>PRE_DIRECTIONAL</code> — value contains a directional that appears before the main street name. For example: “South” in “123 South Main St”</li> <li>• <code>POST_DIRECTIONAL</code> — value contains a directional that appears after the main street name. For example: “SW” in “123 River St SW”</li> </ul> <p><b>False</b> Do not return the individual street fields separately; return these values in the <code>formattedStreetAddress</code> field. Default.</p>
returnUnitInformation	Boolean	<p><b>True</b> Where available, return unit type and unit value information separately in the <code>unitType</code> and <code>unitValue</code> fields, as well as in the <code>formattedStreetAddress</code> field.</p> <p><b>False</b> Where available, return unit type and unit value information only in the <code>formattedStreetAddress</code> field. Default.</p>



## Reverse Geocode Service Response

### GeocodeServiceResponse Object

A request to the Reverse Geocode service returns a `GeocodeServiceResponse` object that contains:

- `totalPossibleCandidates`— the total number of possible candidates.
- `totalMatches`— the total number of matches.
- `candidates` object — lists one or more candidates that matched to your input coordinate(s). Matching and address information is returned for each candidate.

**Table 1: GeocodeServiceResponse Elements Definitions**

Name	Type	Description
<code>totalPossibleCandidates</code>	Integer	Indicates the total number of possible candidates.
<code>totalMatches</code>	Integer	Indicates the total number of matches.
<code>candidates</code> object of type <code>Candidate</code> , consisting of an array with one or more match candidates and associated address, matching and location information. Contains the following elements:		

Name	Type	Description
precisionLevel	Integer	<p>A code describing the precision of the geocode. One of the following:</p> <ul style="list-style-type: none"> <li><b>0</b> No coordinate information is available for this candidate address.</li> <li><b>1</b> Interpolated street address.</li> <li><b>2</b> Street segment midpoint.</li> <li><b>3</b> Postal code 1 centroid.</li> <li><b>4</b> Partial postal code 2 centroid.</li> <li><b>5</b> Postal code 2 centroid.</li> <li><b>6</b> Intersection.</li> <li><b>7</b> Point of interest. (If database contains POI data.)</li> <li><b>8</b> State/province centroid.</li> <li><b>9</b> County centroid.</li> <li><b>10</b> City centroid.</li> <li><b>11</b> Locality centroid.</li> <li><b>12-15</b> Reserved for unspecified custom items.</li> <li><b>16</b> The result is an address point.</li> <li><b>17</b> The result was generated by using address point data to modify the candidate's segment data.</li> <li><b>18</b> The result is an address point that was projected using the centerline offset feature. You must have both a point and a street range database to use the centerline offset feature.</li> </ul> <p><b>Note:</b> This field is not returned for USA. For geocode precision information for USA, see <a href="#">Location Codes</a> on page 741.</p>
formattedStreetAddress	String	The formatted main address line.
formattedLocationAddress	String	The formatted last address line.
precisionCode	String	The returned reverse geocoding result code. The definitions are provided in the appendix. For US, see <a href="#">Address Location Codes</a> on page 741; for all other countries, see <a href="#">Reverse Geocoding 'R' Result Codes</a> on page 764.

Name	Type	Description
sourceDictionary	String	Identifies the dictionary that is the source for the candidate information and data. The source dictionary is a 0-based integer value that indicates which configured dictionary the candidate came from. If you only have a single dictionary this will always be "0".

`geometry` object. Returned geocode consisting of the following elements:

coordinates	Double	The candidate's geocode, specified as x (longitude) and y (latitude) coordinates separated by a comma.
crs	String	The coordinate reference system used for the candidate's geocode.
type	String	Geometry type. The return value is always <code>Point</code> .

`address` object. Returned candidate address which may contain some of the following elements:

**Note:** The meaning of the following address elements vary by country:

- mainAddress
- addressLastLine
- placeName
- areaName1
- areaName2
- areaName3
- areaName4
- postCode1
- postCode2
- country

To locate your country's information, refer to the [Country-Specific Information](#) sections in the appendix that provides more details.

mainAddressLine	String	Candidate address line.
addressLastLine	String	Candidate last address line.
placeName	String	Firm, company, organization, business or building name.
areaName1	String	State, province or region.
areaName2	String	County or district.

Name	Type	Description
areaName3	String	City, town or suburb.
areaName4	String	Locality
postCode1	String	Main postal code.
postCode2	String	Secondary postal code, where one exists.
country	String	Country
addressNumber	String	House or building number.
streetName	String	Street name.
unitType	String	The type of unit, such as Apt., Ste. and Bldg.
unitValue	String	The unit value/number, such as "3B".
customFields	Object	The fields and corresponding values returned are country-specific. Refer to the <a href="#">Country-Specific Information</a> sections in the appendix.
<p>ranges: CandidateRange object. Contains information about a candidate's ranges, consisting of the following elements:</p>		
placeName	String	If applicable, indicates the name of the candidate's place or building.
lowHouse	String	Indicates the low house number in the candidate's street range.
highHouse	String	Indicates the high house number in the candidate's street range.
side	String	Provides information on the side of street that the candidate's range is located. <ul style="list-style-type: none"> <li><b>LEFT</b>                    The range is on the left side of the street.</li> <li><b>RIGHT</b>                    The range is on the right side of the street.</li> <li><b>BOTH</b>                    The range is on both the left and right side of the street.</li> <li><b>UNKNOWN</b>                No information is available on the side of the street this range is located.</li> </ul>

Name	Type	Description
oddEvenIndicator	String	Provides information on the house numbering of the candidate's range.
		<b>ODD</b> The range contains odd house numbers.
		<b>EVEN</b> The range contains even house numbers.
		<b>BOTH</b> The range contains both odd and even house numbers.
		<b>IRREGULAR</b> The range contains both even and odd numbers in an irregular order.
<b>UNKNOWN</b> No information is available on the odd/even house numbering on this range.		
customValues	Map	A map of local values associated with the candidate's range.

## Examples

### Reverse Geocode JSON GET Request & Response

#### JSON GET Request

The following is an example of a `JSON GET` request for the Reverse Geocode service. Note that a value that is associated with more than one key query parameter can be assigned to the parameters by using the following syntax: `parameter1&parameter2=value`.

```
GET http://myserver:8080/rest/GlobalGeocode/reverseGeocode.json?
x=12.025594&y=57.712891&coordSysName=EPSG:4326&
distance=1&distanceUnits=METERS HTTP/1.1
```

#### JSON GET Response

The following shows the `JSON` response returned by the previous request.

```
{
  "totalPossibleCandidates": 1,
  "totalMatches": 1,
  "candidates": [
    {
      "precisionLevel": 1,
      "formattedStreetAddress": "KALLKÄLLEGATAN 34",
      "formattedLocationAddress": "416 54 GÖTEBORG",
      "identifier": null,
      "precisionCode": "RS5A",
      "sourceDictionary": "0",
      "matching": null,
      "geometry": {
        "type": "Point",
        "coordinates": [
          12.025625,
          57.712566
        ],
        "crs": {
          "type": "name",
          "properties": {
            "name": "epsg:4326"
          }
        }
      },
      "address": {
        "mainAddressLine": "KALLKÄLLEGATAN 34",
        "addressLastLine": "416 54 GÖTEBORG",
        "placeName": "",
        "areaName1": "VÄSTRA GÖTALANDS LÄN",

```

```
    "areaName2": "GÖTEBORG",
    "areaName3": "GÖTEBORG",
    "areaName4": "",
    "postCode1": "416 54",
    "postCode2": "",
    "country": "SWE",
    "addressNumber": "34",
    "streetName": "KALLKÄLLE",
    "unitType": null,
    "unitValue": null,
    "customFields": {
      "REVERSE_GEOCODE_DISTANCE_UNIT": "METER",
      "REVERSE_GEOCODE_DISTANCE": "0.9420000000000001"
    }
  },
  "ranges": [
    {
      "placeName": null,
      "lowHouse": "34",
      "highHouse": "34",
      "side": "UNKNOWN",
      "oddEvenIndicator": "EVEN",
      "units": [],
      "customValues": {}
    }
  ]
}
]
```

## Reverse Geocode XML GET Request & Response

### XML GET Request

The following is an example of an XML request for the Reverse Geocode service.

```
GET http://myserver:8080/rest/GlobalGeocode/reverseGeocode.xml?
distanceUnits=METER&distance=100&coordSysName=EPSG:4326&y=51.543396
&x=13.419194 HTTP/1.1
```

### XML GET Response

The following shows the XML response returned by the previous request.

```
<?xml version="1.0" encoding="UTF-8"?>
<GeocodeServiceResponse>
  <totalPossibleCandidates>1</totalPossibleCandidates>
  <totalMatches>1</totalMatches>
  <candidates>
    <precisionLevel>1</precisionLevel>
    <formattedStreetAddress>Am Weinberg 4</formattedStreetAddress>
    <formattedLocationAddress>
      04924 Uebigau-Wahrenbrück
    </formattedLocationAddress>
    <precisionCode>RS5A</precisionCode>
    <sourceDictionary>0</sourceDictionary>
    <geometry>
      <type>Point</type>
      <coordinates>13.41906511750789</coordinates>
      <coordinates>51.54321229045565</coordinates>
      <crs>
        <type>name</type>
        <properties>
          <name>epsg:4326</name>
        </properties>
      </crs>
    </geometry>
    <address>
      <mainAddressLine>Am Weinberg 4</mainAddressLine>
      <addressLastLine>04924 Uebigau-Wahrenbrück</addressLastLine>
      <placeName />
      <areaName1>Brandenburg</areaName1>
      <areaName2>Elbe-Elster</areaName2>
      <areaName3>Uebigau-Wahrenbrück</areaName3>
      <areaName4>Prestewitz</areaName4>
      <postCode1>04924</postCode1>
      <postCode2 />
      <country>DEU</country>
      <addressNumber>4</addressNumber>
      <streetName>Am Wein</streetName>
      <customFields>
```



```

    <entry>
      <key
        xmlns:xs="http:...
        xmlns:xsi="http:...
xsi:type="xs:string">REVERSE_GEOCODE_DISTANCE_UNIT</key>
      <value
        xmlns:xs="http:...
        xmlns:xsi="http:...
        xsi:type="xs:string">METERS</value>
    </entry>
    <entry>
      <key
        xmlns:xs="http:...
        xmlns:xsi="http:...
        xsi:type="xs:string">REVERSE_GEOCODE_DISTANCE</key>
      <value
        xmlns:xs="http:...
        xmlns:xsi="http:...
        xsi:type="xs:string">0.983</value>
    </entry>
  </customFields>
</address>
<ranges>
  <lowHouse>4</lowHouse>
  <highHouse>6</highHouse>
  <side>UNKNOWN</side>
  <oddEvenIndicator>EVEN</oddEvenIndicator>
  <customValues />
</ranges>
</candidates>
</GeocodeServiceResponse>

```

## Reverse Geocode JSON POST Request & Response

### JSON POST Request

The following is an example of a JSON POST request for the Reverse Geocode service.

```
POST http://myserver:8080/rest/GlobalGeocode/reverseGeocode.json?
{
  "preferences": {
    "returnAllCandidateInfo": false,
    "fallbackToGeographic": true,
    "fallbackToPostal": true,
    "maxReturnedCandidates": 1,
    "distance": 100,
    "streetOffset": 7,
    "cornerOffset": 7,
    "matchMode": "UNSPECIFIED",
    "clientLocale": "en-US",
    "clientCoordSysName": "epsg:4326",
    "distanceUnits": "METER",
    "streetOffsetUnits": "METER",
    "cornerOffsetUnits": "METER",
    "mustMatchFields": {
      "matchOnAddressNumber": false,
      "matchOnPostCode1": false,
      "matchOnPostCode2": false,
      "matchOnAreaName1": false,
      "matchOnAreaName2": false,
      "matchOnAreaName3": false,
      "matchOnAreaName4": false,
      "matchOnAllStreetFields": false,
      "matchOnStreetName": false,
      "matchOnStreetType": false,
      "matchOnStreetDirectional": false,
      "matchOnPlaceName": false,
      "matchOnInputFields": false
    },
    "returnFieldsDescriptor": {
      "returnAllCustomFields": false,
      "returnMatchDescriptor": false,
      "returnStreetAddressFields": false,
      "returnUnitInformation": false,
      "returnedCustomFieldKeys": []
    },
    "customPreferences": {},
    "preferredDictionaryOrders": []
  },
  "points": [
    {
      "country": "FRA",
      "geometry": {
        "type": "point",
```

```

        "coordinates": [
            2.294449,
            48.85838
        ],
        "crs": {
            "type": "name",
            "properties": {
                "name": "EPSG:4326"
            }
        }
    }
}

```

### JSON POST Response

The following shows the JSON response returned by the previous request.

```

{
  "responses": [
    {
      "totalPossibleCandidates": 2,
      "totalMatches": 2,
      "candidates": [
        {
          "precisionLevel": 2,
          "formattedStreetAddress": "avenue Anatole France",
          "formattedLocationAddress": "75007 Paris",
          "identifier": null,
          "precisionCode": "RS4A",
          "sourceDictionary": "1",
          "matching": null,
          "geometry": {
            "type": "Point",
            "coordinates": [
              2.2948623,
              48.858486
            ],
            "crs": {
              "type": "name",
              "properties": {
                "name": "epsg:4326"
              }
            }
          },
          "address": {
            "mainAddressLine": "avenue Anatole France",
            "addressLastLine": "75007 Paris",
            "placeName": "",
            "areaName1": "Ile-de-France",
            "areaName2": "Paris",

```

```

        "areaName3": "Paris",
        "areaName4": "7e Arrondissement Paris",
        "postCode1": "75007",
        "postCode2": "",
        "country": "FRA",
        "addressNumber": "",
        "streetName": "Anatole France",
        "unitType": null,
        "unitValue": null,
        "customFields": {
            "REVERSE_GEOCODE_DISTANCE_UNIT": "METER",
            "REVERSE_GEOCODE_DISTANCE": "23.3"
        }
    },
    "ranges": []
},
{
    "precisionLevel": 2,
    "formattedStreetAddress": "parc du Champ de Mars",
    "formattedLocationAddress": "75007 Paris",
    "identifiant": null,
    "precisionCode": "RS4A",
    "sourceDictionary": "1",
    "matching": null,
    "geometry": {
        "type": "Point",
        "coordinates": [
            2.2948623,
            48.858486
        ],
        "crs": {
            "type": "name",
            "properties": {
                "name": "epsg:4326"
            }
        }
    },
    "address": {
        "mainAddressLine": "parc du Champ de Mars",
        "addressLastLine": "75007 Paris",
        "placeName": "",
        "areaName1": "Ile-de-France",
        "areaName2": "Paris",
        "areaName3": "Paris",
        "areaName4": "7e Arrondissement Paris",
        "postCode1": "75007",
        "postCode2": "",
        "country": "FRA",
        "addressNumber": "",
        "streetName": "du Champ de Mars",
        "unitType": null,
        "unitValue": null,
        "customFields": {

```

```
        "REVERSE_GEOCODE_DISTANCE_UNIT": "METER",  
        "REVERSE_GEOCODE_DISTANCE": "23.3"  
      },  
      "ranges": []  
    ]  
  }  
}
```

## Reverse Geocode XML POST Request & Response

### XML POST Request

The following is an example of a XML POST request for the Reverse Geocode service.

```
POST http://myserver:8080/rest/GlobalGeocode/reverseGeocode.xml?
<?xml version="1.0" encoding="UTF-8"?>
<reverseGeocodeRequest>
  <preferences>
    <returnAllCandidateInfo>false</returnAllCandidateInfo>
    <fallbackToGeographic>true</fallbackToGeographic>
    <fallbackToPostal>true</fallbackToPostal>
    <maxReturnedCandidates>1</maxReturnedCandidates>
    <distance>150.0</distance>
    <streetOffset>7.0</streetOffset>
    <cornerOffset>7.0</cornerOffset>
    <matchMode>UNSPECIFIED</matchMode>
    <clientLocale>en-US</clientLocale>
    <clientCoordSysName>epsg:4326</clientCoordSysName>
    <distanceUnits>Meter</distanceUnits>
    <streetOffsetUnits>Meter</streetOffsetUnits>
    <cornerOffsetUnits>Meter</cornerOffsetUnits>
    <mustMatchFields>
      <matchOnAddressNumber>false</matchOnAddressNumber>
      <matchOnPostCode1>false</matchOnPostCode1>
      <matchOnPostCode2>false</matchOnPostCode2>
      <matchOnAreaName1>false</matchOnAreaName1>
      <matchOnAreaName2>false</matchOnAreaName2>
      <matchOnAreaName3>false</matchOnAreaName3>
      <matchOnAreaName4>false</matchOnAreaName4>
      <matchOnAllStreetFields>false</matchOnAllStreetFields>
      <matchOnStreetName>false</matchOnStreetName>
      <matchOnStreetType>false</matchOnStreetType>
      <matchOnStreetDirectional>false</matchOnStreetDirectional>
      <matchOnPlaceName>false</matchOnPlaceName>
      <matchOnInputFields>false</matchOnInputFields>
    </mustMatchFields>
    <returnFieldsDescriptor>
      <returnAllCustomFields>false</returnAllCustomFields>
      <returnMatchDescriptor>false</returnMatchDescriptor>
      <returnStreetAddressFields>false</returnStreetAddressFields>
      <returnUnitInformation>false</returnUnitInformation>
    </returnFieldsDescriptor>
    <customPreferences />
  </preferences>
  <points>
    <country>AUS</country>
    <geometry>
      <type>point</type>
      <coordinates>151.196036</coordinates>
      <coordinates>-33.879637</coordinates>
    </geometry>
  </points>
</reverseGeocodeRequest>
```

```

    <crs>
      <type>name</type>
      <properties>
        <name>EPSG:4326</name>
      </properties>
    </crs>
  </geometry>
</points>
</reverseGeocodeRequest>

```

### XML POST Response

The following shows the XML response returned by the previous request.

```

<?xml version="1.0" encoding="UTF-8"?>
<GeocodeServiceResponseList>
  <responses>
    <totalPossibleCandidates>2</totalPossibleCandidates>
    <totalMatches>2</totalMatches>
    <candidates>
      <precisionLevel>1</precisionLevel>
      <formattedStreetAddress>
        344 WATTLE CRESCENT
      </formattedStreetAddress>
      <formattedLocationAddress>
        ULTIMO NSW 2007
      </formattedLocationAddress>
      <precisionCode>RS5A</precisionCode>
      <sourceDictionary>0</sourceDictionary>
      <geometry>
        <type>Point</type>
        <coordinates>151.19599158560163</coordinates>
        <coordinates>-33.87967421977337</coordinates>
        <crs>
          <type>name</type>
          <properties>
            <name>epsg:4326</name>
          </properties>
        </crs>
      </geometry>
      <address>
        <mainAddressLine>344 WATTLE CRESCENT</mainAddressLine>
        <addressLastLine>ULTIMO NSW 2007</addressLastLine>
        <placeName />
        <areaName1>NSW</areaName1>
        <areaName2>COUNCIL OF THE CITY OF SYDNEY</areaName2>
        <areaName3>ULTIMO</areaName3>
        <areaName4 />
        <postCode1>2007</postCode1>
        <postCode2 />
        <country>AUS</country>
        <addressNumber>344</addressNumber>
      </address>
    </candidates>
  </responses>
</GeocodeServiceResponseList>

```

```

    <streetName>WATTLE</streetName>
    <customFields>
      <entry>
        <key
          xmlns:xs="http:...
          xmlns:xsi="http:...
xsi:type="xs:string">REVERSE_GEOCODE_DISTANCE_UNIT</key>
        <value
          xmlns:xs="http:...
          xmlns:xsi="http:...
          xsi:type="xs:string">METERS</value>
      </entry>
      <entry>
        <key
          xmlns:xs="http:...
          xmlns:xsi="http:...
          xsi:type="xs:string">REVERSE_GEOCODE_DISTANCE</key>
        <value
          xmlns:xs="http:...
          xmlns:xsi="http:...
          xsi:type="xs:string">1.49</value>
      </entry>
    </customFields>
  </address>
  <ranges>
    <lowHouse>329</lowHouse>
    <highHouse>367</highHouse>
    <side>UNKNOWN</side>
    <oddEvenIndicator>BOTH</oddEvenIndicator>
    <customValues />
  </ranges>
</candidates>
<candidates>
  <precisionLevel>1</precisionLevel>
  <formattedStreetAddress>
    344 WATTLE STREET
  </formattedStreetAddress>
  <formattedLocationAddress>
    ULTIMO NSW 2007
  </formattedLocationAddress>
  <precisionCode>RS5A</precisionCode>
  <sourceDictionary>0</sourceDictionary>
  <geometry>
    <type>Point</type>
    <coordinates>151.19599158560163</coordinates>
    <coordinates>-33.87967421977337</coordinates>
    <crs>
      <type>name</type>
      <properties>
        <name>epsg:4326</name>
      </properties>

```



```

    </crs>
  </geometry>
  <address>
    <mainAddressLine>
      344 WATTLE STREET
    </mainAddressLine>
    <addressLastLine>
      ULTIMO NSW 2007
    </addressLastLine>
    <placeName />
    <areaName1>NSW</areaName1>
    <areaName2>COUNCIL OF THE CITY OF SYDNEY</areaName2>
    <areaName3>ULTIMO</areaName3>
    <areaName4 />
    <postCode1>2007</postCode1>
    <postCode2 />
    <country>AUS</country>
    <addressNumber>344</addressNumber>
    <streetName>WATTLE</streetName>
    <customFields>
      <entry>
        <key
          xmlns:xs="http:...
          xmlns:xsi="http:...
xsi:type="xs:string">REVERSE_GEOCODE_DISTANCE_UNIT</key>
        <value
          xmlns:xs="http:...
          xmlns:xsi="http:...
          xsi:type="xs:string">METERS</value>
        </entry>
        <entry>
          <key
            xmlns:xs="http:...
            xmlns:xsi="http:...
            xsi:type="xs:string">REVERSE_GEOCODE_DISTANCE</key>
          <value
            xmlns:xs="http:...
            xmlns:xsi="http:...
            xsi:type="xs:string">1.49</value>
          </entry>
        </customFields>
      </address>
    <ranges>
      <lowHouse>329</lowHouse>
      <highHouse>367</highHouse>
      <side>UNKNOWN</side>
      <oddEvenIndicator>BOTH</oddEvenIndicator>
      <customValues />
    </ranges>
  </candidates>

```

```
</responses>  
</GeocodeServiceResponseList>
```

# Capabilities Service

## Capabilities Service Request

### Capabilities GET Request

A `GET` request to the `Capabilities` service returns information covering:

- supported services
- available geocoding engines
- supported countries
- supported operations and associated required and optional inputs
- custom fields

### Base URI

```
http://<server>:<port>/rest/GlobalGeocode/capabilities.[content type]?[query parameters]
```

where:

`.[content type]` indicates that the specified content type will be used by default. Optional.

#### **json**

Default content type is `JSON`, unless superseded by `HTTP` content negotiation

#### **xml**

Default content type is `XML`, unless superseded by `HTTP` content negotiation

`[query parameters]` are described in the following section.

### Query Parameters

There are several options for the type of information returned based on the query parameters:

- Include a country code to get the capabilities for the specified country;
- Include a country code and an operation to get the description of that operation; or,
- Exclude all query parameters to get the capabilities for all countries.

The query parameters for the `Capabilities` service are defined in the following table.

Name	Description
country	Specified the ISO 3166-1 alpha-3 country code. <b>Note:</b> For a listing of the ISO country codes, see <a href="#">Country Reference Listing and ISO 3166-1 Country Codes</a> on page 117
operation	Type of geocoding service operation. One of the following: <ul style="list-style-type: none"><li data-bbox="613 554 764 590">• geocode</li><li data-bbox="613 596 886 632">• reverseGeocode</li></ul>

## Capabilities Service Response

### GeocodeCapabilitiesResponse Object

The following table defines the response elements returned from the `Capabilities` service.

Name	Type	Description
<code>serviceName</code>	String	The name of a supported service.
<code>serviceDescription</code>	String	A description of the service.
<code>coreVersion</code>	String	The core version of Spectrum™ Technology Platform.
<code>geocodingEngines</code>	String	The installed country geocode engine(s).
<code>supportedCountries</code>	String	The countries supported by each installed country geocoder engine.
<code>geocoderVersions</code>	Map	The version number of the geocode engine.
<code>supportedOperations</code>	OperationsOperation object	An array that defines the supported operations for the specified input country or for all countries consisting of the following fields:
<code>name</code>	String	Name of the operation.
<code>requiredInputs</code>	InputParameter	Lists the required input fields for the operation. Includes the following elements: <ul style="list-style-type: none"> <li><code>name</code> (String)</li> <li><code>description</code> (String)</li> <li><code>type</code> (String)</li> <li><code>defaultValue</code> (String)</li> <li><code>lowBoundary</code> (String)</li> <li><code>highBoundary</code> (String)</li> <li><code>allowedValuesWithDescriptions</code> (Map)</li> </ul>

Name	Type	Description
optionalInputs	InputParameter	<p>Lists the optional input fields for the operation. Includes the following elements:</p> <ul style="list-style-type: none"><li>• name (String)</li><li>• description (String)</li><li>• type (String)</li><li>• defaultValue (String)</li><li>• lowBoundary (String)</li><li>• highBoundary (String)</li><li>• allowedValuesWithDescriptions (Map)</li></ul>
outputs	OutputParameter	<p>Lists the operation's output fields. Includes the following elements:</p> <ul style="list-style-type: none"><li>• name (String)</li><li>• description (String)</li><li>• type (String)</li></ul>

Name	Type	Description
supportLevels	SupportLevel	

Name	Type	Description
		<p>Lists the support levels for the operation. Includes the following elements:</p> <ul style="list-style-type: none"> <li>supportedDataLevel (Integer) <ul style="list-style-type: none"> <li><b>Data Postal Centroid=1</b> Postcode centroids are present in dictionaries (does not distinguish post code 2).</li> <li><b>Data Geographic Centroid=2</b> Geographic centroids are present in dictionaries (does not distinguish the type of geographic centroid).</li> <li><b>Data Street Segment=4</b> Street segment information present in dictionaries.</li> <li><b>Data Address Point=8</b> Point level data present in dictionaries.</li> </ul> </li> </ul> <p>The data level will contain the sum of all available data keys. For example,</p> <p><b>Value — Type of data</b></p> <p>15 — all (postal + geographic + segment + point)  14 — all but postal  13 — all but geographic  12 — point + segment  11 — point + geographic + postal  10 — point + geographic  9 — point + postal  8 — point only  7 — all but point  6 — segment + geographic  5 — segment + postal  4 — segment only  3 — postal + geographic  2 — geographic only  1 — postal only</p> <ul style="list-style-type: none"> <li>countries — (String) Countries</li> <li>updatedRequiredInputs — (InputParameter) Country-specific</li> </ul>



Name	Type	Description
		<p>required input fields</p> <ul style="list-style-type: none"> <li>• <code>updatedOptionalInputs</code> — (InputParameter) Country-specific optional input fields</li> <li>• <code>updatedOptionalOutputs</code> — (OutputParameter) Country-specific output fields</li> </ul>
<hr/>		
<code>customObjects</code> list of type <code>CustomObject</code> .		
<hr/>		
<code>name</code>	String	The name(s) of the custom object fields that were user-specified in Preferences.
<hr/>		
<code>description</code>	String	The description of the user-specified custom object fields.
<hr/>		
<code>properties</code>	list of type <code>CustomObjectMember</code>	<p>Where <code>CustomObjectMember</code> contains the following elements:</p> <ul style="list-style-type: none"> <li>• <code>name</code> — (String) Indicates name of parameter.</li> <li>• <code>input</code> — (InputParameter) Indicates the property is an input parameter.</li> <li>• <code>output</code> — (OutputParameter) Indicates the property is an output parameter.</li> </ul>
<hr/>		

## Examples

### Capabilities JSON Request & Response

#### JSON Request

The following is an example of a JSON request for the Capabilities service. In this example, the request is for the capabilities for Great Britain.

```
GET http://myserver:8080/rest/GlobalGeocode/capabilities.json?
country=GBR HTTP/1.1
```

#### JSON Response

The following shows the JSON response returned by the previous request. This response is an abbreviated view.

```
{
  "serviceName": "GeocodeService",
  "serviceDescription": "Provides a method to geocode and reverse
geocode",
  "coreVersion": "5.1.0.59",
  "geocodingEngines": [
    "World"
  ],
  "supportedCountries": [
    "XWG"
  ],
  "supportedOperations": [
    {
      "name": "geocode",
      "requiredInputs": [
        {
          "name": "address",
          "description": "The input address",
          "type": "Address",
          "defaultValue": null,
          "lowBoundary": null,
          "highBoundary": null,
          "allowedValuesWithDescriptions": {}
        }
      ],
      "optionalInputs": [
        {
          "name": "type",
          "description": "Indicates what kind of geocode
to perform",
          "type": "ONEOF",
```

```

        "defaultValue": "address",
        "lowBoundary": null,
        "highBoundary": null,
        "allowedValuesWithDescriptions": {
            "geographic": "geographic",
            "postal": "postal",
            "address": "address",
            "custom": "custom"
        }
    },
    {
        "name": "preferences",
        "description": "Contains preferences and constraints",
        "type": "Preferences",
        "defaultValue": null,
        "lowBoundary": null,
        "highBoundary": null,
        "allowedValuesWithDescriptions": {}
    }
],
"outputs": [
    {
        "name": "responses",
        "description": "The geocoded address information",
        "type": "Response"
    }
],
"supportLevels": [
    {
        "supportedDataLevel": 3,
        "countries": [
            "XWG"
        ],
        "updatedRequiredInputs": [],
        "updatedOptionalInputs": [],
        "updatedOptionalOutputs": [
            {
                "name": "CITYRANK",
                "description": "City ranking from 1 (highest)
                    to 10 (lowest). 0 means no rank available",
                "type": "KEY"
            }
        ]
    }
]
},
.
.
.

{
    "name": "responses",
    "description": "Holds results from a geocode

```

```

        or reverse geocode operation",
    "properties": [
        {
            "name": "totalPossibleCandidates",
            "input": null,
            "output": {
                "name": "totalPossibleCandidates",
                "description": "Number of candidate that could
                    have been returned from this query",
                "type": "int"
            }
        },
        {
            "name": "totalMatches",
            "input": null,
            "output": {
                "name": "totalMatches",
                "description": "Number of candidates that could
                    have been returned from this query",
                "type": "int"
            }
        },
        {
            "name": "candidates",
            "input": null,
            "output": {
                "name": "candidates",
                "description": "ordered list of matching candidates",
                "type": "LIST<Candidate>"
            }
        }
    ]
},
"geocoderVersions": {
    "World": "4.5"
}
}

```

## Capabilities XML Request & Response

### XML Request

The following is an example of an XML request for the Capabilities service. In this example, the request is for the capabilities for the reverse geocode operation for Mexico.

```
GET http://myserver:8080/rest/GlobalGeocode/capabilities.xml?
country=MEX&operation=reverseGeocode HTTP/1.1
```

### XML Response

The following shows the XML response returned by the previous request. This response is an abbreviated view.

```
<?xml version="1.0" encoding="UTF-8"?>
<GeocodeCapabilitiesResponse>
  <supportedOperations>
    <name>reverseGeocode</name>
    <requiredInputs>
      <name>points</name>
      <description>Point information for a country. i.e latitude and
longititude</description>
      <type>Point</type>
      <allowedValuesWithDescriptions />
    </requiredInputs>
    <optionalInputs>
      <name>preferences</name>
      <description>Contains preferences and constraints</description>
      <type>Preferences</type>
      <allowedValuesWithDescriptions />
    </optionalInputs>
    <outputs>
      <name>response</name>
      <description>The address corresponding to the input
point</description>
      <type>Response</type>
    </outputs>
    <supportLevels>
      <supportedDataLevel>7</supportedDataLevel>
      <countries>MEX</countries>
    </supportLevels>
  </supportedOperations>
  .
  .
  .
  <customObjects>
    <name>responses</name>
    <description>Holds results from a geocode or reverse geocode
operation</description>
```

```

    <properties>
      <name>totalPossibleCandidates</name>
      <output>
        <name>totalPossibleCandidates</name>
        <description>Number of candidate that could have been
returned from this query</description>
        <type>int</type>
      </output>
    </properties>
    <properties>
      <name>totalMatches</name>
      <output>
        <name>totalMatches</name>
        <description>Number of close candidates that could have been
returned from this query</description>
        <type>int</type>
      </output>
    </properties>
    <properties>
      <name>candidates</name>
      <output>
        <name>candidates</name>
        <description>ordered list of matching
candidates</description>
        <type>LIST<Candidate></type>
      </output>
    </properties>
  </customObjects>
</GeocodeCapabilitiesResponse>

```

# Dictionaries Service

## Dictionaries Service Request

### Dictionaries GET Request

A GET request to the `Dictionaries` service returns information on the configured dictionaries.

#### Base URI

```
http://<server>:<port>/rest/GlobalGeocode/dictionaries.[content
type]?[query parameters]
```

where:

`.[content type]` indicates that the specified content type will be used by default. Optional.

#### json

Default content type is `JSON`, unless superseded by `HTTP` content negotiation

#### xml

Default content type is `XML`, unless superseded by `HTTP` content negotiation

`[query parameters]` are described in the following section.

#### Query Parameters

There are a couple of options for the type of information returned based on the input query parameters:

- Include a country code to get the dictionaries for the specified country; or
- Exclude all query parameters to get a list of all the configured dictionaries.

The query parameters for the `Dictionaries` service are defined in the following table.

Name	Description
country	Three-letter ISO 3166-1 country code.  <b>Note:</b> For a listing of the ISO country codes, see <a href="#">Country Reference Listing and ISO 3166-1 Country Codes</a> on page 117

## Dictionary Service Response

### ConfiguredDictionaryResponse Object

A request to the `Dictionaries` service returns a `ConfiguredDictionaryResponse` object that contains:

- `dictionaries`— an array consisting of the configured dictionaries. Each listed dictionary includes information on installation path, type of dictionary, country support and more.

Name	Type	Description
<code>customDictionary</code>	Boolean	Indicates if the dictionary is a user-defined dictionary. <b>True</b> The dictionary is a custom, user-defined dictionary. <b>False</b> The dictionary is not a custom dictionary.
<code>repositoryName</code>	String	The file name of the dictionary.
<code>path</code>	String	The location of the dictionary on the server.
<code>vintage</code>	String	The data vintage from the vendor.
<code>source</code>	String	The data vendor.
<code>description</code>	String	The name of the dictionary.
<code>countrySupportInfos</code> , a collection of <code>CountrySupport</code> objects. Each comprising the following elements:		
<code>supportedCountries</code>	List <String>	A list of countries supported by the specified dictionary.
<code>supportedDataTypes</code>	List <DataType>	Type of data in dictionary. One of the following: <ul style="list-style-type: none"> <li>• POINT</li> <li>• STREET</li> <li>• POST_CODE_1</li> <li>• POST_CODE_2</li> <li>• AREA_NAME_1</li> <li>• AREA_NAME_2</li> <li>• AREA_NAME_3</li> <li>• AREA_NAME_4</li> </ul>



## Examples

### Dictionaries JSON Request & Response

#### JSON Request

The following is an example of a JSON request for the Dictionaries service. In this example, the request is for a list of configured geocoding datasets for France.

```
GET http://myserver:8080/rest/GlobalGeocode/dictionaries.json?
country=FRA HTTP/1.1
```

#### JSON Response

The following shows the JSON response returned by the previous request.

```
{
  "dictionaries": [
    {
      "customDictionary": false,
      "repositoryName": "MAPMARKER_FR_Navteq_2013_Q4",
      "path": null,
      "vintage": "2013.Q4",
      "source": "Navteq",
      "description": "MAPMARKER_FR_Navteq_2013_Q4",
      "countrySupportInfos": [
        {
          "supportedCountries": [
            "MYT",
            "REU",
            "GUF",
            "GLP",
            "MTQ",
            "FRA",
            "MCO"
          ],
          "supportedDataTypes": [
            "POST_CODE_1",
            "AREA_NAME_3",
            "STREET"
          ]
        }
      ]
    },
    {
      "customDictionary": false,
      "repositoryName": "MAPMARKER_FR_TomTom_2013_12",
      "path": null,
```

```
"vintage": "2013.12",
"source": "TomTom",
"description": "MAPMARKER_FR_TomTom_2013_12",
"countrySupportInfos": [
  {
    "supportedCountries": [
      "MYT",
      "REU",
      "GUF",
      "GLP",
      "MTQ",
      "FRA",
      "MCO"
    ],
    "supportedDataTypes": [
      "POST_CODE_1",
      "AREA_NAME_3",
      "STREET"
    ]
  }
]
}
```

## Dictionaries XML Request & Response

### XML Request

The following is an example of an XML request for the `Dictionaries` service. In this example, the request is for a list of configured geocoding datasets for Germany.

```
GET http://myserver:8080/rest/GlobalGeocode/dictionaries.xml?
country=DEU HTTP/1.1
```

### XML Response

The following shows the XML response returned by the previous request.

```
<?xml version="1.0" encoding="UTF-8"?>
<ConfiguredDictionaryResponse>
  <dictionaries>
    <customDictionary>false</customDictionary>
    <repositoryName>MAPMARKER_DE_Standard_2014_09</repositoryName>
    <vintage>2014.09</vintage>
    <source>Standard</source>
    <description>MAPMARKER_DE_Standard_2014_09</description>
    <countrySupportInfos>
      <supportedCountries>DEU</supportedCountries>
      <supportedDataTypes>POST_CODE_1</supportedDataTypes>
      <supportedDataTypes>AREA_NAME_3</supportedDataTypes>
      <supportedDataTypes>STREET</supportedDataTypes>
    </countrySupportInfos>
  </dictionaries>
  <dictionaries>
    <customDictionary>false</customDictionary>
    <repositoryName>
      MAPMARKER_DE_AddressPoint_2014_09
    </repositoryName>
    <vintage>2014.09</vintage>
    <source>AddressPoint</source>
    <description>
      MAPMARKER_DE_AddressPoint_2014_09
    </description>
    <countrySupportInfos>
      <supportedCountries>DEU</supportedCountries>
      <supportedDataTypes>POINT</supportedDataTypes>
      <supportedDataTypes>POST_CODE_1</supportedDataTypes>
      <supportedDataTypes>AREA_NAME_3</supportedDataTypes>
    </countrySupportInfos>
  </dictionaries>
</ConfiguredDictionaryResponse>
```

# A - Country-Specific Information

## In this section

---

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Country Sections	125

## Country Reference Listing and ISO 3166-1 Country Codes

Country Name	Section link	ISO 3166-1 Alpha-2 Country Code	ISO 3166-1 Alpha-3 Country Code
ALBANIA	<a href="#">Republic of Albania (ALB)</a> on page 125	AL	ALB
ALGERIA	<a href="#">Algeria (DZA)</a> on page 128	DZ	DZA
AMERICAN SAMOA	See <a href="#">United States (USA)</a> on page 632	US	USA
ANDORRA	<a href="#">Andorra (AND)</a>	AD	AND
ANGOLA	<a href="#">Angola (AGO)</a> on page 132	AO	AGO
ARGENTINA	<a href="#">Argentina (ARG)</a> on page 136	AR	ARG
ARUBA	<a href="#">Aruba (ABW)</a> on page 141	AW	ABW
AUSTRALIA	<a href="#">Australia (AUS)</a> on page 145	AU	AUS
AUSTRIA	<a href="#">Austria (AUT)</a> on page 156	AT	AUT
BAHAMAS	<a href="#">Bahamas (BHS)</a> on page 161	BS	BHS
BAHRAIN	<a href="#">Bahrain (BHR)</a> on page 165	BH	BHR
BARBADOS	<a href="#">Barbados (BRB)</a> on page 169	BB	BRB
BELGIUM	<a href="#">Belgium (BEL)</a> on page 173	BE	BEL
BELIZE	<a href="#">Belize (BLZ)</a> on page 177	BZ	BLZ
BENIN	<a href="#">Benin (BEN)</a> on page 181	BJ	BEN
BERMUDA	<a href="#">Bermuda (BMU)</a> on page 185	BM	BMU

Country Name	Section link	ISO 3166-1 Alpha-2 Country Code	ISO 3166-1 Alpha-3 Country Code
BOLIVIA	<a href="#">Bolivia (BOL)</a> on page 189	BO	BOL
BOTSWANA	<a href="#">Botswana (BWA)</a> on page 196	BW	BWA
BOSNIA AND HERZEGOVINA	<a href="#">Bosnia and Herzegovina (BIH)</a> on page 192	BA	BIH
BRAZIL	<a href="#">Brazil (BRA)</a> on page 200	BR	BRA
BRUNEI DARUSSALAM	<a href="#">Brunei Darussalam (BRN)</a> on page 205	BN	BRN
BURKINA FASO	<a href="#">Burkina Faso (BFA)</a> on page 209	BF	BFA
BURUNDI	<a href="#">Burundi (BDI)</a> on page 213	BI	BDI
CAMEROON	<a href="#">Cameroon (CMR)</a> on page 217	CM	CMR
CANADA	<a href="#">Canada (CAN)</a> on page 221	CA	CAN
CHILE	<a href="#">Chile (CHL)</a> on page 229	CL	CHL
CHINA	<a href="#">China (CHN)</a> on page 233	CN	CHN
CONGO	<a href="#">Republic of the Congo (COG)</a> on page 241	CG	COG
CONGO, DEMOCRATIC REPUBLIC OF THE	<a href="#">Democratic Republic of the Congo (COD)</a> on page 245	CD	COD
COSTA RICA	<a href="#">Costa Rica (CRI)</a> on page 249	CR	CRI
CROATIA (LOCAL NAME: HRVATSKA)	<a href="#">Croatia (HRV)</a> on page 253	HR	HRV
CUBA	<a href="#">Cuba (CUB)</a> on page 257	CU	CUB
CYPRUS	<a href="#">Cyprus (CYP)</a> on page 260	CY	CYP
CZECH REPUBLIC	<a href="#">Czech Republic (CZE)</a> on page 264	CZ	CZE

Country Name	Section link	ISO 3166-1 Alpha-2 Country Code	ISO 3166-1 Alpha-3 Country Code
DENMARK	<a href="#">Denmark (DNK)</a> on page 268	DK	DNK
DOMINICAN REPUBLIC	<a href="#">Dominican Republic (DOM)</a> on page 273	DO	DOM
ECUADOR	<a href="#">Ecuador (ECU)</a> on page 277	EC	ECU
EGYPT	<a href="#">Egypt (EGY)</a> on page 281	EG	EGY
EL SALVADOR	<a href="#">El Salvador (SLV)</a> on page 285	SV	SLV
ESTONIA	<a href="#">Estonia (EST)</a> on page 289	EE	EST
FINLAND	<a href="#">Finland (FIN)</a> on page 293	FI	FIN
FRANCE	<a href="#">France (FRA)</a> on page 297	FR	FRA
FRENCH GUYANA	See <a href="#">France (FRA)</a> on page 297	GF	GUF
GABON	<a href="#">Gabon (GAB)</a> on page 305	GA	GAB
GERMANY	<a href="#">Germany (DEU)</a> on page 309	DE	DEU
GHANA	<a href="#">Ghana (GHA)</a> on page 313	GH	GHA
GREAT BRITAIN	<a href="#">Great Britain (GBR)</a> on page 317	GB	GBR
GREECE	<a href="#">Greece (GRC)</a> on page 322	GR	GRC
GUADELOUPE	See <a href="#">France (FRA)</a> on page 297	GP	GLP
GUAM	See <a href="#">United States (USA)</a> on page 632	US	USA
GUATEMALA	<a href="#">Guatemala (GTM)</a> on page 326	GT	GTM
GUYANA	<a href="#">Guyana (GUY)</a> on page 330	GY	GUY
HONDURAS	<a href="#">Honduras (HND)</a> on page 334	HN	HND

Country Name	Section link	ISO 3166-1 Alpha-2 Country Code	ISO 3166-1 Alpha-3 Country Code
HONG KONG	<a href="#">Hong Kong (HKG)</a> on page 338	HK	HKG
HUNGARY	<a href="#">Hungary (HUN)</a> on page 342	HU	HUN
ICELAND	<a href="#">Iceland (ISL)</a> on page 346	IS	ISL
INDIA	<a href="#">India (IND)</a> on page 350	IN	IND
INDONESIA	<a href="#">Indonesia (IDN)</a> on page 355	ID	IDN
IRAQ	<a href="#">Iraq (IRQ)</a> on page 358	IQ	IRQ
IRELAND	<a href="#">Ireland (IRL)</a> on page 362	IE	IRL
ITALY	<a href="#">Italy (ITA)</a> on page 369	IT	ITA
JAMAICA	<a href="#">Jamaica (JAM)</a> on page 374	JM	JAM
JAPAN	<a href="#">Japan (JPN)</a> on page 378	JP	JPN
JORDAN	<a href="#">Jordan (JOR)</a> on page 383	JO	JOR
KENYA	<a href="#">Kenya (KEN)</a> on page 387	KE	KEN
KOSOVO	<a href="#">Kosovo (XKX)</a> on page 391	XK	XKX
KUWAIT	<a href="#">Kuwait (KWT)</a> on page 395	KW	KWT
LATVIA	<a href="#">Latvia (LVA)</a> on page 399	LV	LVA
LEBANON	<a href="#">Lebanonese Republic (LBN)</a> on page 404	LB	LBN
LESOTHO	<a href="#">Lesotho (LSO)</a> on page 408	LS	LSO
LIECHTENSTEIN	See <a href="#">Switzerland (CHE)</a> on page 588.	LI	LIE
LITHUANIA	<a href="#">Lithuania (LTU)</a> on page 412	LT	LTU



Country Name	Section link	ISO 3166-1 Alpha-2 Country Code	ISO 3166-1 Alpha-3 Country Code
LUXEMBOURG	See <a href="#">Belgium (BEL)</a> on page 173.	LU	LUX
MACAO	<a href="#">Macau (MAC)</a> on page 416	MO	MAC
MACEDONIA, REPUBLIC OF	<a href="#">Republic of Macedonia (MKD)</a>	MK	MKD
MALAWI	<a href="#">Malawi (MWI)</a> on page 424	MW	MWI
MALAYSIA	<a href="#">Malaysia (MYS)</a> on page 428	MY	MYS
MALI	<a href="#">Mali (MLI)</a> on page 432	ML	MLI
MALTA	<a href="#">Republic of Malta (MLT)</a> on page 435	ML	MLT
MARTINIQUE	See <a href="#">France (FRA)</a> on page 297.	MQ	MTQ
MAURITANIA	<a href="#">Mauritania (MRT)</a> on page 439	MR	MRT
MAURITIUS	<a href="#">Mauritius (MUS)</a> on page 443	MU	MUS
MAYOTTE	See <a href="#">France (FRA)</a> on page 297.	YT	MYT
MEXICO	<a href="#">Mexico (MEX)</a> on page 447	MX	MEX
MONACO	See <a href="#">France (FRA)</a> on page 297.	MC	MCO
MONTENEGRO	<a href="#">Montenegro (MNE)</a> on page 453	ME	MNE
MOROCCO	<a href="#">Morocco (MAR)</a> on page 457	MA	MAR
MOZAMBIQUE	<a href="#">Mozambique (MOZ)</a> on page 461	MZ	MOZ
NAMIBIA	<a href="#">Namibia (NAM)</a> on page 465	NA	NAM
NETHERLANDS	<a href="#">Netherlands (NLD)</a> on page 469	NL	NLD
NEW ZEALAND	<a href="#">New Zealand (NZL)</a> on page 473	NZ	NZL

Country Name	Section link	ISO 3166-1 Alpha-2 Country Code	ISO 3166-1 Alpha-3 Country Code
NICARAGUA	<a href="#">Nicaragua (NIC)</a> on page 478	NI	NIC
NIGER	<a href="#">Niger (NER)</a> on page 482	NE	NER
NIGERIA	<a href="#">Nigeria (NGA)</a> on page 486	NG	NGA
NORTH MARIANA ISLANDS	See <a href="#">United States (USA)</a> on page 632	US	USA
NORWAY	<a href="#">Norway (NOR)</a> on page 490	NO	NOR
OMAN	<a href="#">Oman (OMN)</a> on page 494	OM	OMN
PALAU	See <a href="#">United States (USA)</a> on page 632	US	USA
PANAMA	<a href="#">Panama (PAN)</a> on page 498	PA	PAN
PARAGUAY	<a href="#">Paraguay (PRY)</a> on page 502	PY	PRY
PERU	<a href="#">Peru (PER)</a> on page 506	PE	PER
PHILIPPINES	<a href="#">Philippines (PHL)</a> on page 510	PH	PHL
POLAND	<a href="#">Poland (POL)</a> on page 514	PL	POL
PORTUGAL	<a href="#">Portugal (PRT)</a> on page 518	PT	PRT
PUERTO RICO	See <a href="#">United States (USA)</a> on page 632	US	USA
QATAR	<a href="#">Qatar (QAT)</a> on page 523	QA	QAT
REUNION	See <a href="#">France (FRA)</a> on page 297.	RE	REU
ROMANIA	<a href="#">Romania (ROU)</a> on page 527	RO	ROU
RUSSIAN FEDERATION	<a href="#">Russian Federation (RUS)</a> on page 531	RU	RUS
RWANDA	<a href="#">Rwanda (RWA)</a> on page 535	RW	RWA

Country Name	Section link	ISO 3166-1 Alpha-2 Country Code	ISO 3166-1 Alpha-3 Country Code
SAINT KITTS AND NEVIS	<a href="#">Saint Kitts and Nevis (KNA)</a> on page 539	KN	KNA
SAUDI ARABIA	<a href="#">Saudi Arabia (SAU)</a> on page 543	SA	SAU
SENEGAL	<a href="#">Senegal (SEN)</a> on page 547	SN	SEN
SERBIA	<a href="#">Republic of Serbia (SRB)</a> on page 550	RS	SRB
SINGAPORE	<a href="#">Singapore (SGP)</a> on page 554	SG	SGP
SLOVAKIA (SLOVAK REPUBLIC)	<a href="#">Slovakia (SVK)</a> on page 560	SK	SVK
SLOVENIA	<a href="#">Slovenia (SVN)</a> on page 564	SI	SVN
SOUTH AFRICA	<a href="#">South Africa (ZAF)</a> on page 568	ZA	ZAF
SPAIN	<a href="#">Spain (ESP)</a> on page 572	ES	ESP
SURINAME	<a href="#">Republic of Suriname (SUR)</a> on page 576	SR	SUR
SWAZILAND	<a href="#">Swaziland (SWZ)</a> on page 580	SZ	SWZ
SWEDEN	<a href="#">Sweden (SWE)</a> on page 584	SE	SWE
SWITZERLAND	<a href="#">Switzerland (CHE)</a> on page 588	CH	CHE
TAIWAN	<a href="#">Taiwan (TWN)</a> on page 592	TW	TWN
TANZANIA, UNITED REPUBLIC OF	<a href="#">United Republic of Tanzania (TZA)</a> on page 596	TZ	TZA
THAILAND	<a href="#">Thailand (THA)</a> on page 600	TH	THA
TOGO	<a href="#">Togo (TGO)</a> on page 604	TG	TGO
TRINIDAD AND TOBAGO	<a href="#">Trinidad and Tobago (TTO)</a> on page 608	TT	TTO
TUNISIA	<a href="#">Tunisia (TUN)</a> on page 612	TN	TUN

Country Name	Section link	ISO 3166-1 Alpha-2 Country Code	ISO 3166-1 Alpha-3 Country Code
TURKEY	<a href="#">Turkey (TUR)</a> on page 616	TR	TUR
UGANDA	<a href="#">Uganda (UGA)</a> on page 620	UG	UGA
UKRAINE	<a href="#">Ukraine (UKR)</a> on page 624	UA	UKR
UNITED ARAB EMIRATES	<a href="#">United Arab Emirates (ARE)</a> on page 628	AE	ARE
UNITED KINGDOM	See <a href="#">Great Britain (GBR)</a> on page 317.	GB	GBR
UNITED STATES	<a href="#">United States (USA)</a> on page 632	US	USA
URUGUAY	<a href="#">Uruguay (URY)</a> on page 670	UY	URY
VENEZUELA	<a href="#">Venezuela (VEN)</a> on page 674	VE	VEN
VIRGIN ISLANDS	See <a href="#">United States (USA)</a> on page 632	US	USA
WORLD GEOCODER	<a href="#">World Geocoder (XWG)</a> on page 682	XW	XWG
YEMEN	<a href="#">Republic of Yemen (YEM)</a> on page 718	YE	YEM
ZAMBIA	<a href="#">Zambia (ZMB)</a> on page 722	ZM	ZMB
ZIMBABWE	<a href="#">Zimbabwe (ZWE)</a> on page 726	ZW	ZWE

## Country Sections

### Republic of Albania (ALB)

This section defines the supported geocoding datasets, operations, and input and output field information for the Republic of Albania.

#### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Republic of Albania.

**Note:** Custom User Dictionaries are not supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Albanian	Yes	Yes	Yes	Yes	No	No	No

#### Supported Operations

The following operations are supported for the Republic of Albania:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

#### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Rr. Reshit Collaku 4 <b>1000 Tirana</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city, town or locality. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the four-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Albania, the country code is ALB. Required for forward geocoding.

### *Address Guidelines for the Republic of Albania*

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on the Republic of Albania addresses, see the Albania Post website: <http://www.en.postashqiptare.al/>

- **Required fields**—Addresses must contain either a city or postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to the Republic of Albania.

### Output Fields

The following table lists the address fields returned for a candidate located in the Republic of Albania.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city, town or locality.
<code>areaName4</code>	Not used.

Field Name	Description
postCode1	The four-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Albania, the country code is ALB.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Republic of Albania does not have any custom output fields.

## Algeria (DZA)

This section defines the supported geocoding datasets, operations, and input and output field information for Algeria.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Algeria.

**Note:** Custom User Dictionaries are supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French, Arabic	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Algeria:



- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Not used.
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	The last line of the address. Optional.
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the town. Optional.
areaName4	String	Not used.
postalCode	String	Not used.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Algeria, the country code is DZA. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Algeria.

### Output Fields

The following table lists the address fields returned for a candidate located in Algeria.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	Not used.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.

Field Name	Description
country	The three-letter ISO 3166-1 Alpha-3 country code. For Algeria, the country code is DZA.
addressNumber	Not used.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Algeria does not have any custom output fields.

## Angola (AGO)

This section defines the supported geocoding datasets, operations, and input and output field information for Angola.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Angola.

**Note:** Custom User Dictionaries are not supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Portuguese	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Angola:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Rua Major Kanhangulo 197 <b>Luanda</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Angola does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Angola, the country code is AGO. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Angola.

### Output Fields

The following table lists the address fields returned for a candidate located in Angola.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not applicable.
<code>areaName2</code>	Not applicable.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not applicable.
<code>postCode1</code>	Not applicable.
<code>postCode2</code>	Not applicable.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Angola, the country code is AGO.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Angola does not have any custom output fields.

## Argentina (ARG)

This section defines the supported geocoding datasets, operations, and input and output field information for Argentina.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Argentina.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Spanish	Yes	Yes	Yes	Yes	Yes	No	No
NAVTEQ Spanish	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Argentina:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>San Martin 230  <b>Y5900FNF Villa Maria</b></p>
areaName1	String	Specifies the region or province. Optional.
areaName2	String	Specifies the department. Optional.
areaName3	String	<p>Specifies the city or town name. Your input address should use the official city name or alias. For example, "Buenos Aires" is recognized as an alias for Capital Federal.</p> <p><b>Note:</b> In Argentina, Buenos Aires Federal District is not part of the Buenos Aires province. If your input specifies only "Buenos Aires", candidates are returned for the Federal District and in the region of Buenos Aires.</p> <p>For provincial capitals in Argentina, you can use the word Capital as well as the actual capital name. For example, the input of "Capital, MZA" is equivalent to "Mendoza, MZA".</p>
areaName4	String	Specifies the neighborhood or barrio. Optional.
postalCode	String	Specifies the 8-digit postal code. The first letter indicates the province, the next 4 digits indicate the locality, and the last 3 letters indicate the block.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Argentina, the country code is ARG. Required for forward geocoding.

### Address Guidelines for Argentina

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Argentine addresses, see the Correo Argentino website: <http://www.correoargentino.com.ar/>.

- **Required fields**—If you are using the standard TomTom database, addresses must contain a city. For the NAVTEQ database, addresses can contain either a city or postal code.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. For example, you can input Calle 5 or Calle cinco and get the same returned candidates. Ordinals are also recognized in input addresses. The following numbers and equivalents are recognized as part of a street name input:

1, UNO, PRIMERO, PRIMER, PRIMERA

5, CINCO, QUINTO, QUINTA

For example, an input street name of "25 de Mayo" is recognized and handled the same way as "Veinticinco de Mayo".

- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported in input addresses. Examples of typical thoroughfare types are:

Avendia	Avendia	Av	Ave	Avda
Calle	C	Clle		
Lateral Ruta	Lat Ruta	L R	LR	
Ruta Provincia	R P	RP		

- **Proper names and dates in street and town names**—Proper names and dates are often used in Argentina addresses, and these are handled by the geocoder for Argentina. For example, an input street name of "Juan F. Ibarra" is recognized and handled the same way as "Juan Felipe Ibarra".
- **Directionals in addresses**—The following directionals are recognized in input addresses: Norte, Oriente, Este, Sur, Oeste, Occidente, Poniente, N, E, S, O, NE, NO, SE, SO, Noreste, Sudeste, Noroeste, Sudoeste.
- **Abbreviations in addresses**—A number of common abbreviations can be used in input addresses. The geocoder for Argentina will recognize the abbreviations and geocode successfully. For example, following is a small sample of equivalent abbreviations. This is not a complete list of address abbreviations.

Bario	BAR
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Ciudad	CD	CD.
Colonia	COL	COL.
Doctor	DR	
Francisco	FCO	

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Argentina.

### Output Fields

The following table lists the address fields returned for a candidate located in Argentina.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.

Field Name	Description
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	The region or province.
areaName2	The department.
areaName3	The city or town.
areaName4	The neighborhood or barrio.
postCode1	The 8-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Argentina, the country code is ARG.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Argentina does not have any custom output fields.

## Aruba (ABW)

This section defines the supported geocoding datasets, operations, and input and output field information for Aruba.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Aruba.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Dutch	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Aruba:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>L.G. Smith Boulevard #160 Sun Plaza Suite 110 <b>Oranjestad</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Required.
areaName4	String	Not used.
postalCode	String	Not used - Aruba does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Aruba, the country code is ABW. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required. For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Aruba.

### Output Fields

The following table lists the address fields returned for a candidate located in Aruba.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Aruba, the country code is ABW.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Aruba does not have any custom output fields.



## Australia (AUS)

This section defines the supported geocoding datasets, operations, and input and output field information for Australia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Australia.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
AUS Standard	Yes	Yes	Yes	Yes	Yes	No	No
PMSA GNAF English	Yes	Yes	Yes	Yes	Yes	Yes	No

### Supported Operations

The following operations are supported for Australia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

Australian addresses may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>4360 Dukes Rd.  <b>Kalgoorlie WA 6430</b></p>
areaName1	String	Specifies the state or territory. Optional.
areaName2	String	The Local Government Authority (LGA). Optional.
areaName3	String	Specifies a town or suburb.
areaName4	String	Not used.
postalCode	String	Australia uses a four-digit postal code system. In general, the first digit represents a state or territory, the second digit represents a region with a state, and digits three and four representing towns.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Australia, the country code is AUS. Required for forward geocoding.

### Address Guidelines for Australia

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Australia addresses, see the Australia Post website: [www.auspost.com.au](http://www.auspost.com.au).

- **Required fields**—Addresses must contain either a city or a postal code.
- **House numbers and unit information**—The house number pinpoints the location of the address. Unit input can be in one of two formats, as shown in the following examples:

- Apt 99, 123 Main St., where Apt is the unit type and 99 is the unit number. In this format, you must specify a valid unit type, otherwise the address will not be geocoded correctly. For a listing of valid unit types, see [www.auspost.com.au](http://www.auspost.com.au).
- 99-123 Main St. For an address derived from the GNAF database, this address is a unique house number and is geocoded as a single delivery point, not as a range.
- **Directional suffixes**—Use directional suffixes wherever possible. This is especially true in towns and cities that consist mainly of numbered streets. These streets can only be distinguished by their directional suffixes and street types. They also distinguish addresses on streets that change direction. For example: 123 Queen St W and 123 Queen St E would have very different coordinates.
- **Street types**—These distinguish different streets of the same name. For example, Main Avenue and Main Street are two entirely different entities. Using types is not essential, but it adds precision to your data. For a listing of street types, see [www.auspost.com.au](http://www.auspost.com.au).
- **City/suburb name**—Enter the city/suburb name in the areaName3 field. Note that all input addresses must contain either a city or a postal code. If the geocoder does not make a match on the street in the specified suburb, it can make a match on the Local Government Area (LGA). Local Government Area (LGAs) do not encompass all of Australia. For example, LGAs do not cover extensive northern parts of South Australia, a large part of the Northern Territory, and the Australian Capital Territory. An LGA can include a number of official suburbs. It is best to use the suburb name for geocoding purposes, but it is possible to get a match on the LGA (or to return LGA information) in geocoded results.
- **Postal code**—All postcodes consist of four digits. While there are exceptions, the general format of postcodes is as follows:

**Note:** These are general guidelines, and there are exceptions to these postcode number ranges.

- Digit 1 represents the state or territory, within the following general conventions:

2	NSW
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2600 and 2900	ACT
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3	VIC
---	-----

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4	QLD
---	-----

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5	SA
---	----

6	WA
---	----

---

7	TAS
---	-----

---

0	NT
---	----

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- Digit 2 represents a region within the state. State or territorial capitals usually have a 0 or 1 as the second digit.
- Digits 3 and 4 represent towns. Major towns usually have a 0 as the last digit (or sometimes as the last two digits).

### Address Range Input

Street range data represents a range of house numbers that can possibly exist but are not guaranteed to exist. For addresses derived from the Street Range Address database, house number matching is more relaxed compared to the GNAF database. Also, the candidate house number may be changed based on how the input house number matches the suffix/range data.

The following table shows geocoding match results with house number ranges from a Street range data source:

Input House Number	Candidate House Number Range	Candidate House Number	Match or Non-Match
10	10-12	10	Match
10A	10-12	10	Match
10	8-12	10	Match
10-14	10-12	10	Match
10-14	10-20	10-14	Match
10	12-16	12	Non-Match

### GNAF Range Address Matching

Australian addresses originating from the GNAF database may contain house number ranges, but these records still represent single address delivery points. These range addresses may also have alphabetic suffixes. For example, the following house address numbers each represent a single address. GNAF suffix address matching GNAF range address matching

10-12 10A-10C 10-10A

The Spectrum™ Technology Platform validates and geocodes these point source addresses. If the criteria are met and the reliability of the match is 1 or 2, the Spectrum™ Technology Platform returns point matches with an S8 result code.

If a complete house number range/suffix is specified for input, candidates from a point data source must be fully matched. If partial house number information is given (without complete range or suffix information), then candidates with non-conflicting range/suffix information (or no range/suffix information) will match.

The following table shows geocoding match results with house number ranges from a point data source (GNAF database.). The matching rules are based on the Address Matching Approval System (AMAS®) developed by Australia Post.

Input House Number	Data House Number	Candidate House Number	Match or Non-Match
10	10A	10A	Match: Input number 10 matches 10A (or 10 with any suffix).
10A	10	10	Match: Input number 10 matches.
10C	10A	10A	Non-Match: Input suffix does not match the data suffix.
10	10-12	10-12	Match: Input number 10 matches the first number of the dashed data range.
12	10-12	10-12	Match: Input number 12 matches the last number of the dashed data range.

Input House Number	Data House Number	Candidate House Number	Match or Non-Match
10A	10-12	10-12	Match: Input number 10 matches the first number of the dashed data range. Input suffix is not in data, but this does not affect matching.
12	10-14	10-14	Non-Match. Input number 12 does not match either number of the dashed data range. No interpolation is performed on a house number ranges.
10-12	10-14	10-14	Match: First input number 10 matches the first number of the data and the second number 12 is within the data range.
10-12	10A-14A	10A-14A	Match: The input has no suffix information, but the input number 10 matches.
10-16	10-12	10-12	Non-Match: Input second number 16 is outside the 10-12 data range.
10-13	10-14	10-14	Non-Match: Both input numbers are within data range, but second number (13) is odd and this does not match with the even range of 10-14.
10-13	10-15	10-15	Match: Data range (10-15) suggests a mixed odd/even range, so input is matched.
RMB 10	10	10	Match: Input number matches
16	A16	A16	Match: Input number matches
RMB 10	A10	A10	Non-Match: Input suffix does not match the data suffix.

### Specifying Unit Information in an Address

When you use the GNAF database, the geocoder recognizes several formats of unit types (such as unit, suite, floor, and flat address prefix) in an address, as illustrated below:

- "Unit 5 6 Macleay Street"—Full unit description used in conjunction with unit value and address number.
- "U 5 6 Macleay Street"—Abbreviated unit description used in conjunction with unit value and address number.
- "5/6 Macleay Street"—No Unit abbreviation with unit number and address number separated by a forward slash notation.

Exact matches on unit and address are placed first in the list of returned candidates.

### Specifying Level Information in an Address

If you use the GNAF database the geocoder can return level information for some addresses. Level information identifies the floor or level of a multi-storey building. The GNAF database includes level information for some Australian states. Level information may be associated with unit information, but not necessarily. If the GNAF database contains multiple records with the same level, the level information is returned only if the input address contains unique content (such as a unit number).

If the GNAF database has level information for an address, the geocoder returns that information with the matched candidate. The correct level information is returned (when available) even if the input address did not include level information, or if the input had the wrong level information.

If the input address has level information but the GNAF database does not include level information for the matching address, then the input level information is discarded since it is not validated in the GNAF data.

Following are several examples of partial addresses that contain level information. The level component is indicated in bold.

Suite 3 **Level 7**, 17 Jones Street (Suite 3 is a unit)

**Floor 2**, 17 Jones Street

**Level 7**, 17-19 Middleborough Road

### Single Line Input

Instead of entering each address element in separate fields, you can enter the entire address in the `mainAddress` input field.

*[unit\_info][level\_info][address\_number][street\_info][area\_name\_3][area\_name\_1][post\_code]*

Where:

- *[unit\_info][level\_info][address\_number]* are optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.).
- *[area\_name\_3]* is the city.

- `[area_name_1]` is the state or territory.
- `[postal_code]` is the postal code.

For best results, put a comma between street information and the lastline (e.g. city and postal) information.

### Custom Options

The following table lists the options that are unique for Australia. These custom fields are optional, and unless otherwise noted, they are available for both Geocoding and Reverse Geocoding.

For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
KEY_STREET_FRONTAGE	When set to true, requests GNAF street frontage points. Default = false.
KEY_GNAF_ORIGINAL	When set to true, returns the GNAF original point coordinates. Default = false.
KEY_POSTAL_CODE_OVERRIDE	When set to true, a matching postal code will match even if the city/suburb does not match. Default = false.
KEY_RETURN_STREET_TYPE_ABBREVS	When set to true, returns the abbreviated street types instead of the Australia default of fully spelled-out type. Default = false.
USE_ADDRESS_POINT_INTERPOLATION	When set to true, enables address point interpolation. Default = false. Supported only in forward geocoding.  <b>Note:</b> The address point interpolation feature requires that you have a point-level geocoding dataset installed.
USE_CENTERLINE_OFFSET	When set to true, calculates the centerline offset for point addresses. Default = false. Supported only in forward geocoding.  <b>Note:</b> The centerline feature requires that you have a point-level geocoding dataset installed.  A centerline point match is indicated by a result code beginning with <b>SC</b> .
CENTERLINE_OFFSET	When <code>USE_CENTERLINE_OFFSET</code> is enabled, this specifies the distance to offset the point from centerline. Default = 0. Supported in forward geocoding only.
CENTERLINE_OFFSET_UNIT	When <code>USE_CENTERLINE_OFFSET</code> is enabled, this specifies the unit type for the centerline offset. Valid values = feet, meters. Default = meters. Supported only in forward geocoding.



### Output Fields

The following table lists the address fields returned for a candidate located in Australia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	The Local Government Authority (LGA) name.
<code>areaName3</code>	The town, suburb or locality.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Postcode.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Australia, the country code is AUS.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.
<code>unitValue</code>	The unit value/number, such as "3B".
<code>customFields</code>	See the following section for the custom field definitions.

### Custom Output Fields

The following table lists the output fields that are unique for Australia. Unless otherwise noted, these fields can be returned for both forward and reverse geocoding.

Field	Description
STREET_TYPE_ABB	The abbreviation for the street type, which is spelled out by default.
ORIGINAL_LATITUDE	The original GNAF latitude.
ORIGINAL_LONGITUDE	The original GNAF longitude.
UD_ORIGINAL_LATITUDE	The original latitude returned from a point-based user dictionary.
UD_ORIGINAL_LONGITUDE	The original longitude returned from a point-based user dictionary.
GNAF_PARCEL_ID	The GNAF parcel identifier.
GNAF_PID	The GNAF Persistent Identifier (GNAF PID) is a 14-character alphanumeric string that uniquely identifies each GNAF address. The PID is constructed from a combination of the major address fields of the GNAF Dictionary. An example of a GNAF PID is: GAVIC411711441
GNAF_PRINCIPAL_PID	The Persistent Identifier of the principal address.
GEOCONTAINMENT	This specifies whether the returned coordinates are inside or outside the address boundary. Values are YES for coordinates within, or NO for coordinates outside the boundary.
GEOFEATURE	This field returns a geocode feature type if that was not provided in other GNAF fields. GEOFEATURE corresponds to Geocode Types (GEOCODE_TYPE_AUT Codes) that are described in the PSMA Data Product Description Version 2.7 (Aug. 2012).
GNAF_ADDRESS_CLASS	The GNAF address classification.
GNAF_SA1	The GNAF Statistical Area Level 1 (SA1) identifier.

Field	Description
LEVEL_NUMBER	<p>The number of a floor or level in a multistory building. For example, <b>Floor 2</b>, 17 Jones Street</p> <p>The GNAF database includes level information for some Australian states. Level information may be associated with unit information, but not necessarily. If the GNAF database contains multiple records with the same level, the level information is returned only if the input address contains unique content (such as a unit number). If the GNAF dictionary has level information for an address, that information is returned with the matched candidate.</p> <p>The correct level information is returned (when available) even if the input address did not include level information, or if the input had the wrong level information. If the input address has level information but the GNAF database does not include level information for the matching address, then the input level information is discarded since it is not validated in the GNAF data.</p>
LEVEL_TYPE	<p>The label used for a floor of a multistory building. For example, "Level" or "Floor". In this example, the level type is "Level":</p> <p>Suite 3 <b>Level 7</b>, 17 Jones Street</p> <p>In this example, Suite 3 is a unit.</p>
LOT_NUMBER	<p>Lot numbers are returned for GNAF candidates because some rural addresses do not have adequate physical or house number information.</p>
MESH_BLOCK_ID	<p>A Meshblock is the smallest geographic unit for which statistical data is collected by the Australian Bureau of Statistics (ABS). Meshblocks usually contain a minimum of 20 to 50 households. This is about one fifth the size of a Collection District (CD). You can use the Meshblock ID to do additional attributions against your own data.</p>

## Austria (AUT)

This section defines the supported geocoding datasets, operations, and input and output field information for Austria.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Austria.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom German	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Austria:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Florian 3  <b>9020 Enthalpy in Kirsten</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town. An alias may also be used. For example, Wien and Vienna are aliases and both names can be used on input. When you geocode, the input name is returned with the candidate. For example: if you use Wien on input, Wien is returned in the output. If you use Vienna on input, Vienna is returned in the output.
areaName4	String	Not used.
postalCode	String	Austria uses a four-digit postal code system. The first two numbers indicate the sector and the last two numbers designate the delivery point within the sector.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Austria, the country code is AUT. Required for forward geocoding.

### Address Guidelines for Austria

Follow these guidelines to provide input that Spectrum™ Technology Platform can successfully geocode. For additional information on Austrian addresses, see the Austria Post website: [www.post.at](http://www.post.at).

- **Required fields**—Addresses must contain either a city or a postal code.

- **Thoroughfare types**—Austrian thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.
- **Common words and abbreviations**—Common words, directionals, house number indicators, and abbreviations used in addresses are recognized.
- **State abbreviations**—State abbreviations are supported. The following table lists the Austrian states and their abbreviations.

Burgenland	Bgl
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Kärnten	Ktn
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Niederösterreich	NÖ
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Oberösterreich	OÖ
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Salzburg	Sbg
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Steiermark	Stm
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Tirol	Tirol
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Vorarlberg	Vbg
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Wien	Wien
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### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Austria.

### Output Fields

The following table lists the address fields returned for a candidate located in Austria.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	The district.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 4-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Austria, the country code is AUT.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Austria does not have any custom output fields.



## Bahamas (BHS)

This section defines the supported geocoding datasets, operations, and input and output field information for the Bahamas.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Bahamas.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ English	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Bahamas:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Mickey St  <b>Nassau, New Providence</b></p>
areaName1	String	Specifies the district. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Using a town alias is also supported.
areaName4	String	Not used.
postalCode	String	Not used - the Bahamas does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Bahamas, the country code is BHS. Required for forward geocoding.

### Address Guidelines for the Bahamas

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Bahamian addresses, see the Postal Service in the Bahamas website: <http://bahamas-guide.info/travel.basics/postal.services/>

- **Required fields**—Addresses must contain a city. Postal codes are not used in Bahamas.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][area_name_3][area_name_1]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any unit type, unit value or pre- or post-directional information (e.g. East, West, etc.).
- `[area_name_3]` is the city.
- `[area_name_1]` is the district.

For best results, put a comma between street information and the lastline (e.g. city and postal) information.

### Custom Options

There are no options specific to the Bahamas.

### Output Fields

The following table lists the address fields returned for a candidate located in the Bahamas.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	District.
<code>areaName2</code>	Not used.
<code>areaName3</code>	City or town.
<code>areaName4</code>	Not used.

Field Name	Description
postCode1	Not used.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For the Bahamas, the country code is BHS.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Bahamas does not have any custom output fields.

## Bahrain (BHR)

This section defines the supported geocoding datasets, operations, and input and output field information for Bahrain.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Bahrain.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic and English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Bahrain:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the lastLine field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Manama Centre Building 21 Government Avenue <b>Manama 306</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 3- or 4-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Bahrain, the country code is BHR. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area][postal\_code]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Bahrain.

### Output Fields

The following table lists the address fields returned for a candidate located in Bahrain.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	3- or 4-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Bahrain, the country code is BHR.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Bahrain does not have any custom output fields.



## Barbados (BRB)

This section defines the supported geocoding datasets, operations, and input and output field information for Barbados.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Barbados.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Barbados:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Fairchild St  <b>Bridgetown BB11000</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the postal code which consists of the ISO 3166-1 alpha-2 prefix (BB) plus 5-digit numeric. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Barbados, the country code is BRB. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area][postal\_code]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Barbados.

### Output Fields

The following table lists the address fields returned for a candidate located in Barbados.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Barbados, the country code is BRB.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Barbados does not have any custom output fields.

## Belgium (BEL)

This section defines the supported geocoding datasets, operations, and input and output field information for Belgium and Luxembourg. Content that references Belgium also pertains to Luxembourg.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Belgium.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French, Dutch and German	Yes	Yes	Yes	Yes	Yes	Yes	No

### Supported Operations

The following operations are supported for Belgium:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Masterstroke 26  <b>1070 Wanderlust</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the province. Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Not used.
postalCode	String	Belgium uses a four-digit postal code. The first two digits designate the sorting area (with the first digit usually representing the region). The next two digits represent the post office and delivery office.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Belgium, the country code is BEL. For Luxembourg, the country code is LUX. Required for forward geocoding.

### Address Guidelines for Belgium

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Belgium addresses, see the Belgium Post website: [www.bpost.be](http://www.bpost.be).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Supported languages**—Dutch, French, and German language aliases and address formats are supported.

- **Thoroughfare types**—Belgian thoroughfare types and their common abbreviations are recognized and fully supported on input and output. Dutch, French, and German thoroughfare types are also supported.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.
- **Common words and abbreviations**—Common words, directionals, house number indicators, and abbreviations used in addresses are supported.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Belgium.

### Output Fields

The following table lists the address fields returned for a candidate located in Belgium.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.

Field Name	Description
areaName1	Not used.
areaName2	The province.
areaName3	The city or town.
areaName4	Not used.
postCode1	The 4-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Belgium, the country code is BEL.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Belgium does not have any custom output fields.



## Belize (BLZ)

This section defines the supported geocoding datasets, operations, and input and output field information for Belize.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Belize.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Belize:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>4638 Coney Drive  <b>Belize City</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Belize does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Belize, the country code is BLZ. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Belize.

### Output Fields

The following table lists the address fields returned for a candidate located in Belize.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Belize, the country code is BLZ.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Belize does not have any custom output fields.

## Benin (BEN)

This section defines the supported geocoding datasets, operations, and input and output field information for Benin.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Benin.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Benin:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>93 Rue du Gouverneur Fourn <b>Cotonou</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town.
areaName4	String	Not used.
postalCode	String	Not used - Benin does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Benin, the country code is BEN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Benin.

### Output Fields

The following table lists the address fields returned for a candidate located in Benin.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Benin, the country code is BEN.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Benin does not have any custom output fields.



## Bermuda (BMU)

This section defines the supported geocoding datasets, operations, and input and output field information for Bermuda.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Bermuda.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Bermuda:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>56 Church Street  <b>Hamilton HM12</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the postal code. The postal code for a physical address consists of 4 characters: 2 alpha characters, a space, followed by 2 numeric characters. The postal code for a P.O. Box consists of 4 characters: 2 alpha characters, a space, followed by 2 alpha characters. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Bermuda, the country code is BMU. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area][postal\_code]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Bermuda.

### Output Fields

The following table lists the address fields returned for a candidate located in Bermuda.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 4-character postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Bermuda, the country code is BMU.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Bermuda does not have any custom output fields.

## Bolivia (BOL)

This section defines the supported geocoding datasets, operations, and input and output field information for Bolivia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Bolivia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Bolivia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Calle Azurduy 158 <b>Sucre</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Boliva does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Bolivia, the country code is BOL. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Bolivia.

### Output Fields

The following table lists the address fields returned for a candidate located in Bolivia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Bolivia, the country code is BOL.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Bolivia does not have any custom output fields.

## Bosnia and Herzegovina (BIH)

This section defines the supported geocoding datasets, operations, and input and output field information for Bosnia and Herzegovina.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Bosnia and Herzegovina.

**Note:** Custom User Dictionaries are not supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Bosnian, Croatian, Cyrillic and Latin Serbian	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Bosnia and Herzegovina:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.



Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	The last line of the address. Optional. For example: Vrbanja 1 <b>Sarajevo 71000</b>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Bosnia and Herzegovina, the country code is BIH. Required for forward geocoding.

### Address Guidelines for Bosnia and Herzegovina

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Bosnia and Herzegovina addresses, see the Bosnia and Herzegovina Post website: <http://www.posta.ba/pocetna/2/0/0.html>

- **Required fields**—Addresses must contain either a city or postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[street_info][address_number][postal_code][area]
```

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Bosnia and Herzegovina.

### Output Fields

The following table lists the address fields returned for a candidate located in Bosnia and Herzegovina.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.

Field Name	Description
areaName3	The city or town.
areaName4	Not used.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Bosnia and Herzegovina, the country code is BIH.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Bosnia and Herzegovina does not have any custom output fields.

## Botswana (BWA)

This section defines the supported geocoding datasets, operations, and input and output field information for Botswana.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Botswana.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Botswana:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>4775 Notwane Road  <b>Gaborone</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Botswana does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Botswana, the country code is BWA. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Botswana.

### Output Fields

The following table lists the address fields returned for a candidate located in Botswana.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Botswana, the country code is BWA.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Botswana does not have any custom output fields.

## Brazil (BRA)

This section defines the supported geocoding datasets, operations, and input and output field information for Brazil.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Brazil.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Portuguese, Spanish	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Brazil:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Rua Santo Antonio, 355  <b>36800-200 Campinas, Sao Paulo</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality. Optional.
postalCode	String	For Brazil, use the complete eight-digit postcode for the most accurate results; however, you can use a five-digit postcode.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Brazil, the country code is BRA. Required for forward geocoding.

### Address Guidelines for Brazil

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Brazilian addresses, see the Correios Brazil website: <http://www.correios.com.br/default.cfm>.

- **Required fields**—Addresses must contain either a city or a postal code.
- **Thoroughfare types**—Thoroughfare types (pre and post thoroughfare types) and their common abbreviations are recognized and fully supported on input and output. Following is a partial list of recognized thoroughfare types.

ALAMEDA=AL,ALAMEDA,ALUA LALA  
 ACESSO=AC,ACESSO  
 ARCO=ARCO  
 AUTO-ESTRADA=AUTO-EST,AUTO-ESTRADA  
 AVENIDA=AV,AVDA,AVE,AVENIDA  
 AZINHAGA=AZINHAGA  
 BAIRRO=BAI,BAIRRO  
 BALUARTE=BALUARTE  
 BECO=BECO  
 Many others are also recognized.

- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses. For example, the following are all recognized in an input address:

um, primeira, primeiras, primeiro  
 dois, segunda, segundos  
 Many other numeric designations are also recognized.

- **Directionals in addresses**—The following directionals are recognized in input addresses: norte, do norte, setentrional, sul, do sul, meridional, leste, este, do leste, do este, oriental, oeste, do oeste, ocidental
- **Common words and abbreviations**—Common words, directionals, house number indicators, and abbreviations used in addresses are supported. This is a partial list of common words and abbreviations that are recognized. Many other common words are also handled.

Common abbreviations	aeroporto=aerop internacio=intern,int internacional=int international=int conselheiro=cnso desembargador=des regente=reg limitado=ltda,ltdo,ltd (and many other abbreviations)
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### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Brazil.

### Output Fields

The following table lists the address fields returned for a candidate located in Brazil.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	The 3-digit postal code extension.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Brazil, the country code is BRA.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Brazil does not have any custom output fields.

## Brunei Darussalam (BRN)

This section defines the supported geocoding datasets, operations, and input and output field information for Brunei Darussalam.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Brunei Darussalam.

**Note:** Custom User Dictionaries are supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Malaysian	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Brunei Darussalam:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Not used.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Simpang 637-84  <b>Bandar Seri Begawan BB1114</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 6 alphanumeric (2 letters, 4 digits) postal code. The first letter represents the district; the second is the mukim (group of villages). The next 2 digits indicate the village, and the last 2 digits, the delivery point. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Brunei Darussalam, the country code is BRN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][area][postal\_code]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Brunei Darussalam.

### Output Fields

The following table lists the address fields returned for a candidate located in Brunei Darussalam.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	Not used.
<code>areaName1</code>	Not used.
<code>areaName2</code>	The district.
<code>areaName3</code>	The town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	The 6-alphanumeric postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Brunei Darussalam, the country code is BRN.
<code>addressNumber</code>	Not used.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Brunei Darussalam does not have any custom output fields.



## Burkina Faso (BFA)

This section defines the supported geocoding datasets, operations, and input and output field information for Burkina Faso.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Burkina Faso.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Burkina Faso:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>169, Avenue de la Paix  <b>Ouagadougou</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Burkina Faso does not have a postal code system. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Burkina Faso, the country code is BFA. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Burkina Faso.

### Output Fields

The following table lists the address fields returned for a candidate located in Burkina Faso.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Burkina Faso, the country code is BFA.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Burkina Faso does not have any custom output fields.

## Burundi (BDI)

This section defines the supported geocoding datasets, operations, and input and output field information for Burundi.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Burundi.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Burundi:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>3813 Uprona Boulevard  <b>Bujumbura</b></p>
areaName1	String	Not used. Optional.
areaName2	String	Not used. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used. Optional.
postalCode	String	Not used - Burundi does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Burundi, the country code is BDI. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Burundi.

### Output Fields

The following table lists the address fields returned for a candidate located in Burundi.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Burundi, the country code is BDI.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Burundi does not have any custom output fields.



## Cameroon (CMR)

This section defines the supported geocoding datasets, operations, and input and output field information for Cameroon.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Cameroon.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French, English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Cameroon:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the lastLine field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>12 Avenue du Docteur Jamot <b>Douala</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	The city or town.
areaName4	String	Not used.
postalCode	String	Not used - Cameroon does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Cameroon, the country code is CMR. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Cameroon.

### Output Fields

The following table lists the address fields returned for a candidate located in Cameroon.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Cameroon, the country code is CMR.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Cameroon does not have any custom output fields.

## Canada (CAN)

This section defines the supported geocoding datasets, operations, and input and output field information for Canada.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Canada.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom MultiNet Canada Data	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAVTEQ Points English, French	Yes	Yes	Yes	No	No	Yes	No

**Note:** The following geocoding datasets are also supported:

- Statistics Canada PCCF (Postal Codes) and FSA Boundaries
- Canada Post Address Range Data

### Supported Operations

The following operations are supported for Canada:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

Canadian addresses may contain some or all of the following address elements.

**Note:** Canada requires either post code and/or province and city information to geocode. This information can be provided in either single line format, as a street address with lastline, or using the `areaName<1-4>` fields.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	The last line of the address. Optional. For example: 5500 Explorer Drive <b>Mississauga, ON L4W5C7</b>
areaName1	String	Specifies the province. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town name. Optional.
areaName4	String	Specifies the Dissemination Area and Enumeration Area (DA and EA). Optional.
postalCode	String	Canada uses a six-character postal code. The first three characters are typically separated from the second three with a space. The first three characters are the FSA, the second three are the LDU. Street address geocoding only requires the FSA while postal code geocoding requires the full postal code (FSALDU). Choose whether you wish to have a space between the first three and last three characters of the postal code. Keeping this consistent speeds up the geocoding process. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Canada, the country code is CAN. Required for forward geocoding.

### Address Guidelines for Canada

Follow these suggestions to ensure that your street input data is in the best format possible for optimum matching and geocoding.

- **Post Office Box numbers**—P.O. Boxes and Rural Route addresses are not geocodable. This user input will be honored and an attempt is made to output Boxes and Rural Route information, but it will not be used for geocoding purposes.
- **Highway addresses**—Highway addresses (such as Hwy 401) are geocoded.
- **House numbers and apartment letters**—Remove spaces between house number and apartment letter. 123 A Main Street does not geocode correctly because the geocoder assumes that the name of the street is A. Two workaround options are available: either do not include the apartment letter or delete the space between the house number and apartment letter.
- **House numbers and unit information**—The house number pinpoints the location of the address. Unit input can be in one of two formats, as shown in the following examples:
  - 99-123 Main St, where 99 is the unit number. In this format, do not specify the unit type. The number 99 could be a suite, apartment, unit, floor or any valid unit type.
  - 123 Main St. Apt 99, where Apt is the unit type and 99 is the unit number. In this format, you must specify a valid unit type (such as Apt or Suite), otherwise the address will not be geocoded correctly.
- **Directional suffixes**—Use directional suffixes wherever possible. This is especially true in towns and cities, such as Calgary, which consist mainly of numbered streets. These streets can only be distinguished by their directional suffixes and street types. They also distinguish addresses on streets that change direction. For example: 123 Main St W and 123 Main St E have very different coordinates.
- **Street types**—These distinguish different streets of the same name. For example, Main Avenue and Main Street are two entirely different entities. Using types is not essential, but it adds precision to your data. For a list of valid street types see [www.canadapost.com](http://www.canadapost.com).
- **City name**—Do not abbreviate city names. If the city is unknown, you may leave it blank, although this may affect the accuracy of the geocode.
- **Province name**—You may use the full province name (for example, Ontario), but using the two-character abbreviation (ON) is recommended to reduce the likelihood of input errors. Without a postcode, you must enter both the province and city in order to geocode.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][area_name_3][area_name_1][post_code_1][post_code_2]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any unit type, unit value or pre- or post-directional information (e.g. East, West, etc.).

- `[area_name_3]` is the city or town.
- `[area_name_1]` is the province.
- `[postal_code_1]` is the FSA portion of the postal code.
- `[postal_code_2]` is the LDU portion of the postal code.

For best results, put a comma between street information and the lastline (e.g. city and postal) information.

### Custom Options

The following table lists the options that are unique to Canada. These custom options are optional input parameters, and unless otherwise noted, they are available for both Geocoding and Reverse Geocoding.

For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
KEY_MUST_HAVE_LDU	When true, does not return any matches that do not have the full FSA LDU postal code. Default = false.
USE_ADDRESS_POINT_INTERPOLATION	When set to true, enables address point interpolation. Default = false. Supported only in forward geocoding.  <b>Note:</b> The address point interpolation feature requires that you have a point-level geocoding dataset installed.
USE_CENTERLINE_OFFSET	When set to true, calculates the centerline offset for point addresses. Default = false. Supported only in forward geocoding.  <b>Note:</b> The centerline feature requires that you have a point-level geocoding dataset installed.  A centerline point match is indicated by a result code beginning with <b>SC</b> .
CENTERLINE_OFFSET	When <code>USE_CENTERLINE_OFFSET</code> is enabled, this specifies the distance to offset the point from centerline. Default = 0. Supported in forward geocoding only.
CENTERLINE_OFFSET_UNIT	When <code>USE_CENTERLINE_OFFSET</code> is enabled, this specifies the unit type for the centerline offset. Valid values = feet, meters. Default = meters. Supported only in forward geocoding.

### Output Fields

The following table lists the address fields returned for a candidate located in Canada.



**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The province.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The town or city.
<code>areaName4</code>	The Dissemination Area and Enumeration Area (DA and EA).

Field Name	Description
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dataType	
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Field Name	Description
	The returned numeric value represents a data vendor.
0	USPS
1	TIGER
2	TomTom
3	Sanborn Points
4	Tele Atlas
5	Geosys
6	NAVTEQ
7	TomTom Points
8	Centrus Points
9	Auxiliary
11	NAVTEQ Points
12	Master Location
15	Unknown Vendor
20	MapKing International
21	PT. Duta Astakona Girinda
22	Lepton
23	IPC
24	Map Information Solutions SDN BHD
25	Critchlow
26	MIS
27	Ordnance Survey
28	Spatial Platform
29	Code Point
30	Ordnance Survey AddressBase
31	PMSA Point
32	PMSA
33	MBI
34	PBS
35	NE

Field Name	Description
postCode1	The FSA portion of the postal code.
postCode2	The LDU portion of the postal code.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Canada, the country code is CAN.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	See the following section for the custom field definitions.

### *Custom Output Fields*

The following table lists the output fields that are unique for Canada. Unless otherwise noted, these fields can be returned for both forward and reverse geocoding.

Field Name	Description
CENSUS_CD	The Census Division (CD) in which the address is located.
CENSUS_CMA	The Census Metropolitan Area (CMA) in which the address is located.
CENSUS_CSD	The Census Subdivision (CSD) in which the address is located.
CENSUS_CT	The Census Tract (CT) in which the address is located.
CENSUS_DA	The Dissemination Area (DA) in which the address is located.
FORMATTED_STREET_RANGE	The formatted range data for the address. This field is only returned for postal centroid candidates.

## Chile (CHL)

This section defines the supported geocoding datasets, operations, and input and output field information for Chile.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Chile.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Spanish	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Chile:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Moneda 1152  <b>8340648 Santiago</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality or alias. Optional.
postalCode	String	The seven-digit postal code.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Chile, the country code is CHL. Required for forward geocoding.

### Address Guidelines for Chile

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Chilean postal system, see the Correos Chile website: [www.correos.cl](http://www.correos.cl).

- **Required fields**—Addresses must contain a town or postcode.
- **Abbreviations in addresses**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.
- **Numbers, Numeric Equivalents, and Ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Chile.

### Output Fields

The following table lists the address fields returned for a candidate located in Chile.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	The district.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The locality.

Field Name	Description
postCode1	The seven-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Chile, the country code is CHL.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Chile does not have any custom output fields.



## China (CHN)

This section defines the supported geocoding datasets, operations, and input and output field information for China.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for China.

**Note:** The geocoder does not support Chinese characters.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
Map King International	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for China:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>50 Liang Maqiao Road  <b>Beijing 100016</b></p>
areaName1	String	Specifies the province. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality. Optional.
postalCode	String	<p>China has a six-digit postcode system. The first two digits indicate the province. The third digit and fourth digits indicate the district and city/town. The final two digits represent the postal delivery zone or prominent location. Larger provinces or cities might be assigned more than one block of codes. For example, Guangdong Province is assigned 51 and 52 as the first two digits.</p> <p><b>Note:</b> For China, postal centroid geocoding as well as the use of the Fallback to Postcode option require the complete six-digit postcode. However, when a postal code is provided as part of an address for street geocoding, only four-digit postal codes are returned.</p>
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For China, the country code is CHN. Required for forward geocoding.

### Address Guidelines for China

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Chinese postal system, see the China Post website: [www.chinapost.cn](http://www.chinapost.cn).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Abbreviations in addresses**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.
- **Numbers, Numeric Equivalents, and Ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][area_name_4][area_name_3][post_code]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any unit type, unit value or pre- or post-directional information (e.g. East, West, etc.).
- `[area_name_4]` is the locality.
- `[area_name_3]` is the city or town.
- `[postal_code]` is the postal code.

For best results, put a comma between street information and the lastline (e.g. city and postal) information.

### Custom Options

There are no options specific to China.

### Output Fields

The following table lists the address fields returned for a candidate located in China.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.

Field Name	Description
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	The province.
areaName2	Not used.
areaName3	The city or town.
areaName4	The locality.
postCode1	The six-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For China, the country code is CHN.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	China does not have any custom output fields.

## Colombia (COL)

This section defines the supported geocoding datasets, operations, and input and output field information for Colombia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Colombia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Spanish	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Colombia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Calle 10 # 5-32  <b>Bogotá, La Candelaria</b></p>
areaName1	String	Specifies the province. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the town/settlement.
areaName4	String	Specifies the locality. Optional.
postalCode	String	The seven-digit postal code.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Colombia, the country code is COL. Required for forward geocoding.

### Address Guidelines for Colombia

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Colombian postal system, see the website: <http://www.4-72.com.co/>.

- **Required fields**—Addresses must contain a town or postcode.
- **Abbreviations in addresses**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

- **Numbers, Numeric Equivalents, and Ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[street_info][address_number][postal_code][area]
```

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Colombia.

### Output Fields

The following table lists the address fields returned for a candidate located in Colombia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	The district.
<code>areaName3</code>	The city or town.

Field Name	Description
areaName4	Not used.
postCode1	The seven-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Colombia, the country code is COL.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Colombia does not have any custom output fields.



## Republic of the Congo (COG)

This section defines the supported geocoding datasets, operations, and input and output field information for the Republic of the Congo.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Republic of Congo.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for the Republic of the Congo:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>198 Avenue Coutassi <b>Brazzaville</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Congo does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of the Congo, the country code is COG. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required. For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to the Republic of the Congo.

### Output Fields

The following table lists the address fields returned for a candidate located in the Republic of the Congo.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Congo, the country code is COG.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Republic of the Congo does not have any custom output fields.

## Democratic Republic of the Congo (COD)

This section defines the supported geocoding datasets, operations, and input and output field information for the Democratic Republic of the Congo.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Democratic Republic of the Congo.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Democratic Republic of the Congo:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Boulevard Patrice Lumumba <b>Kinshasa</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - the Democratic Republic of the Congo does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Democratic Republic of the Congo, the country code is COD. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to the Democratic Republic of the Congo.

### Output Fields

The following table lists the address fields returned for a candidate located in the Democratic Republic of the Congo.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For the Democratic Republic of the Congo, the country code is COD.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Democratic Republic of the Congo does not have any custom output fields.



## Costa Rica (CRI)

This section defines the supported geocoding datasets, operations, and input and output field information for Costa Rica.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Costa Rica.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Costa Rica:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Calle 98 Vía 104  <b>Pavas, San Jose 11801</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5- or 9-digit postal code. For the first 5 digits, the first digit codes the province, the next two the canton, and the last two digits specify the district. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Costa Rica, the country code is CRI. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area][postal\_code]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- `[address_number]` is optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- `[postal_code]` is the postal code.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Costa Rica.

### Output Fields

The following table lists the address fields returned for a candidate located in Costa Rica.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	The 4-digit postal code extension.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Costa Rica, the country code is CRI.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Costa Rica does not have any custom output fields.

## Croatia (HRV)

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Croatia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Croatian	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Croatia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Å ukljeva Ulica 7 <b>10362 Zagreb</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the province. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the settlement. Optional.
postalCode	String	Specifies the 5-digit postal code. The first 2 digits indicate the district, the next digit, the zone, and the last 2 digits indicate the delivery office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Croatia, the country code is HRV. Required for forward geocoding.

### Address Guidelines for Croatia

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Croatian addresses, see the Postal Service in the Croatia website: <http://www.posta.hr/>

- **Required fields**—Addresses must contain either a city or postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[street_info][address_number][postal_code][area]
```

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Croatia.

### Output Fields

The following table lists the address fields returned for a candidate located in Croatia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	The province.

Field Name	Description
areaName3	The city or town.
areaName4	The settlement.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Croatia, the country code is HRV.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Croatia does not have any custom output fields.



## Cuba (CUB)

This section defines the supported geocoding datasets, operations, and input and output field information for Cuba.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Cuba.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Streets Spanish	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Cuba:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Reina #35  <b>Ciudad de La Habana, CP 11900</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Cuba, the country code is CUB. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area][postal\_code]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.

- `[postal_code]` is the postal code.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Cuba.

### Output Fields

The following table lists the address fields returned for a candidate located in Cuba.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Cuba, the country code is CUB.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Cuba does not have any custom output fields.

## Cyprus (CYP)

This section defines the supported geocoding datasets, operations, and input and output field information for Cyprus.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Cyprus.

**Note:** Custom User Dictionaries are not supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English and cyrillic Greek	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Cyprus:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	The last line of the address. Optional. For example: 13 Agiou Dimitriou <b>1022 Nicosia</b>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the four-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Cyprus, the country code is CYP. Required for forward geocoding.

### Address Guidelines for Cyprus

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Cyprus addresses, see the Cyprus Post website: [http://www.mcw.gov.cy/mcw/postal/dps.nsf/index\\_en/index\\_en?OpenDocument](http://www.mcw.gov.cy/mcw/postal/dps.nsf/index_en/index_en?OpenDocument)

- **Required fields**—Addresses must contain either a city or postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][postal_code][area]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Cyprus.

### Output Fields

The following table lists the address fields returned for a candidate located in Cyprus.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.

Field Name	Description
areaName3	The city or town.
areaName4	Not used.
postCode1	The four-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Cyprus, the country code is CYP.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Cyprus does not have any custom output fields.

## Czech Republic (CZE)

This section defines the supported geocoding datasets, operations, and input and output field information for the Czech Republic.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Czech Republic.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Czech	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for the Czech Republic:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>KrehiřkovA 92  <b>62700 BRNO</b></p>
areaName1	String	Specifies the region or alias. For example, the region HLAVNĀ MESTO PRAHA aliased as Prag. Optional.
areaName2	String	Specifies the district or alias. Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the five-digit postal code. Postal codes are typically separated by a space between the third and fourth numbers, but variations in spacing or no spacing in postal codes is supported.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Czech Republic, the country code is CZE. Required for forward geocoding.

### Address Guidelines for Czech Republic

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Czech addresses, see the Czech Republic Postal Service website: <http://www.ceskaposta.cz/en/>.

- **Required fields**—Addresses must contain either a city or a postal code.
- **Aliases for town, district, and region names**—Aliases for town, district, and region names are supported.

- **Thoroughfare types**—Thoroughfare types (pre and post thoroughfare types) and their common abbreviations are recognized and fully supported on input and output.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[street_info][address_number][areaName4][postal_code][areaName3]
```

Where:

- `[street_info]` consists of the street name, street type and any unit type, unit value or pre- or post-directional information (e.g. East, West, etc.).
- `[address_number]` is optional.
- `[areaName4]` is the locality.
- `[postal_code]` is the postal code.
- `[areaName3]` is the city or town.
- Either the `[areaName3]` field or `[postal_code]` is required.

For best results, put a comma between street information and the lastline (e.g. city and postal) information.

### Custom Options

There are no options specific to the Czech Republic.

### Output Fields

The following table lists the address fields returned for a candidate located in the Czech Republic.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The region.
<code>areaName2</code>	The district.

Field Name	Description
areaName3	The city or town.
areaName4	The locality.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For the Czech Republic, the country code is CZE.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Czech Republic does not have any custom output fields.

## Denmark (DNK)

This section defines the supported geocoding datasets, operations, and input and output field information for Denmark.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Denmark.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Danish	Yes	Yes	Yes	Yes	Yes	Yes	No

### Supported Operations

The following operations are supported for Denmark:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Lundsgade 15  <b>1682 Copenhagen</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the province. Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Not used.
postalCode	String	Denmark uses a four-digit postal code. The first digit cannot be zero.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Denmark, the country code is DNK. Required for forward geocoding.

### Address Guidelines for Denmark

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Denmark postal system, see the Post Danmark website: [www.postdanmark.dk](http://www.postdanmark.dk).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Supported languages**—Danish and English language aliases are supported for major town/municipality names. For example, Copenhagen (English) is equivalent to København (Danish).
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output. Following is a list of recognized thoroughfare types. This is not a complete list. Additional thoroughfare types may also be recognized.

ALLÉ=alle  
ANLAEG=anlaeg  
ANLEAG=anleag  
BAKKEN=bakken  
BANEN=banen  
BASTION=bastion  
BOUL=boulevard  
BOULEVARD=bulevardi  
BRO=bro  
BROEN=bro  
BUEN=buen  
BULEVARDI=bulevardi  
DAMMEN=dammen  
DOSSERING=dossering  
GAARD=garrd  
GADE=gade  
GANGEN=gangen  
GARD=gard  
GÅRD=gard  
GET=get  
HAVE=have  
HAVN=havn  
HOEJEN=hojen  
HOJEN=højen  
HØJEN=højen  
HOLMEN=holmen  
HUSET=huset  
KAER=kaer  
KEAR=kear  
KRAENTEN=kraeten  
KREANTEN=kreanten  
LAENGEN=laengen  
LEANGEN=leangen  
MARKEN=marken  
PARK=parken  
PARKEN=parken  
PASSAGEN=passagen  
PLADS=plads  
SIDEN=siden  
STIEN=stien  
STRAEDE=straede  
STREADE=streade  
SVINGET=svinget  
TOFTEN=toften  
TORV=torv

VAENGE=vaenge  
 VANGEN=vangen  
 VARDEN=varde  
 VEANGE=veange  
 VEJ=vej

- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.
- **Common words and abbreviations**—Common words, directionals, house number indicators, and abbreviations used in addresses are supported.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Denmark.

### Output Fields

The following table lists the address fields returned for a candidate located in Denmark.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.

Field Name	Description
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	Not used.
areaName2	The province.
areaName3	The city or town.
areaName4	Not used.
postCode1	The 4-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Denmark, the country code is DNK.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Denmark does not have any custom output fields.



## Dominican Republic (DOM)

This section defines the supported geocoding datasets, operations, and input and output field information for the Dominican Republic.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Dominican Republic.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for the Dominican Republic:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the lastLine field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Duarte 189  <b>10106 Santo Domingo</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. for the Dominican Republic, the country code is DOM. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to the Dominican Republic.

### Output Fields

The following table lists the address fields returned for a candidate located in the Dominican Republic.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For the Dominican Republic, the country code is DOM.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Dominican Republic does not have any custom output fields.

## Ecuador (ECU)

This section defines the supported geocoding datasets, operations, and input and output field information for Ecuador.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Ecuador.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Ecuador:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the lastLine field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Lallement Oe5-75 y Pedregal  <b>Quito EC170104</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 6-digit postal code. The first two specify the province, the next two the district, and the final two the zip code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Ecuador, the country code is ECU. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area][postal\_code]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Ecuador.

### Output Fields

The following table lists the address fields returned for a candidate located in Ecuador.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 6-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Ecuador, the country code is ECU.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Ecuador does not have any custom output fields.



## Egypt (EGY)

This section defines the supported geocoding datasets, operations, and input and output field information for Egypt.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Egypt.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic and English	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Egypt:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

**Note:** The Arabic character set is also supported.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>154 Anwar Al Sadat Street  <b>Port Said 42511</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first digit indicates the region, the second the governorate, the third the quality of service and the last two the delivery area or post office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Egypt, the country code is EGY. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area][postal_code]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Egypt.

### Output Fields

The following table lists the address fields returned for a candidate located in Egypt.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Egypt, the country code is EGY.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Egypt does not have any custom output fields.

## El Salvador (SLV)

This section defines the supported geocoding datasets, operations, and input and output field information for El Salvador.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for El Salvador.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for El Salvador:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Calle Alcaine #29  <b>CP 1120-Mejicanos, San Salvador</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For El Salvador, the country code is SLV. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to El Salvador.

### Output Fields

The following table lists the address fields returned for a candidate located in El Salvador.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For El Salvador, the country code is SLV.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	El Salvador does not have any custom output fields.



## Estonia (EST)

This section defines the supported geocoding datasets, operations, and input and output field information for Estonia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Estonia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Estonian	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Estonia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Lasnamäe 2 <b>11412 Tallinn</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 5-digit postal code. The first digit cannot be zero. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Estonia, the country code is EST. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.

- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Estonia.

### Output Fields

The following table lists the address fields returned for a candidate located in Estonia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	The district.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Estonia, the country code is EST.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Estonia does not have any custom output fields.

## Finland (FIN)

This section defines the supported geocoding datasets, operations, and input and output field information for Finland.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Finland.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Finnish	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Finland:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Storm Robertson 18 <b>00120 Helsinki</b></p>
areaName1	String	Specifies the region. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the five-digit postal code. The first two digits designate the post town or municipal area. The last three digits represent the destination post office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Finland, the country code is FIN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Finland.

### Output Fields

The following table lists the address fields returned for a candidate located in Finland.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The region.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Finland, the country code is FIN.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Finland does not have any custom output fields.



## France (FRA)

This section defines the supported geocoding datasets, operations, and input and output field information for France. This chapter also applies to the following countries: French Guyana, Guadeloupe, Martinique, Mayotte, Monaco and Reunion. Content that references France also pertains to these countries.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for France.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAVTEQ French	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NAVTEQ French Premium	Yes	Yes	Yes	No	No	Yes	Yes

### Supported Operations

The following operations are supported for France:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>9, rue Paul Lafayette  <b>93217 St Denis Cedex</b></p>
areaName1	String	Specifies the region. Optional.
areaName2	String	Specifies the department. Optional.
areaName3	String	Specifies the city or town. Some areas in France are generally recognized as cities even though they are not truly administrative cities. These areas represent Artificial City Areas, or Virtual Towns. For a listing of supported virtual towns, see "Address Guidelines for France".Optional.
areaName4	String	Not used.
postalCode	String	France uses a five-digit postal code. The first two digits usually represent the department. The digits 00 represent military addresses and there are also special digits for overseas territories. The last three digits represent the local delivery area. In the larger cities (Paris, Lyon Marseille), the last two digits represent the arrondissement. For example, in the postcode: 33380, 33 is the department and 380 is the delivery area. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For France, the country code is FRA. For other countries that utilize the French geocoder, see "Overseas Territories Addresses" in the following section. Required for forward geocoding.

### Address Guidelines for France

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the French postal system, see the La Poste website: [www.laposte.com](http://www.laposte.com).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Virtual town names**—Some areas are generally recognized as cities even though they are not truly administrative cities. These areas represent Artificial City Areas, or Virtual Towns. Since these virtual town names are commonly used by the public, they are supported and treated as aliases for any of the encompassed towns. Returned candidates have the correct real town in place of the input virtual town.

**Note:** Virtual town names are supported in the TomTom geocoding dataset only. The NAVTEQ geocoding datasets (streets or points) do not support virtual town names.

Virtual Town Name	Encompassed Real Towns
Défense (La)	Part of: Nanterre, Puteaux, Courbevoie
Sophia Antipolis	Part of: Valbonne, Mougins, Vallauris, Antibes, Biot
Cergy-Pontoise	Menucourt, Courdimanche, Puiseux-Pontoise, Osny, Pontoise, Cergy, Vauréal, Neuville-sur-Oise, Saint-Ouen!Aumône, Jouy-le-Moutier, Eragny
Marne-la-Vallée	Bry-sur-Marne, Villiers-sur-Marne, Noisy-le-Grand, Champs-sur-Marne, Emerainville, Noisiel, Lognes, Croissy-Beaubourg, Torcy, Collégien, Ferrières, Bussy-Saint-Georges, Bussy-Saint-Martin, Saint-Thibault-des-Vignes, Gouvernes, Conches, Guermantes, Jossigny, Lagny-sur-Marne, Montévrain, Chanteloup-en-Brie, Serris, Chessy, Coupvray, Magny-le-Hongre, Bailly- Romainvilliers
Saint-Quentin-en-Yvelines	Elancourt, Verrière (La), Trappes, Montigny-le- Bretonneux, Guyancourt, Voisins-le-Bretonneux, Magnyle- Hameau
Sénart	Tigery, Combs-la-Ville, Lieusaint, Moissy-Cramayel, Saint-Pierre-du-Perray, Savigny-le-Temple, Réau, Nandy, Cesson, Vert-Saint-Denis

Virtual Town Name	Encompassed Real Towns
Evry	Evry, Bondoufle, Courcouronnes, Lisses
Etang de Berre	Fos-sur-Mer, Miramas, Vitrolles, Istres
Isle-d'Abeau	Four, Isle d'Abeau (L'), Saint-Quentin-Fallavier, Vaulx-le-Milieu, Villefontaine

- **Common words and abbreviations**—The geocoder handles common abbreviations that are used in French addresses. It supports all the official French street type abbreviations plus a number of unofficial street types to help improve geocoding efficiency. A partial list is:

Street Type or Name	Abbreviation
appartement	APP, APT, APPART
Saint	ST
Sainte	STE
rue	r
Charles de Gaulle	CDG
Regiment D'Infanterie de Marine	RIMA
Division Blindée	DB

- **Directionals in addresses**—Abbreviated street directionals are also handled on input and the returned candidate displays the complete directional.

N	N.	Nord
S	S.	Sud
E	E.	Est
O	O.	Ouest
NE	N.E.	Nord-Est
SE	S.E.	Sud-Est
NO	N.O.	Nord-Ouest
SO	S.O.	Sud-Ouest

- **Ordinals and numbered street names**—Input addresses can include ordinals such as 1er, 2e, 2nd, 2nde, 3e. All subsequent ordinal street names are designated with "e" or "ème". You can also specify numbers in street names or express the numbers as words. For example, the following street names are equivalent and can both be geocoded as part of an input address:

```
Rue du 4 septembre
Rue du quatre septembre
```

- **House numbers with letters**—House numbers can include letters, such as 85B Ave des provinces.
- **Postal box (BP) addresses**—The geocoder can handle Postal Box (Boite Postale) addresses. For the following input address, a match candidate is returned with a result code of S5HPNTSC:

```
mainAddress:BP 112 2 Avenue CDG
postalCode:78150
areaName3:Le Chesnay
```

Note that in this example, the street name CDG is returned as Charles de Gaulle and the postcode is corrected. The BP itself is not returned.

- **CEDEX addresses**—The geocoder does not use CEDEX for geocoding but CEDEX will not interfere with geocoding. CEDEX can be entered in mainAddress, areaName3, or PostalCode

fields. The CEDEX itself is not returned but the complete postcode is returned. For the following input address, a match candidate is returned with a result code of S5HPNTS--A.

```
mainAddress:17 Rue Louise Michel
postalCode:92301 CEDEX
areaName3:Levallois-Perret
```

The postcode is returned but it is not considered to have matched to the postal code (there is no Z in the ninth position of the return code). The CEDEX itself is not returned.

- **Military addresses**—Military addresses (including typical military address abbreviations) are handled. The first two digits usually represent the department. The digits 00 represent military addresses.
- **Monaco addresses**—The geocoder handles Monaco addresses. You can specify Monaco (or the MCO or MC country codes) in the `areaName1` input field. If you input a Monaco address as France, the geocoder attempts to identify this and returns the Monaco candidate if possible. All Monaco postcodes begin with the number 98.
- **Overseas Territories addresses**—The geocoder covers several French overseas territories. The geocoder recognizes the unique French territorial ISO codes, and you can use these codes with input addresses. The territories use the French 5 digit postal code system, but each territorial postal code starts with 3 unique digits. The accompanying table summarizes the ISO codes, data vintages, and unique postal codes of the covered French territories.

Territory Name	ISO 3166-1 Alpha-2	ISO 3166-1 Alpha-3	First 3 Digits of Postal Code
Guadeloupe	GLP	GP	971
Martinique	MTQ	MQ	972
French Guyana	GUF	GF	973
Réunion	REU	RE	974
Mayotte	MYT	MY	976

You can also use the country code for France (FRA or FR). In that case, you can get candidates from France, Monaco, and the territories if that city/town name occurs in either France or in one or more of the territories. However if you explicitly specify MCO or a territorial country code, you will get candidates from the specified country only, and not from France.

- **Placename Support for User Dictionaries**—If your user dictionary includes placenames, you can geocode these placenames and that information is returned with candidates.
- **Additional Fields for Address Range and User Dictionaries**—Additional fields can be created and returned for both Address Range and Point user dictionaries. These additional fields can

contain any special information associated with an address. You cannot geocode using additional fields, but additional field content is returned with each candidate

- **Address point data**— The FRA NAVTEQ Points database includes address point data. Address point candidates return an S8 result code.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][postal_code][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

The following table lists the options that are unique for France. These custom fields are applicable to the Geocoding operation and are optional input parameters. For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
USE_ADDRESS_POINT_INTERPOLATION	When set to true, enables address point interpolation. Default = false. Supported only in forward geocoding.
	<b>Note:</b> The address point interpolation feature requires that you have a point-level geocoding dataset installed.

### Output Fields

The following table lists the address fields returned for a candidate located in France.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
mainAddressLine	The street address which may include company name, house number, building names and street names.
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	The region.
areaName2	The department.
areaName3	The city or town.
areaName4	Not used.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For France, the country code is FRA.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	France does not have any custom output fields.



## Gabon (GAB)

This section defines the supported geocoding datasets, operations, and input and output field information for Gabon.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Gabon.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Gabon:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Avenue Gabriel Lendoye <b>Libreville</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Gabon does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Gabon, the country code is GAB. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Gabon.

### Output Fields

The following table lists the address fields returned for a candidate located in Gabon.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Gabon, the country code is GAB.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Gabon does not have any custom output fields.

## Germany (DEU)

This section defines the supported geocoding datasets, operations, and input and output field information for Germany.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Germany.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom German	Yes	Yes	Yes	Yes	Yes	Yes	Yes

### Supported Operations

The following operations are supported for Germany:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements. For additional information on German addresses, see the German postal website: [www.deutschepost.de](http://www.deutschepost.de).

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Mulder 2  <b>77694 Kehl</b></p>
areaName1	String	Specifies the Bundesland. Optional.
areaName2	String	Specifies the Kreis. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first digit indicates the area of Germany in which the address is situated. The second digit indicates a smaller region within this area. The third digit indicates a city, a part of a city, or a municipality. The last 2 digits indicate the delivery type or group of delivery points. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Germany, the country code is DEU. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

The following table lists the options that are unique for Germany. These custom fields are optional input parameters, and unless otherwise noted, they are available for both forward geocoding and reverse geocoding. For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
USE_ADDRESS_POINT_INTERPOLATION	When set to true, enables address point interpolation. Default = false. Supported only in forward geocoding.  <b>Note:</b> The address point interpolation feature requires that you have a point-level geocoding dataset installed.

### Output Fields

The following table lists the address fields returned for a candidate located in Germany.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
mainAddressLine	The street address which may include company name, house number, building names and street names.
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	The Bundesland.

Field Name	Description
areaName2	The Kreis.
areaName3	The city or town.
areaName4	Not used.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Germany, the country code is DEU.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	There are no custom output fields for Germany.



## Ghana (GHA)

This section defines the supported geocoding datasets, operations, and input and output field information for Ghana.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Ghana.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Ghana:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Mamleshie Road <b>Accra</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Ghana does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Ghana, the country code is GHA. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Ghana.

### Output Fields

The following table lists the address fields returned for a candidate located in Ghana.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Ghana, the country code is GHA.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Ghana does not have any custom output fields.

## Great Britain (GBR)

This section defines the supported geocoding datasets, operations, and input and output field information for Great Britain.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Great Britain.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	Yes	Yes	Yes	No	No

The following geocoding dataset(s) are also supported:

- AddressBase Premium
- CodePoint

### Supported Operations

The following operations are supported for Great Britain:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

Great Britain addresses may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>186 City Road  <b>London, EC1V 2NT</b></p>
areaName1	String	Specifies the region.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	In Great Britain, each address is associated with an alphanumeric code up to seven characters in length. Each postcode includes an average of 15 addresses. In some cases, where a customer receives a substantial amount of mail, for example, a business, the postcode pertains to just that one address (a large-user postcode). Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Great Britain, the country code is GBR. Required for forward geocoding.

### Address Guidelines for Great Britain

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on British addresses, see the Royal Mail website: <http://www.royalmail.com/>.

- **Street addresses**—If you provide a street address, and either a town and state, or a postcode, you can perform an address geocode. The geocoder will match your full address record against

its comprehensive geocoding database. Minor misspellings in street addresses are corrected in the returned candidates.

- **Post Office Box numbers**—You can enter PO Box input in the `mainAddress` field in the format: `[PO Box or Post Box ] [number]`. The number typically ranges from one digit to a maximum of six digits. The acceptable formats for PO Box include the following. These formats are not case sensitive.
  - PO BOX
  - P.O. BOX
  - P.O.BOX
  - PO.BOX
  - POST BOX
  - POST BOX Number
  - POST BOX No
  - POST BOX #
  - POST OFFICE BOX
  - POBOX
  - POB
  - POSTBOX
  - P.BOX
  - PBOX
  - P BOX
  - BOX
- **Postal code**—If you enter the postcode in the **LastLine** input field, you may use either the full postcode or just the post district as long as other street information or post information is present. If you enter the postcode in the **PostalCode** input field, you must use the complete postcode. Providing both the town and postcode can produce better results. The geocoder corrects postcode information and adds postcodes if your input does not already include them.
- **Northern Ireland addresses**—The AddressBase Premium and CodePoint databases include the same Northern Ireland data, accurate to the postcode centroid level. The AddressPoint and AddressBase Plus databases are supplemented with Northern Ireland postcode data from the Royal Mail source. This Northern Ireland data has postcode centroid (result code S3) precision only. That is the highest level of geocoding accuracy available for Northern Ireland addresses, even with the AddressPoint and AddressBase Plus point database sources.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][areaName3][postal_code]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any unit type, unit value or pre- or post-directional information (e.g. East, West, etc.).
- *[postal\_code]* is the postal code.
- *[areaName3]* is the city or town.
- Either *[areaName3]* or *[postal\_code]* is required.

For best results, put a comma between street information and the lastline (e.g. city and postal) information.

### Custom Options

The following table lists the unique options for Great Britain. Unless otherwise noted, these options are applicable to both forward and reverse geocoding. For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
USE_ADDRESS_POINT_INTERPOLATION	When set to true, enables address point interpolation. Default = false. Supported only in forward geocoding.
	<b>Note:</b> The address point interpolation feature requires that you have a point-level geocoding dataset installed.

### Output Fields

The following table lists the address fields returned for a candidate located in Great Britain.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
mainAddressLine	The street address which may include company name, house number, building names and street names.
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	The region.
areaName2	Not used.



Field Name	Description
areaName3	The city or town.
areaName4	The locality.
PBKey	A unique address identifier that is returned when an address match is made when geocoding or reverse geocoding against the Great Britain premium AddressBase dataset.
postCode1	The postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Great Britain, the country code is GBR.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	There are no custom output fields for Great Britain.

## Greece (GRC)

This section defines the supported geocoding datasets, operations, and input and output field information for Greece.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Greece.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Greek and Latin Greek	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Greece:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

**Note:** The Greek Cyrillic character set is also supported.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Doiranis 25  <b>653 02 Kavala</b></p>
areaName1	String	Specifies the region. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Greece, the country code is GRC. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Greece.

### Output Fields

The following table lists the address fields returned for a candidate located in Greece.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The region.
<code>areaName2</code>	The district.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Greece, the country code is GRC.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Greece does not have any custom output fields.

## Guatemala (GTM)

This section defines the supported geocoding datasets, operations, and input and output field information for Guatemala.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Guatemala.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Guatemala:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>6 Calle 5-28 Zona 9  <b>01009 Guatemala City</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first two digits indicate the department, the middle digit the delivery method and the final two digits the delivery office.. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Guatemala, the country code is GTM. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Guatemala.

### Output Fields

The following table lists the address fields returned for a candidate located in Guatemala.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Guatemala, the country code is GTM.
<code>addressNumber</code>	The address number.



Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Guatemala does not have any custom output fields.

## Guyana (GUY)

This section defines the supported geocoding datasets, operations, and input and output field information for Guyana.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Guyana.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Guyana:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the lastLine field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>72 Brickdam  <b>Georgetown</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Guyana does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Guyana, the country code is GUY. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Guyana.

### Output Fields

The following table lists the address fields returned for a candidate located in Guyana.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Guyana, the country code is GUY.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Guyana does not have any custom output fields.

## Honduras (HND)

This section defines the supported geocoding datasets, operations, and input and output field information for Honduras.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Honduras.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Honduras:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>12 Calle  <b>Tocoa 32301</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Honduras, the country code is HND. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area][postal\_code]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.

- `[postal_code]` is the postal code.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Honduras.

### Output Fields

The following table lists the address fields returned for a candidate located in Honduras.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Honduras, the country code is HND.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.



Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Honduras does not have any custom output fields.

## Hong Kong (HKG)

This section defines the supported geocoding datasets, operations, and input and output field information for Hong Kong.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Hong Kong.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Chinese and English	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Hong Kong:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>8 Hong Cheung Street  <b>Kwai Chung, New Territories</b></p>
areaName1	String	Specifies the province. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Not used - Hong Kong does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Hong Kong, the country code is HKG. Required for forward geocoding.

### Address Guidelines for Hong Kong

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Hong Kong addresses, see guidelines on the Hong Kong postal website

<http://www.hongkongpost.com/eng/publications/guide/content/6.1.pdf>.

- **Required fields**—Addresses must contain a city. HKG does not consider postal codes in addresses.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported in input addresses.
- **Common words and abbreviations**—Common words, directionals, house number indicators, and abbreviations used in addresses are supported.

- **Numbers and numeric equivalents**—Numbered streets are mapped to the named equivalents.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][areaName4][areaName3]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.).
- `[areaName4]` is the locality.
- `[areaName3]` is the city or town.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Hong Kong.

### Output Fields

The following table lists the address fields returned for a candidate located in Hong Kong.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The province.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.

Field Name	Description
areaName4	The locality.
postCode1	Not used.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Hong Kong, the country code is HKG.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Hong Kong does not have any custom output fields.

## Hungary (HUN)

This section defines the supported geocoding datasets, operations, and input and output field information for Hungary.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Hungary.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Hungarian	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Hungary:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Szegedi Gergely Utca 13  <b>4000 Debrecen</b></p>
areaName1	String	Specifies the county (megye). Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 4-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Hungary, the country code is HUN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Hungary.

### Output Fields

The following table lists the address fields returned for a candidate located in Hungary.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The county.
<code>areaName2</code>	The district.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	The 4-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Hungary, the country code is HUN.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.



Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Hungary does not have any custom output fields.

## Iceland (ISL)

This section defines the supported geocoding datasets, operations, and input and output field information for Iceland.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Iceland.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Icelandic	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Iceland:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Laugavegur 11 <b>101 Reykjavik</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the municipality, city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 3-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Iceland, the country code is ISL. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Iceland.

### Output Fields

The following table lists the address fields returned for a candidate located in Iceland.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The municipality, city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 3-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Iceland, the country code is ISL.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Iceland does not have any custom output fields.

## India (IND)

This section defines the supported geocoding datasets, operations, and input and output field information for India.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for India.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	Yes	Yes	Yes	Yes	No
Lepton English	Yes	Yes	Yes	Yes	Yes	Yes	No

### Supported Operations

The following operations are supported for India:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Gunjur Road  <b>Marattahalli 560017</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	India uses a 6-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For India, the country code is IND. Required for forward geocoding.

### Address Guidelines for India

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the India postal system, see the India Post website: [www.indiapost.gov.in](http://www.indiapost.gov.in).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations in addresses**—The geocoder recognizes common words that are used in street names, directionals, building identifiers, and Points of Interest and can

successfully geocode addresses that use these common words. Common abbreviations are also recognized within addresses.

- **Numbers, Numeric Equivalents, and Ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.
- **Point of Interest**—The geocoder can return S8 match candidates based on a placename combined with any valid locational input (town, locality, or postcode). Points of Interest (POI) can include restaurants, hotels, police stations, banks, ATMs, hospitals, schools, stores, and other businesses and organizations. POI candidates also return sublocality, if that information is available in the data.
- **Sublocality**—The geocoder can return SL sublocality candidates. This indicates a sublocality (block or sector) street level match. An SL result code also requires a match on other geographic input fields (city, district, or state).
- **Street level geocoding**— Street geocoded India addresses can return candidates based on Placename/Point of Interest (S8 result code), sublocality (SL result code), and street centroid (S4 result code).

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[unit_type][unit_value][address_number][pre_directional][street_name]
[post_directional][area_name_3][area_name_1][post_code]
```

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to India.

### Output Fields

The following table lists the address fields returned for a candidate located in India.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.



Field Name	Description
areaName1	The state.
areaName2	The district.
areaName3	The city or town.
areaName4	The locality.
postCode1	The 6-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For India, the country code is IND.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The following table lists the custom output fields for India.

### *Custom Output Fields*

The following table lists the output fields that are unique for India. Unless otherwise noted, these fields can be returned for both forward and reverse geocoding.

Name	Description
ISRURAL	When true, indicates the candidate's address is located in a rural region (village).
POI_CATEGORY	Point of interest category. This field describes the type of POI, such as a bank, ATM, or restaurant.
BLOCK	Block information.

Name	Description
SUB_LOCALITY	The municipal division below locality (areaName4) level.

## Indonesia (IDN)

This section defines the supported geocoding datasets, operations, and input and output field information for Indonesia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Indonesia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
PT. Duta Astakona Girinda Indonesian	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Indonesia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>20 Pecenongan <b>Bandung 40198</b></p>
areaName1	String	Specifies the province. Optional.
areaName2	String	Specifies the regency. Optional.
areaName3	String	Specifies the subdistrict. Optional.
areaName4	String	Specifies the village. Optional.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Indonesia, the country code is IDN. Required for forward geocoding.

### Address Guidelines for Indonesia

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Indonesian postal system, see the Pos Indonesia website: [www.posindonesia.co.id](http://www.posindonesia.co.id). You can also see and search for Indonesian postcodes at <http://kodepos.posindonesia.co.id/>.

- **Required fields**—Addresses must contain a street name and either a subdistrict, regency/city, or postcode.
- **Abbreviations in addresses**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

- **Numbers, Numeric Equivalents, and Ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][areaName3][areaName2][postal_code]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[areaName3]` is the village.
- `[areaName2]` is the regency.
- `[postal_code]` is the postal code.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Indonesia.

### Output Fields

The following table lists the address fields returned for a candidate located in Indonesia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The province.
<code>areaName2</code>	The regency.

Field Name	Description
areaName3	The subdistrict.
areaName4	The village.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Indonesia, the country code is IDN.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Indonesia does not have any custom output fields.

## Iraq (IRQ)

This section defines the supported geocoding datasets, operations, and input and output field information for Iraq.

### *Supported Geocoding Datasets*

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Iraq.

**Note:** Custom User Dictionaries are not supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic and English	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Iraq:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Adhamiya Street 21  <b>Baghdad 10010</b></p>
areaName1	String	Not used.

Parameter	Type	Description
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the five-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Iraq, the country code is IRQ. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][area][postal_code]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- `[postal_code]` is the postal code.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Iraq.

### Output Fields

The following table lists the address fields returned for a candidate located in Iraq.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.



Field Name	Description
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	Not used.
areaName2	Not used.
areaName3	The city or town.
areaName4	Not used.
postCode1	The five-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Iraq, the country code is IRQ.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Iraq does not have any custom output fields.

## Ireland (IRL)

This section defines the supported geocoding datasets, operations, and input and output field information for Ireland.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Ireland.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English, Irish	Yes	Yes	Yes	Yes	Yes	Yes	No

### Supported Operations

The following operations are supported for Ireland:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>7 Irvine Court  <b>Dublin 3</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the province. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies Dublin's postal district. Ireland does not have a postal code system; however, Dublin is divided into postal districts. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Ireland, the country code is IRL. Required for forward geocoding.

### Address Guidelines for Ireland

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Ireland postal system, see the An Post website: [www.anpost.ie](http://www.anpost.ie).

- **Required fields**—Addresses must contain a city. IRL has very limited postal code data.
- **Thoroughfare types**—Thoroughfare types (pre and post thoroughfare types) and their common abbreviations are recognized and fully supported on input and output. The following table provides a partial list of recognized thoroughfare types. Many others are also recognized.

## Pre-Thoroughfare Types

## Post Thoroughfare Types

Áirse

Street (Also: St.,ST,STR)

Ard

Terrace (Also: TCE)

Arda

Third

Ardán

Track (Also: TRK,TCK)

Ascaill

Vale

Barra

Valley

Bealach

View

Bogha

Village

Bóithrin

Walk (Also: WK)

Bóthar

Way (Also: WY)

Brí

Wood(s)

Bruach

Yard (Also: Yd.)

Búlbhard

- **Directionals**—The geocoder recognizes the following directionals: North, N, Nth, South, S, Sth, East, E, Est, West, W, Wst, NE, NW Sea SW Lower, LW, LR, Upper, UP, Upp, Uppe, upr, Thuaidh, Thoirm, Thiar, Theas

- **Common abbreviations**—The geocoder recognizes common abbreviations used in addresses and can geocode these addresses successfully. This is a partial list of abbreviations that are understood by the geocoder. Many other common abbreviations are also handled.

Word	Abbreviation
saint	st., st
great	gt., gt
north	n, nth
south	s, sth
east	e, est
west	w, wst
northeast	ne
northwest	nw
southeast	se
southwest	sw
lower	lw, lr
upper	up, upp, uppe
mount	mnt, mt

Word	Abbreviation
and	&
football	f
club	c
limited	ltd
park	pk
estate	est
gardens	gdns
building	bld
industrial	ind
industries	ind
number	num
center	cnt, centre
centre	cnt, center
country	co

Word	Abbreviation
market	mrkt
square	s

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area][postal_code]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.).
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- `[postal_code]` is the Dublin postal district for addresses in Dublin.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Ireland.

### Output Fields

The following table lists the address fields returned for a candidate located in Ireland.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.

Field Name	Description
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	Not used.
areaName2	The province.
areaName3	The city or town.
areaName4	Not used.
postCode1	Dublin's postal district code; otherwise, not used.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Ireland, the country code is IRL.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Ireland does not have any custom output fields.



## Italy (ITA)

This section defines the supported geocoding datasets, operations, and input and output field information for Italy.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Italy.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Italian, French, German	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Italy:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Belvedere Aldo Nardi 1  <b>20124 Milano</b></p>
areaName1	String	Specifies the region. Optional.
areaName2	String	Specifies the province. Optional.
areaName3	String	Specifies the comune. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Italy, the country code is ITA. Required for forward geocoding.

### Address Guidelines for Italy

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Italy postal system, see the Posteitaliane website: [www.poste.it](http://www.poste.it).

- **Required fields**—Addresses must contain either a city or a postal code.
- **German language addresses**—German address formats (common in the South Tyrol area of Italy) are handled and geocoded correctly. Typical German thoroughfare types and abbreviations are supported. For example, the street name Marienstraße could be abbreviated as Marienstr, and the same candidate is returned. Note that regardless of whether strasse or straÙe is entered as input, strasse is returned in the output candidate.

- **Aliases for regions, localities, and provinces**—Aliases can be used on input. For example, Tuscany is an alias for the region of Toscana. When you geocode, the returned candidate matches the user input. That is, if aliases were used then aliases are returned.
- **Regions and provinces**—For street geocoding, region names (which are entered in the StateProvince field) are not used for geocoding purposes, but are returned. Province abbreviations consisting of two letters are returned in the County field. Italy has 20 regions and 110 provinces.
- **PO boxes**—Post Office Box numbers are not used for address matching or geocoding purposes, but this does not interfere with matching or geocoding. The PO Box information is not returned. The following formats are recognized:

Casella Postale  
CP

- **Thoroughfare types**—Thoroughfare types (pre and post thoroughfare types) and their common abbreviations are recognized and fully supported on input and output. Both Italian and German thoroughfare formats are supported.
- **Common words, abbreviations, and directionals**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. For example, if you enter the street name `Via 42 Martiri`, the street name `QUARANTADUE MARTIRI` is returned. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Italy.

### Output Fields

The following table lists the address fields returned for a candidate located in Italy.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The region.
<code>areaName2</code>	The province.
<code>areaName3</code>	The comune.
<code>areaName4</code>	The locality.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Italy, the country code is ITA.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.
<code>unitValue</code>	The unit value/number, such as "3B".
<code>customFields</code>	The following table lists the custom fields for Italy.

### *Custom Output Fields*

The following table lists the output fields that are unique for Italy. Unless otherwise noted, these fields can be returned for both forward and reverse geocoding.

Name	Description
HISTORICALPOSTCODE	When the input postal code is a historical postal code, returns the previous postal code for this address.  <b>Note:</b> Supported only in forward geocoding.

## Jamaica (JAM)

This section defines the supported data sets, operations, and input and output field information for Jamaica.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Jamaica.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ English	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Jamaica:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>64 Knutsford Boulevard  <b>Kingston 5</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Jamaica currently does not have a national postal code system, except for Kingston and Lower St. Andrew, which are divided into postal districts numbered 1-20. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Jamaica, the country code is JAM. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area][postal_code]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Jamaica.

### Output Fields

The following table lists the address fields returned for a candidate located in Jamaica.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town
<code>areaName4</code>	Not used.
<code>postCode1</code>	For Kingston and Lower St. Andrew, the 1- or 2-digit postal district.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Jamaica, the country code is JAM.



Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Jamaica does not have any custom output fields.

## Japan (JPN)

This section defines the supported geocoding datasets, operations, and input and output field information for Japan.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Japan.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
IPC Kanji, Latin Kanji	Yes	Yes	Yes	No	No	Yes	Yes

### Supported Operations

The following operations are supported for Japan:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

Japanese addresses may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	This field is not used.
mainAddress	String	<p><b>Single Line input</b>—If no other field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. For details on single line input for Japanese addresses, see the section "<a href="#">Single Line Format</a>" below.</p> <p><b>Street Address</b>—The block and lot number.</p>

Parameter	Type	Description
lastLine	String	The last line of the address. Optional.
areaName1	String	Specifies the prefecture. Optional.
areaName2	String	Specifies the city (shi). Optional.
areaName3	String	Specifies the municipality subdivision (oaza). Optional.
areaName4	String	Specifies the city district (chome). Optional.
postalCode	String	Japan uses a seven-digit numeric postal code system in the format: 999-9999. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Japan, the country code is JPN. Required for forward geocoding.

### *Address Guidelines for Japan*

For information on Japanese addresses, see the Japan Post website: <http://www.post.japanpost.jp>.

A typical Japanese address looks like this:

北海道札幌市中央区大通西28丁目3番22号

The elements of this address are described in the following table.

Address Element	Field Name	Example
Prefecture	areaName1	北海道
City (Shi)	areaName2	札幌市中央区
Municipality Subdivision (Oaza)	areaName3	大通西
City District (Chome)	areaName4	28丁目

Address Element	Field Name	Example
Block/lot number	mainAddress	3番22  Block and lot numbers are the most specific address elements in Japan. Japanese addresses typically do not have street names.

For multiline addresses in Kanji, the general pattern is to enter the postal code on the first line. On the second line, enter the other address elements starting from largest (prefecture) to smallest. The name of the recipient, business, or organization is entered on the third line. For example:

100-8994  
東京都中央区八重洲一丁目5番3号  
東京中央郵便局

For multiline addresses using Western conventions, the order of address elements is reversed. For example:

Tokyo Central Post Office  
5-3, Yaesu 1-Chome  
Chuo-ku, Tokyo 100-8994

### Single Line Format

Japanese addresses are typically written in single line format, without any delimiters to separate address fields. The typical format is:

*[prefecture][city][municipality subdivision][city district][block][lot][other]*

Where:

- *prefecture* = ken
- *city* = shi
- *municipality subdivision* = oaza
- *city district* = chome
- *block* = numbered city block (ban)
- *lot* = sub blocks or building number (go)
- *other* = building names, flat numbers, or other identifiers. This information is ignored by the Japan geocoder.

**Note:** Block and lot numbers are the most specific address elements in Japan. Japanese addresses typically do not have street names.

Example Single Line Japanese Addresses	Description
東京都渋谷区広尾1-1-39	Chome, block, and lot separated by a hyphens.
東京都渋谷区広尾1丁目1-39	Block and lot separated by hyphen, chome indicated by chome identifier.
東京都渋谷区広尾1丁目1番39号	Chome, block, and lot separated by their identifiers.

### Custom Options

There are no unique options for Japan.

### Output Fields

The following table lists the address fields returned for a candidate located in Japan.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The prefecture.
<code>areaName2</code>	The city (shi).
<code>areaName3</code>	The municipality subdivision (oaza).
<code>areaName4</code>	The city district (chome).
<code>postCode1</code>	The first part of the postcode.
<code>postCode2</code>	The second part of the postcode.

Field Name	Description
country	The three-letter ISO 3166-1 Alpha-3 country code. For Japan, the country code is JPN.
addressNumber	The lot number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	See the following section for the custom field definitions.

### *Custom Output Fields*

The following table lists the output fields that are unique for Japan. Unless otherwise noted, these fields can be returned for both forward and reverse geocoding.

Field Name	Description
BANCHI	The block number.
CHOMOKU	The city block number.
CHOOAZA	The number for a group of city blocks.
GO	The house number.
JUSHO_CODE	A point ID that represents a unique address.

## Jordan (JOR)

This section defines the supported geocoding datasets, operations, and input and output field information for Jordan.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Jordan.

**Note:** Custom User Dictionaries are supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic, English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Jordan:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Not used.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	The last line of the address. Optional.
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Not used.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Jordan, the country code is JOR. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.



### Custom Options

There are no options specific to Jordan.

### Output Fields

The following table lists the address fields returned for a candidate located in Jordan.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	Not used.
<code>areaName1</code>	The state.
<code>areaName2</code>	The district.
<code>areaName3</code>	The town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Jordan, the country code is JOR.
<code>addressNumber</code>	Not used.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.
<code>unitValue</code>	The unit value/number, such as "3B".

Field Name	Description
customFields	Jordan does not have any custom output fields.

## Kenya (KEN)

This section defines the supported geocoding datasets, operations, and input and output field information for Kenya.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Kenya.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Kenya:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Taratibu Street <b>Mombasa</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	For deliveries to PO Boxes only, the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Kenya, the country code is KEN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][postal\_code][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Kenya.

### Output Fields

The following table lists the address fields returned for a candidate located in Kenya.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code for an address with a PO Box.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Kenya, the country code is KEN.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Kenya does not have any custom output fields.

## Kosovo (XKX)

This section defines the supported geocoding datasets, operations, and input and output field information for Kosovo.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Kosovo.

**Note:** Custom User Dictionaries are supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Serbian, Latin Serbian	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Kosovo:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Not used.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	The last line of the address. Optional.
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Not used.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Kosovo, the country code is XKX. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.



### Custom Options

There are no options specific to Kosovo.

### Output Fields

The following table lists the address fields returned for a candidate located in Kosovo.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	Not used.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Kosovo, the country code is XKX.
<code>addressNumber</code>	Not used.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.
<code>unitValue</code>	The unit value/number, such as "3B".

Field Name	Description
customFields	Kosovo does not have any custom output fields.

## Kuwait (KWT)

This section defines the supported geocoding datasets, operations, and input and output field information for Kuwait.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Kuwait.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic, English	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Kuwait:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the lastLine field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Salwa, Area 11, Street 9  <b>22057 Salmiya</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first two digits represent the sector and the last three digits represents the post office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Kuwait, the country code is KWT. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.

- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Kuwait.

### Output Fields

The following table lists the address fields returned for a candidate located in Kuwait.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Kuwait, the country code is KWT.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Kuwait does not have any custom output fields.

## Latvia (LVA)

This section defines the supported geocoding datasets, operations, and input and output field information for Latvia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Latvia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Latvian	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Latvia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Aglonas iela 21  <b>Valmiera, LV-4201</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the postal code. Latvian postal codes consist of 4 digits, usually preceded by LV-. The first two digits indicate the routing area and the last two digits the post office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Latvia, the country code is LVA. Required for forward geocoding.

### Address Guidelines for Latvia

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Latvia postal system, see the Latvian Pasts website: [www.pasts.lv](http://www.pasts.lv).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Abbreviations in addresses**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.



- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output. The following table shows a partial list of recognized thoroughfare types. Many others are recognized.

## Pre-Thoroughfare Types

AUGUSTA=AUGUSTA  
 KÂRĪA=KÂRĪA,K  
 KRĪĀJÂŌA=KRĪĀJÂŌA,KR

## Post-Thoroughfare Types

This is a partial list. Additional thoroughfare types are recognized.

ALEJA=ALEJA  
 BULVARIS=BULVARIS, BULVÂRIS, BOULEVARD, BLVD  
 CEĪĀ=CEĪĀ  
 DAMBIS=DAMBIS  
 GATVE=GATVE  
 IELA=IELA,STREET,STR  
 KRASTMALA=KRASTMALA  
 LAUKUMS=LAUKUMS  
 LINIJA=LINIJA  
 MAGISTRALE=MAGISTRALE  
 PIEKRASTE=PIEKRASTE  
 PROSPEKTS=PROSPEKTS  
 SETA=SETA  
 ŅOSEJA=ŅOSEJA  
 ĒĶRSIELA=ĒĶRSIELA  
 ĒĶRSLINIJA=ĒĶRSLINIJA  
 LAUKUMS=LAUKUMS

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area][postal\_code]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Latvia.

### Output Fields

The following table lists the address fields returned for a candidate located in Latvia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	The district.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	The 4-digit postal code (may be preceded by <i>LVA</i> -).
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Latvia, the country code is <i>LVA</i> .
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.
<code>unitValue</code>	The unit value/number, such as "3B".

Field Name	Description
customFields	Latvia does not have any custom output fields.

## Lebanonese Republic (LBN)

This section defines the supported geocoding datasets, operations, and input and output field information for the Lebanese Republic.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Lebanese Republic.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic, English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for the Lebanese Republic:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>119 Bina Street  <b>Raocheheh Beirut 2038 3054</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 4- or 8-digit postal code. The first four digits represent the region or postal zone, the last four digits indicate the building. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Lebanese Republic, the country code is LBN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area][postal_code]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to the Lebanese Republic.

### Output Fields

The following table lists the address fields returned for a candidate located in the Lebanese Republic.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 4-digit postal code indicating the region or postal zone.
<code>postCode2</code>	The 4-digit postal code indicating the building.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Lebanon, the country code is LBN.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Lebanese Republic does not have any custom output fields.

## Lesotho (LSO)

This section defines the supported geocoding datasets, operations, and input and output field information for Lesotho.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Lesotho.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Lesotho:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Mpilo Road <b>Maseru 100</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 3-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Lesotho, the country code is LSO. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area][postal\_code]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.

- `[postal_code]` is the postal code.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Lesotho.

### Output Fields

The following table lists the address fields returned for a candidate located in Lesotho.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 3-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Lesotho, the country code is LSO.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Lesotho does not have any custom output fields.

## Lithuania (LTU)

This section defines the supported geocoding datasets, operations, and input and output field information for Lithuania.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Lithuania.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Lithuanian	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Lithuania:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Vivulskio g. 4 <b>03220 Vilnius</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the county. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 5-digit postal code. The first three digits indicate the routing district, the last two are the delivery office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Lithuania, the country code is LTU. Required for forward geocoding.

### Address Guidelines for Lithuania

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Lithuania postal system, see the Lietuvos paštas website: [www.post.lt](http://www.post.lt).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Abbreviations in addresses**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

- **Numbers, Numeric Equivalents, and Ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Lithuania.

### Output Fields

The following table lists the address fields returned for a candidate located in Lithuania.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	The county.
<code>areaName3</code>	The city or town.

Field Name	Description
areaName4	The locality.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Lithuania, the country code is LTU.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Lithuania does not have any custom output fields.

## Macau (MAC)

This section defines the supported geocoding datasets, operations, and input and output field information for Macau.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Macau.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Portuguese	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Macau:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Rua Cidade de Lisboa N.o 130 <b>Taipa</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Not used - Macau does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Macau, the country code is MAC. Required for forward geocoding.

### Address Guidelines for Macau

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Macau addresses, see the Macau Post website: <http://www.macaupost.gov.mo/>.

- **Required fields**—Addresses must contain a city.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

**Note:** Postal geocoding is not available with Macau.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Macau.

### Output Fields

The following table lists the address fields returned for a candidate located in Macau.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The locality.

Field Name	Description
postCode1	Not used.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Macau, the country code is MAC.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Macau does not have any custom output fields.

## Republic of Macedonia (MKD)

This section defines the supported geocoding datasets, operations, and input and output field information for Macedonia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Macedonia.

**Note:** Custom User Dictionaries are supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Latin Macedonian	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Macedonia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Not used.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	The last line of the address. Optional.
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Not used.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Macedonia, the country code is MKD. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Macedonia.

### Output Fields

The following table lists the address fields returned for a candidate located in Macedonia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	Not used.
<code>areaName1</code>	The state.
<code>areaName2</code>	The district.
<code>areaName3</code>	The town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Macedonia, the country code is MKD.
<code>addressNumber</code>	Not used.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.
<code>unitValue</code>	The unit value/number, such as "3B".

Field Name	Description
customFields	Macedonia does not have any custom output fields.

## Malawi (MWI)

This section defines the supported geocoding datasets, operations, and input and output field information for Malawi.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Malawi.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Malawi:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>5 Mzimba Avenue  <b>Blantyre 3</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Some addresses in larger cities may be followed by a single-digit numeric sorting code. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Malawi does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Malawi, the country code is MWI. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required. For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Malawi.

### Output Fields

The following table lists the address fields returned for a candidate located in Malawi.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town. Some addresses in larger cities may be followed by a single-digit numeric sorting code.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Malawi, the country code is MWI.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Malawi does not have any custom output fields.

## Malaysia (MYS)

This section defines the supported geocoding datasets, operations, and input and output field information for Malaysia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Malaysia.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
MapInformation Solutions Sdn Bhd Malay	Yes	Yes	Yes	Yes	No	Yes	Yes

### Supported Operations

The following operations are supported for Malaysia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>906 Am Jln Pantai Batu Buruk  <b>20400 Kuala Terengganu</b></p>
areaName1	String	Specifies the state (negeri). Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first three digits represent the main delivery office, the last two digits indicate the delivery area. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Malaysia, the country code is MYS. Required for forward geocoding.

### Address Guidelines for Malaysia

For information on Malaysian addresses, see the Pos Malaysia website: [www.pos.com.my](http://www.pos.com.my). Some Malaysian addresses do not require a city or a postal code. For certain addresses, the geocoder can obtain a geocode by using only street information, which can be a combination of address number and street name, without any town or postal code.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][postal_code][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Malaysia.

### Output Fields

The following table lists the address fields returned for a candidate located in Malaysia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state (negeri).
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.

Field Name	Description
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Malaysia, the country code is MYS.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Malaysia does not have any custom output fields.

## Mali (MLI)

This section defines the supported geocoding datasets, operations, and input and output field information for Mali.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Mali.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Mali:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Rue 97 <b>Bamako</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Mali does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Mali, the country code is MLI. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Mali.

### Output Fields

The following table lists the address fields returned for a candidate located in Mali.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Mali, the country code is MLI.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Mali does not have any custom output fields.

## Republic of Malta (MLT)

This section defines the supported geocoding datasets, operations, and input and output field information for the Republic of Malta.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Republic of Malta.

**Note:** Custom User Dictionaries are not supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Maltese	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for the Republic of Malta:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>22 Old Bakery Street  <b>Valletta VLT 1459</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the alphanumeric postal code. Post codes in Malta are made up of three letters, which represent the locality, followed by four digits. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Malta, the country code is MLT. Required for forward geocoding.

### Address Guidelines for Malta

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Malta addresses, see the Malta Post website: <http://www.maltapost.com/>

- **Required fields**—Addresses must contain either a city or postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][area][postal_code]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- `[postal_code]` is the postal code.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to the Republic of Malta.

### Output Fields

The following table lists the address fields returned for a candidate located in the Republic of Malta.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.

Field Name	Description
areaName3	The city or town.
areaName4	Not used.
postCode1	The alphanumeric postal code. Post codes in Malta are made up of three letters, which represent the locality, followed by four digits.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Malta, the country code is MLT.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Republic of Malta does not have any custom output fields.

## Mauritania (MRT)

This section defines the supported geocoding datasets, operations, and input and output field information for Mauritania.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Mauritania.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Mauritania:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>28, rue Abdallaye  <b>Nouakchott</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Mauritania does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Mauritania, the country code is MRT. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.



For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Mauritania.

### Output Fields

The following table lists the address fields returned for a candidate located in Mauritania.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Mauritania, the country code is MRT.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Mauritania does not have any custom output fields.

## Mauritius (MUS)

This section defines the supported geocoding datasets, operations, and input and output field information for Mauritius.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Mauritius.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English, French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Mauritius:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>217, Royal Road  <b>Curepipe 74432</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first digit indicates the district, the second and third the village council area and the final two digits the sub-locality. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Mauritius, the country code is MUS. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area][postal\_code]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- *[address\_number]* is optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Mauritius.

### Output Fields

The following table lists the address fields returned for a candidate located in Mauritius.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Mauritius, the country code is MUS.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Mauritius does not have any custom output fields.

## Mexico (MEX)

This section defines the supported geocoding datasets, operations, and input and output field information for Mexico.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Mexico.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	Yes	Yes	Yes	Yes	No
TomTom Spanish	Yes	Yes	Yes	Yes	Yes	Yes	Yes

### Supported Operations

The following operations are supported for Mexico:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Nezahualcoyotl 109  <b>77520 Cancun, Q. ROO</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the province. Optional.
areaName3	String	The city or town name. Your input address should use the official city name or alias. For example, either Miguel Hidalgo or Mexico City can be used. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 5-digit postal code. The first two digits identify the state (or a part thereof), except for Nos. 00 to 16, which indicate delegaciones (boroughs) of the Federal District (Mexico City). The third digit indicates an important city or town. The fourth digit indicates a municipality or suburb within a town. The last digit indicates a group of blocks or the specific street address of a large user. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Mexico, the country code is MEX. Required for forward geocoding.

### Address Guidelines for Mexico

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional recommendations about the Mexican postal system, see the Correos de México website <http://www.sepomex.gob.mx/Paginas/Home.aspx>.



- **Required fields**—Addresses must contain either a city or a postal code.
- **Aliases for states**—You can use state aliases. For example, if you enter "YUC" it would match to Yucatán.

State	Alias
Aguascalientes	AGS/AG/AGU
Baja California	Bassa California/Neder-Californië/BC/BJ/BN/ BAJ/B C
Baja California Sur	Bassa California del Sud/BCS/BS/BAS/B C S
Campeche	CAM/CP/CM
Chiapas	CHIS/CH/CU/CHP
Chihuahua	CHIH/CI/CL/CHU
Colima	COL/CL/CH
Coahuila de Zaragoza	COAH/CU/CS/COA/CZ/C Z/Coahuila
Distrito Federal	Distretto Federale/DF/MDF/D F
Durango	DGO/DG/DUR
Guanajuato	GTO/GJ/GT/GUA
Guerrero	GRO/GR/GUE
Hidalgo	HGO/HG/HID

State	Alias
Jalisco	JAL/JA
México	Mexico/Mexiko/Meksiko/Messico/MEX/EM/MX
Michoacán de Ocampo	MICH/MH/MC/MIC/MO/M O/Michoacan
Morelos	MOR/MR
Nayarit	NAY/NA
Nuevo León	NL/NUE/N L
Oaxaca	OAX/OA
Puebla	PUE/PU/PUB
Querétaro Arteaga	QRO/QA/QE/QDA/Q A/Queretaro
Quintana Roo	QROO/QR/QI/QRO/Q R/Q Roo
San Luis Potosí	San Luis Potosí
Sinaloa	SIN/SI
Sonora	SON/SO
Tabasco	TAB/TA/TB

State	Alias
Tamaulipas	TAMPS/TM/TAM
Tlaxcala	TLAX/TL/TLX
Veracruz de Ignacio de la Llave	VER/VZ/VE/VCL/Veracruz
Yucatán	Yucatan/YUC/YC/YU
Zacatecas	ZAC/ZT/ZA

- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. For example, you can input Calle 5 or Calle cinco and get the same returned candidates. Ordinals are also recognized in input addresses. For example, the following are all recognized in an input address: 5, CINCO, QUINTO, and QUINTA.
- **Directionals**—The following directionals are recognized in input addresses: Norte, Oriente, Este, Sur, Oeste, Occidente, Poniente, N, E, S, O, NE, NO, SE, SO, Noreste, Sudeste, Noroeste, and Sudoeste.
- **Address point data**— The MEX NAVTEQ Points database includes address point data. Address point candidates return an S8 result code.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Mexico.

### Output Fields

The following table lists the address fields returned for a candidate located in Mexico.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	The province.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The locality.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Mexico, the country code is MEX.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.
<code>unitValue</code>	The unit value/number, such as "3B".

Field Name	Description
customFields	Mexico does not have any custom output fields.

## Montenegro (MNE)

This section defines the supported geocoding datasets, operations, and input and output field information for Montenegro.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Montenegro.

**Note:** Custom User Dictionaries are not supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Montenegrin, Latin Montenegrin	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Montenegro:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Ulica Slobode broj 1  <b>81000 Podgorica</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Montenegro, the country code is MNE. Required for forward geocoding.

### Address Guidelines for Montenegro

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Montenegro addresses, see the Montenegro Post website: <http://www.postacg.me/>

- **Required fields**—Addresses must contain either a city or postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Montenegro.

### Output Fields

The following table lists the address fields returned for a candidate located in Montenegro.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.

Field Name	Description
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Montenegro, the country code is MNE.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Montenegro does not have any custom output fields.



## Morocco (MAR)

This section defines the supported geocoding datasets, operations, and input and output field information for Morocco.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Morocco.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Morocco:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>25 Avenue Moukhtar Soussi  <b>28630 Ain Harrouda</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first two digits refer to a province, the third digit to a sub-central delivery office and the last two digits to a delivery office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Morocco, the country code is MAR. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][postal_code][area]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[postal\_code]* is the postal code.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Morocco.

### Output Fields

The following table lists the address fields returned for a candidate located in Morocco.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Morocco, the country code is MAR.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Morocco does not have any custom output fields.

## Mozambique (MOZ)

This section defines the supported geocoding datasets, operations, and input and output field information for Mozambique.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Mozambique.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Portuguese	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Mozambique:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Rua da Namaacha, 492 <b>1100 Maputo</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 4-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Mozambique, the country code is MOZ. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Mozambique.

### Output Fields

The following table lists the address fields returned for a candidate located in Mozambique.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 4-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Mozambique, the country code is MOZ.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Mozambique does not have any custom output fields.



## Namibia (NAM)

This section defines the supported geocoding datasets, operations, and input and output field information for Namibia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Namibia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Namibia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>14 Katanga Street <b>Swakopmund</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Namibia does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Namibia, the country code is NAM. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Namibia.

### Output Fields

The following table lists the address fields returned for a candidate located in Namibia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Namibia, the country code is NAM.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Namibia does not have any custom output fields.

## Netherlands (NLD)

This section defines the supported geocoding datasets, operations, and input and output field information for the Netherlands.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Netherlands.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Dutch, French, German	Yes	Yes	Yes	Yes	Yes	Yes	No

### Supported Operations

The following operations are supported for the Netherlands:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Raadhuisstraat 52 <b>1016 AG Amsterdam</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the province. Optional.
areaName3	String	Specifies the city or town name. Your input address should use the official city name or alias.
areaName4	String	Not used.
postalCode	String	Specifies the 4-digit and 2-letter alphanumeric postal code.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Netherlands, the country code is NLD. Required for forward geocoding.

### Address Guidelines for Netherlands

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Netherlands addresses, see the TNT Post website: [www.tntpost.nl](http://www.tntpost.nl).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Aliases for cities**—Locality, town, and province aliases can be used on input. When you geocode, the better matched input name (the official name or alias) is returned with the candidate.

- **Post office box numbers**—Post Office Box numbers are not used for address matching or geocoding purposes, but this does not interfere with matching or geocoding. The PO Box information is not returned. The following formats are recognized: Postbus, PostFach.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[street_info][address_number][postal_code][area]
```

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to the Netherlands.

### Output Fields

The following table lists the address fields returned for a candidate located in the Netherlands.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.

Field Name	Description
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	Not used.
areaName2	The province.
areaName3	The city or town.
areaName4	Not used.
postCode1	The 4-digit and 2-letter alphanumeric postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For the Netherlands, the country code is NLD.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Netherlands does not have any custom fields.



## New Zealand (NZL)

This section defines the supported geocoding datasets, operations, and input and output field information for New Zealand.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for New Zealand.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
Critchlow English	Yes	Yes	Yes	Yes	Yes	Yes	Yes

### Supported Operations

The following operations are supported for New Zealand:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>56 Namata Road One Tree Hill <b>Auckland 2001</b></p>
areaName1	String	Specifies the region. A region is an administrative division of the country. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the suburb. Optional.
postalCode	String	The four-digit postal code. The first digit represents the geographic region. The second and third digits represent the postal sort area. The last digit represents a specific urban area, rural delivery or PO box lobby. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For New Zealand, the country code is NZL. Required for forward geocoding.

### Address Guidelines for New Zealand

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on New Zealand addresses, see the New Zealand Post website: [www.nzpost.co.nz](http://www.nzpost.co.nz).

- **Required fields**—Addresses must contain either a city or a postal code.

- **Aliases for suburbs**—The geocoder supports locally used suburb names in addition to the officially recognized suburb names. For example, Rosedale is an alias of the official suburb name of Hargest.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[unit_info][address_number][street_info][areaName4][areaName3][postal_code]
```

Where:

- `[unit_info]` is the unit type and/or value. *Optional.*
- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.).
- `[areaName4]` is the suburb.
- `[areaName3]` is the city.
- `[postal_code]` is the 4-digit postal code.
- Either `[areaName3]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

The following table lists the option that is unique for New Zealand. This custom field is applicable to the Geocoding operation and is an optional input parameter. For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
ReturnOriginalCoordinates	When set to true, returns the ORIGINAL_LONGITUDE and ORIGINAL_LATITUDE values in the candidate's custom output fields.

### Output Fields

The following table lists the address fields returned for a candidate located in New Zealand.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The region.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The suburb.
<code>postCode1</code>	The 4-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For New Zealand, the country code is NZL.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.
<code>unitValue</code>	The unit value/number, such as "3B".
<code>customFields</code>	The following table lists the custom fields for New Zealand.

### Custom Output Fields

The following table lists the output fields that are unique for New Zealand. Unless otherwise noted, these fields can be returned for both forward and reverse geocoding.

Name	Description
ALIASED_SUBURB	New Zealand Aliased suburb. An alternative to the officially-recognized suburb name.
KEY_UFI	New Zealand UFI. The Unique Identifier (UFI) identifies the street segment that the geocoded address belongs to. UFIs are up to 7-digit numbers, assigned by New Zealand Post, that uniquely identify each postal delivery point. The UFI is always returned if available, but you cannot use the UFI for input.
NZL_MESHBLOCK_ID	New Zealand Meshblock identifier. A Meshblock is the smallest geographic unit for which statistical data is collected by Statistics New Zealand. Meshblocks vary in size from part of a city block to large areas of rural land.
ORIGINAL_LATITUDE	The original latitude value.
ORIGINAL_LONGITUDE	The original longitude value.

## Nicaragua (NIC)

This section defines the supported geocoding datasets, operations, and input and output field information for Nicaragua.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Nicaragua.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Nicaragua:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Puerto Salvador Allende  <b>12001 Managua</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Nicaragua, the country code is NIC. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Nicaragua.

### Output Fields

The following table lists the address fields returned for a candidate located in Nicaragua.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Nicaragua, the country code is NIC.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.



Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Nicaragua does not have any custom output fields.

## Niger (NER)

This section defines the supported geocoding datasets, operations, and input and output field information for Niger.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Niger.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Niger:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>21, Avenue de l'Afrique  <b>8006 Niamey</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 4-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Niger, the country code is NER. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][postal\_code][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Niger.

### Output Fields

The following table lists the address fields returned for a candidate located in Niger.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Niger, the country code is NER.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Niger does not have any custom output fields.

## Nigeria (NGA)

This section defines the supported geocoding datasets, operations, and input and output field information for Nigeria.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Nigeria.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Nigeria:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>53 Yakubu Avenue  <b>234800 Kaduna</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 6-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Nigeria, the country code is NGA. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][postal\_code][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Nigeria.

### Output Fields

The following table lists the address fields returned for a candidate located in Nigeria.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 6-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Nigeria, the country code is NGA.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.



Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Nigeria does not have any custom output fields.

## Norway (NOR)

This section defines the supported geocoding datasets, operations, and input and output field information for Norway.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Norway.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Norwegian	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Norway:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Breidablikkvegen 28  <b>3711 Skien</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the district (fylke/counties). Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Not used.
postalCode	String	Specifies the 4-digit postal code. The first two digits designate the geographic area.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Norway, the country code is NOR. Required for forward geocoding.

### Address Guidelines for Norway

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Norway addresses, see the Posten Norge website: [www.posten.no](http://www.posten.no).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Common words, abbreviations, and directionals**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations, such as St for Sankt, used in addresses and can geocode these addresses successfully.

- **Numbers, equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Norway.

### Output Fields

The following table lists the address fields returned for a candidate located in Norway.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	The district (fylke/counties).
<code>areaName3</code>	The city or town.

Field Name	Description
areaName4	Not used.
postCode1	The 4-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Norway, the country code is NOR.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Norway does not have any custom output fields.

## Oman (OMN)

This section defines the supported geocoding datasets, operations, and input and output field information for Oman.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Oman.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic and English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Oman:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements. For additional information on Oman addresses, see the Oman Post website: [www.omanpost.om](http://www.omanpost.om).

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>8 Bait Al Wallaj Street  <b>113 Muscat</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 3-digit postal code. The first digit represents the region. The last two digits represent the post office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Oman, the country code is OMN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][postal\_code][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Oman.

### Output Fields

The following table lists the address fields returned for a candidate located in Oman.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 3-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Oman, the country code is OMN.
<code>addressNumber</code>	The address number.



Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Oman does not have any custom output fields.

## Panama (PAN)

This section defines the supported geocoding datasets, operations, and input and output field information for Panama.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Panama.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Panama:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Calle Basilica 24 <b>2545, Chitré</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 4-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Panama, the country code is PAN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Panama.

### Output Fields

The following table lists the address fields returned for a candidate located in Panama.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 4-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Panama, the country code is PAN.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Panama does not have any custom output fields.

## Paraguay (PRY)

This section defines the supported geocoding datasets, operations, and input and output field information for Paraguay.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Paraguay.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Paraguay:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Paí Pérez No 552 <b>1531 Asuncion</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 4-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Paraguay, the country code is PRY. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Paraguay.

### Output Fields

The following table lists the address fields returned for a candidate located in Paraguay.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 4-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Paraguay, the country code is PRY.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.



Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Paraguay does not have any custom output fields.

## Peru (PER)

This section defines the supported geocoding datasets, operations, and input and output field information for Peru.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Peru.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Peru:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the lastLine field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Av. Larco 1301 <b>15074 Lima</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Peru, the country code is PER. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Peru.

### Output Fields

The following table lists the address fields returned for a candidate located in Peru.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Peru, the country code is PER.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Peru does not have any custom output fields.

## Philippines (PHL)

This section defines the supported dictionaries, operations, and input and output field information for the Philippines.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Philippines.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for the Philippines:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>7114 Kundiman Street, Sampaloc  <b>1008 Manila</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 4-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Philippines, the country code is PHL. Required for forward geocoding.

### Address Guidelines for Philippines

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Philippines addresses, see the Philippine postal website <http://www.philpost.gov.ph/www.philpost.gov.ph/>.

- **Required fields**—Addresses must contain a city. PHL does not consider postal codes in addresses.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported in input addresses.
- **Common words and abbreviations**—Common words, directionals, house number indicators, and abbreviations used in addresses are supported.

- **Numbers and numeric equivalents**—Numbered streets are mapped to the named equivalents.

**Note:** Postal geocoding is not available with Philippines.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][areaName3][areaName2]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[areaName3]` is the city or town. Required.
- `[areaName2]` is the district.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to the Philippines.

### Output Fields

The following table lists the address fields returned for a candidate located in the Philippines.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	The district.



Field Name	Description
areaName3	The city or town.
areaName4	The locality.
postCode1	The 4-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Philippines, the country code is PHL.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Philippines does not have any custom output fields.

## Poland (POL)

This section defines the supported geocoding datasets, operations, and input and output field information for Poland.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Poland.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Polish	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Poland:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Plac Teatralny 13  <b>45-056 Opole</b></p>
areaName1	String	Specifies the province (voivodship). Optional.
areaName2	String	Specifies the district (powiat). Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code in the following format: xy-zzz. The first digit represents the postal district. The second digit represents a subdivision of the district. The three digits after the dash represent the post office, or in case of large cities, a particular street or part of a street.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Poland, the country code is POL. Required for forward geocoding.

### Address Guidelines for Poland

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Poland addresses, see the Polish Post website: [www.poczta-polska.pl](http://www.poczta-polska.pl).

- **Required fields**—Addresses must contain either a city or a postal code.

- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Poland.

### Output Fields

The following table lists the address fields returned for a candidate located in Poland.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.

Field Name	Description
areaName1	The province (voivodship).
areaName2	The district (powiat).
areaName3	The city or town.
areaName4	Not used.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Poland, the country code is POL.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Poland does not have any custom output fields.

## Portugal (PRT)

This section defines the supported geocoding datasets, operations, and input and output field information for Portugal.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Portugal.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Portuguese	Yes	Yes	Yes	Yes	Yes	Yes	No
TomTom Portuguese	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Portugal:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Rua Miguel Bombarda 49 <b>2775-153 Parede</b></p>
areaName1	String	Specifies the region. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. This may also be the town alias. For example, Lisbon, Lisbonne, Lissabon, and Lisbona are aliases for Lisboa. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Portugal uses a four-digit postal code beginning with a number between 1 and 9. More recently, Portugal instituted a seven-digit postcode with a dash and three additional digits following the first four digits. The geocoder ignores the additional three digits and returns the four-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Portugal, the country code is PRT. Required for forward geocoding.

### Address Guidelines for Portugal

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Portugal addresses, see the CTT Portugal Post website: [www.ctt.pt](http://www.ctt.pt).

- **Required fields**—Addresses must contain either a city or a postal code.

- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.
- **Address point data**— The PRT NAVTEQ Points database includes address point data. Address point candidates return an S8 result code.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

The following table lists the options that are unique for Portugal. These custom fields are applicable to the Geocoding operation and are optional input parameters. For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
USE_ADDRESS_POINT_INTERPOLATION	When set to true, enables address point interpolation. Default = false. Supported only in forward geocoding.
	<b>Note:</b> The address point interpolation feature requires that you have a point-level geocoding dataset installed.



Option Name	Description
USE_CENTERLINE_OFFSET	<p>When set to true, calculates the centerline offset for point addresses. Default = false. Supported only in forward geocoding.</p> <p><b>Note:</b> The centerline feature requires that you have a point-level geocoding dataset installed.</p> <p>A centerline point match is indicated by a result code beginning with <b>SC</b>.</p>
CENTERLINE_OFFSET	<p>When USE_CENTERLINE_OFFSET is enabled, this specifies the distance to offset the point from centerline. Default = 0. Supported in forward geocoding only.</p>
CENTERLINE_OFFSET_UNIT	<p>When USE_CENTERLINE_OFFSET is enabled, this specifies the unit type for the centerline offset. Valid values = feet, meters. Default = meters. Supported only in forward geocoding.</p>

### Output Fields

The following table lists the address fields returned for a candidate located in Portugal.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
mainAddressLine	The street address which may include company name, house number, building names and street names.
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	The region.
areaName2	Not used.
areaName3	The city or town.
areaName4	The locality.
postCode1	The first 4 digits of the postal code.

Field Name	Description
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Portugal, the country code is PRT.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Portugal does not have any custom output fields.

## Qatar (QAT)

This section defines the supported geocoding datasets, operations, and input and output field information for Qatar.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Qatar.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic, English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Qatar:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements. For additional information on Qatar addresses, see the Qatar postal website: [www.qpost.com.qa](http://www.qpost.com.qa)

**Note:** The Arabic character set is also supported.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Street 656 <b>Al Rayyan</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town.
areaName4	String	Not used.
postalCode	String	Not used - Qatar does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Qatar, the country code is QAT. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Qatar.

### Output Fields

The following table lists the address fields returned for a candidate located in Qatar.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Qatar, the country code is QAT.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Qatar does not have any custom output fields.

## Romania (ROU)

This section defines the supported geocoding datasets, operations, and input and output field information for Romania.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Romania.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Romanian	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Romania:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Strada Alexandru Ioan Cuza 13  <b>200585 Craiova</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the sector in the case of Bucharest.
postalCode	String	Specifies the 6-digit postal code. The first digit indicates the postal region. The second digit indicates the district of a region or sector in Bucharest. The last 4 digits indicate the delivery area. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Romania, the country code is ROU. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.



- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Romania.

### Output Fields

The following table lists the address fields returned for a candidate located in Romania.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The urban sector.
<code>postCode1</code>	The 6-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Romania, the country code is ROU.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Romania does not have any custom output fields.

## Russian Federation (RUS)

This section defines the supported geocoding datasets, operations, and input and output field information for the Russian Federation.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Russian Federation.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Russian, English	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for the Russian Federation:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

**Note:** The Russian Cyrillic character set is also supported.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Vzletnaya Str 5  <b>Krasnogorsk 143400</b></p>
areaName1	String	Specifies the region. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 6-digit postal code. The first three digits indicate the region or large town, the last three the post office.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Russian Federation, the country code is RUS. Required for forward geocoding.

### Address Guidelines for Russia

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Russian addresses, see the Russian Post website: <http://www.russianpost.ru/>

- **Required fields**—Addresses must contain either a city or a postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[street_info][address_number][area][postal_code]
```

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- `[postal_code]` is the postal code.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to the Russian Federation.

### Output Fields

The following table lists the address fields returned for a candidate located in the Russian Federation.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The region.
<code>areaName2</code>	The district.

Field Name	Description
areaName3	The city or town.
areaName4	The locality.
postCode1	The 6-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For the Russian Federation, the country code is RUS.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Russian Federation does not have any custom output fields.

## Rwanda (RWA)

This section defines the supported geocoding datasets, operations, and input and output field information for Rwanda.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Rwanda.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Rwanda:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>265 Akagera Street <b>Kigali</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Rwanda does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Rwanda, the country code is RWA. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.



For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Rwanda.

### Output Fields

The following table lists the address fields returned for a candidate located in Rwanda.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Rwanda, the country code is RWA.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Rwanda does not have any custom output fields.

## Saint Kitts and Nevis (KNA)

This section defines the supported geocoding datasets, operations, and input and output field information for Saint Kitts and Nevis.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Saint Kitts and Nevis.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Saint Kitts and Nevis:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Wellington Road  <b>Basseterre</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - St. Kitts and Nevis does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Saint Kitts and Nevis, the country code is KNA. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Saint Kitts and Nevis.

### Output Fields

The following table lists the address fields returned for a candidate located in Saint Kitts and Nevis.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Saint Kitts and Nevis, the country code is KNA.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Saint Kitts and Nevis does not have any custom output fields.

## Saudi Arabia (SAU)

This section defines the supported geocoding datasets, operations, and input and output field information for Saudi Arabia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Saudi Arabia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic, English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Saudi Arabia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>8104 Al Abbas Ibn Al Ahnif, Al Mursalat  <b>Riyadh 12464</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town.
areaName4	String	Not used.
postalCode	String	Specifies the 5- or 9-digit postal code.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Saudi Arabia, the country code is SAU. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][postal_code][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[postal_code]` is the postal code.



- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Saudi Arabia.

### Output Fields

The following table lists the address fields returned for a candidate located in Saudi Arabia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	The 4-digit extension.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Saudi Arabia, the country code is SAU.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Saudi Arabia does not have any custom output fields.

## Senegal (SEN)

This section defines the supported geocoding datasets, operations, and input and output field information for Senegal.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Senegal.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Senegal:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>12 Avenue Cheikh Anta Diop  <b>12500 Dakar</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first digit indicates the delivery zone, the second and third digits represent the post office and the final two digits indicate the distribution point. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Senegal, the country code is SEN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][postal_code][area]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[postal\_code]* is the postal code.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Senegal.

### Output Fields

The following table lists the address fields returned for a candidate located in Senegal.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Senegal, the country code is SEN.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Senegal does not have any custom output fields.

## Republic of Serbia (SRB)

This section defines the supported geocoding datasets, operations, and input and output field information for the Republic of Serbia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Republic of Serbia.

**Note:** Custom User Dictionaries are not supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English, Serbian	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for the Republic of Serbia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Vase Pelagića 32  <b>11040 Beograd</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Serbia, the country code is SRB. Required for forward geocoding.

### Address Guidelines for Serbia

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Serbia addresses, see the Serbia Post website: <http://www.posta.rs/default-eng.asp>

- **Required fields**—Addresses must contain either a city or postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to the Republic of Serbia.

### Output Fields

The following table lists the address fields returned for a candidate located in the Republic of Serbia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.



Field Name	Description
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	Not used.
areaName2	Not used.
areaName3	The city or town.
areaName4	Not used.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Serbia, the country code is SRB.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Republic of Serbia does not have any custom output fields.

## Singapore (SGP)

This section defines the supported geocoding datasets, operations, and input and output field information for Singapore.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Singapore.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
MIS English	Yes	Yes	Yes	Yes	No	Yes	Yes

### Supported Operations

The following operations are supported for Singapore:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>5 Bishan Place  <b>Singapore 579841</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town.
areaName4	String	Not used.
postalCode	String	Specifies the six-digit postal code. The first two numbers represent the sector and the last four numbers represent the delivery point within the sector. Every building in Singapore has a unique postal code.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Singapore, the country code is SGP. Required for forward geocoding.

### Address Guidelines for Singapore

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Singapore addresses, see the Singapore Post website: [www.singpost.com](http://www.singpost.com).

- **Required fields**—Addresses must contain either a city or a postal code.
- **PO box addresses**—Post Office Box numbers are not used for address matching or geocoding purposes, but this does not interfere with matching or geocoding. The PO Box information is not returned. The following formats are recognized: P O Box, Locked Bag Service.

- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output. The following table shows a partial list of recognized thoroughfare types. Others may also be recognized.

Pre-thoroughfare types	lorong=lorong, lrg, lor, lorang jalan=jalan, jln, jl lengkong=lengkong, lkg kallang=kallang mount=mount, mt upper=upper, upp
Post-thoroughfare types	track=trk,tck street=st road=rd drive=dr crescent=cr,cres,crescent,cresent boulevard=bvd,blvd,bouleyard,boulevard hill=hill gate=gate mall=mall avenue=ave,av,avnue link=lk lane=l walk=wk green=grn highway=hwy quay=quay, qy parkway=pwpy

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully. The following table shows a partial list of common abbreviations that are recognized. Other common abbreviations may also be recognized.

## Common abbreviations

AYE=Ayer Rajah Expressway  
 BKE=Bukit Timah Expressway  
 CTE=Central Expressway  
 ECP=East Coast Parkway  
 KJE=Kranji Expressway  
 KPE=Kallang-Paya Lebar Expressway  
 PIE=Pan Island Expressway  
 SLE=Seletar Expressway  
 TPE=Tampines Expressway  
 Ctrl=Central  
 JLN=Jalan  
 LRG=Lorong  
 TG.=TANJONG

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### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][Singapore][postal\_code]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[Singapore]* If not supplied, a postal code is required.
- *[postal\_code]* is the postal code. Required if "Singapore" does not appear in the address.

For best results, put a comma between the street information and the last address line information.

### Custom Options

The following table lists the options that are unique for Singapore. These custom fields are applicable to the Geocoding operation and are optional input parameters. For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
USE_ADDRESS_POINT_INTERPOLATION	When set to true, enables address point interpolation. Default = false. Supported only in forward geocoding.  <b>Note:</b> The address point interpolation feature requires that you have a point-level geocoding dataset installed.

### Output Fields

The following table lists the address fields returned for a candidate located in Singapore.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
mainAddressLine	The street address which may include company name, house number, building names and street names.
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	Not used.
areaName2	Not used.
areaName3	The city or town.
areaName4	Not used.
postCode1	The 6-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Singapore, the country code is SGP.
addressNumber	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Singapore does not have any custom output fields.

## Slovakia (SVK)

This section defines the supported geocoding datasets, operations, and input and output field information for Slovakia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Slovakia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Slovakian	Yes	Yes	Yes	Yes	Yes	Yes	No

### Supported Operations

The following operations are supported for Slovakia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Tatranská Lomnica 121  <b>062 01 Vysoké Tatry</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the town. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality or alias. Optional.
postalCode	String	Specifies the 5-digit postal code. It is typical for the postal code to have a space between the third and fourth digits. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Slovakia, the country code is SVK. Required for forward geocoding.

### Address Guidelines for Slovakia

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Slovakian postal system, see the Slovakia Post website: <http://www.posta.sk/>.

- **Required fields**—Addresses must contain a street name and either a town or a postal code.
- **Abbreviations in addresses**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

- **Numbers, Numeric Equivalents, and Ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Slovakia.

### Output Fields

The following table lists the address fields returned for a candidate located in Slovakia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	The town.
<code>areaName3</code>	The city or town.

Field Name	Description
areaName4	The locality or alias.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Slovakia, the country code is SVK.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Slovakia does not have any custom output fields.

## Slovenia (SVN)

This section defines the supported geocoding datasets, operations, and input and output field information for Slovenia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Slovenia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Slovenian	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Slovenia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Metelkova ulica 2  <b>1000 Ljubljana</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the region. Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality or alias. Optional.
postalCode	String	Specifies the 4-digit postal code.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Slovenia, the country code is SVN. Required for forward geocoding.

### Address Guidelines for Slovenia

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Slovenia postal system, see the Slovenia Post website: [www.posta.si](http://www.posta.si).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Thoroughfare types**—Slovenian thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Abbreviations in addresses**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Slovenia.

### Output Fields

The following table lists the address fields returned for a candidate located in Slovenia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	The region.
<code>areaName3</code>	The city or town.

Field Name	Description
areaName4	The locality or alias.
postCode1	The 4-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Slovenia, the country code is SVN.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Slovenia does not have any custom output fields.

## South Africa (ZAF)

This section defines the supported geocoding datasets, operations, and input and output field information for South Africa.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for South Africa.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for South Africa:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>211 Waterval Road  <b>2034 Randburg</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 4-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For South Africa, the country code is ZAF. Required for forward geocoding.

### Address Guidelines for South Africa

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on South African addresses, see the South African Postal Service website: <http://www.postoffice.co.za/>.

- **Required fields**—Addresses must contain a city. ZAF does not consider postal codes in addresses.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][postal_code][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to South Africa.

### Output Fields

The following table lists the address fields returned for a candidate located in South Africa.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	The district.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	The locality.

Field Name	Description
postCode1	The 4-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For South Africa, the country code is ZAF.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	South Africa does not have any custom output fields.

## Spain (ESP)

This section defines the supported geocoding datasets, operations, and input and output field information for Spain.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Spain.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Streets English, Spanish, Basque, Catalan	Yes	Yes	Yes	Yes	Yes	No	No
TomTom Points	Yes	Yes	Yes	Yes	Yes	Yes	No
NAVTEQ Points	Yes	Yes	Yes	Yes	Yes	Yes	No

### Supported Operations

The following operations are supported for Spain:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Calle de Mesena, 77  <b>28033 Madrid</b></p>
areaName1	String	Specifies the region. Optional.
areaName2	String	Specifies the province. Optional.
areaName3	String	Specifies the city or town. The input can be the official city name or alias. The alias can be either a local alternative name or a language alternative (Basque or Catalan). The city name returned will match the name specified in the input. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Spain, the country code is ESP. Required for forward geocoding.

### Address Guidelines for Spain

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information about the Spain postal system, see the Spanish postal service website: [www.correos.es](http://www.correos.es).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Supported languages**—If a street has a Spanish name and Basque or Catalan alternate name, the returned candidate street name will match the input. That is, if a Basque or Catalan street

name is used on input, then the Basque or Catalan alternate street name is returned as a close match candidate. If the Spanish street name is input, the Spanish street name is returned.

- **Abbreviations in addresses**—The geocoder handles common abbreviations that are used in Spanish addresses. This includes abbreviations for building types, floor indicators, titles, and articles of speech. The geocoder also supports all the official Spanish street type abbreviations plus a number of unofficial street types to help improve geocoding efficiency. Abbreviated street directionals are also handled on input and the returned candidate displays the complete directional. For example, input of Arroya Guadalpia N returns the street Arroya Guadalpia Norte.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[street_info][address_number][postal_code][area]
```

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Spain.

### Output Fields

The following table lists the address fields returned for a candidate located in Spain.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.

Field Name	Description
areaName1	The region.
areaName2	The province.
areaName3	The city or town.
areaName4	The locality.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Spain, the country code is ESP.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Spain does not have any custom output fields.

## Republic of Suriname (SUR)

This section defines the supported geocoding datasets, operations, and input and output field information for the Republic of Suriname.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Republic of Suriname.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Dutch	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for the Republic of Suriname:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Bombaystraat 21a  <b>Paramaribo</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - The Republic of Suriname does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Suriname, the country code is SUR. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required. For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to the Republic of Suriname.

### Output Fields

The following table lists the address fields returned for a candidate located in Suriname.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Suriname, the country code is SUR.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Republic of Suriname does not have any custom output fields.

## Swaziland (SWZ)

This section defines the supported geocoding datasets, operations, and input and output field information for Swaziland.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Swaziland.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Swaziland:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>172 Malkerns Road  <b>Mbabane M204</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 4 character alpha-numeric postal code. The letter identifies one of the country's four districts. The three digits indicate the post office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Swaziland, the country code is SWZ. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area][postal_code]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Swaziland.

### Output Fields

The following table lists the address fields returned for a candidate located in Swaziland.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 4 character alpha-numeric postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Swaziland, the country code is SWZ.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Swaziland does not have any custom output fields.

## Sweden (SWE)

This section defines the supported geocoding datasets, operations, and input and output field information for Sweden.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Sweden.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Swedish	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TomTom Swedish	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Sweden:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

Swedish addresses may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Gustavslundsvägen 147 2 tr  <b>167 51 Bromma</b></p>
areaName1	String	Specifies the region (lan). Optional.
areaName2	String	Specifies the kommun. Optional.
areaName3	String	Specifies the city or town name.
areaName4	String	Not used.
postalCode	String	Sweden uses a five-digit postal code beginning with a number between 1 and 9. There is typically a space between the first three digits (the outward sorting part of the postcode) and the last two digits (the inward sorting part).
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Sweden, the country code is SWE. Required for forward geocoding.

### Address Guidelines for Sweden

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Sweden addresses, see the Post Norden website: [www.posten.se](http://www.posten.se).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.
- **Address point data**— The SWE NAVTEQ Points geocoding dataset includes address point data. Address point candidates return an S8 result code.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

The following table lists the options that are unique for Sweden. These custom fields are applicable to the Geocoding operation and are optional input parameters. For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
USE_ADDRESS_POINT_INTERPOLATION	When set to true, enables address point interpolation. Default = false. Supported only in forward geocoding.  <b>Note:</b> The address point interpolation feature requires that you have a point-level geocoding dataset installed.

### Output Fields

The following table lists the address fields returned for a candidate located in Sweden.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
mainAddressLine	The street address which may include company name, house number, building names and street names.
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	The region (lan).
areaName2	The kommun.
areaName3	The town or city.
areaName4	Not used.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Sweden, the country code is SWE.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Sweden does not have any custom output fields.

## Switzerland (CHE)

This section defines the supported geocoding datasets, operations, and input and output field information for Switzerland and Liechtenstein. Content that references Switzerland also pertains to Liechtenstein.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Switzerland.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom German, French, Italian	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Switzerland:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Vogelsangstrasse 17  <b>8307 Illnau-Effretikon</b></p>
areaName1	String	Not used.
areaName2	String	Specifies the province. Optional.
areaName3	String	Specifies the city or town. A city alias is also supported. For example, Losanna is one of the aliases for Lausanne.
areaName4	String	Not used.
postalCode	String	Specifies the 4-digit postal code. The initial digit indicates the largest postal regions (routing areas). The second digit indicates the region within this area (routing district). The third digit indicates the route, and the fourth the destination locality. Larger towns may have an additional digit after the town name to indicate the sorting district.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Switzerland, the country code is CHE. For Liechtenstein, the country code is LIE. Required for forward geocoding.

### Address Guidelines for Switzerland

The Switzerland geocoder supports locations in Switzerland and Liechtenstein. Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Swiss addresses, see the Swiss Post website:

[www.swisspost.ch](http://www.swisspost.ch). For additional information on the Liechtenstein postal system, see the Liechtenstein Post Corp website: [www.post.li](http://www.post.li).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Thoroughfare types**—German, French, and Italian thoroughfare types and their common abbreviations are recognized and fully supported on input and output. Over 300 thoroughfare types are recognized.
- **Common words and abbreviations**—You can use German, French, and Italian common words, directionals, house number indicators, and abbreviations that are typically used in addresses.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents in German, French, or Italian. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[street_info][address_number][postal_code][area]
```

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Switzerland.

### Output Fields

The following table lists the address fields returned for a candidate located in Switzerland.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.

Field Name	Description
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	Not used.
areaName2	The province.
areaName3	The city or town.
areaName4	Not used.
postCode1	The 4-digit postal code.
postCode2	The 1-digit sorting code.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Switzerland, the country code is CHE.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Switzerland does not have any custom output fields.

## Taiwan (TWN)

This section defines the supported geocoding datasets, operations, and input and output field information for Taiwan.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Taiwan.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Chinese, English	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Taiwan:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>No. 720, Jiuru 1st Road  <b>Kaohsiung City, Taiwan 807</b></p>
areaName1	String	Specifies the county or special municipality. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 3-digit or 3+2-digit postal code. The first three digits refer to the third level administrative divisions, which include districts, county-controlled cities and townships. The last 2 digits refer to a more detailed division.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Taiwan, the country code is TWN. Required for forward geocoding.

### Address Guidelines for Taiwan

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Taiwanese addresses, see the Taiwan Post website: [http://www.post.gov.tw/post/internet/u\\_english/index.htm](http://www.post.gov.tw/post/internet/u_english/index.htm)

- **Required fields**—Addresses must contain either a city or a postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][areaName3][areaName1][postal_code]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[areaName3]` is the city.
- `[areaName1]` is the county or special municipality.
- `[postal_code]` is the postal code.
- Either `[areaName3]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Taiwan.

### Output Fields

The following table lists the address fields returned for a candidate located in Taiwan.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The county or special municipality.
<code>areaName2</code>	Not used.

Field Name	Description
areaName3	The city or town.
areaName4	The locality.
postCode1	The 3- or 3+2-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Taiwan, the country code is TWN.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Taiwan does not have any custom output fields.

## United Republic of Tanzania (TZA)

This section defines the supported geocoding datasets, operations, and input and output field information for Tanzania.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Tanzania.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Tanzania:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>79 Haile Salassie Road  <b>38263 Oysterbay, Dar es Salaam</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first 3 digits indicate the locality. The last 2 digits indicate the delivery area or post office. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Tanzania, the country code is TZA. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][postal\_code][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- *[postal\_code]* is the postal code.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Tanzania.

### Output Fields

The following table lists the address fields returned for a candidate located in Tanzania.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Tanzania, the country code is TZA.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Tanzania does not have any custom output fields.

## Thailand (THA)

This section defines the supported geocoding datasets, operations, and input and output field information for Thailand.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Thailand.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Latin Thai	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for Thailand:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>474 Praditmanutham Rd.  <b>Wangthonglang, Bangkok, 10310</b></p>
areaName1	String	Specifies the province (changwat). Optional.
areaName2	String	Not used.
areaName3	String	Specifies the subdistrict (tambon).
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first two digits of the postal code indicate the province, the last three digits indicate the district (amphoe).
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Thailand, the country code is THA. Required for forward geocoding.

### Address Guidelines for Thailand

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Thailand addresses, see the Thailand Post website: [www.thailandpost.com](http://www.thailandpost.com).

- **Required fields**—Addresses must contain either a city or a postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.
- **Numbers, numeric equivalents, and ordinals**—Numbered streets are mapped to the named equivalents. Ordinals are also recognized in input addresses.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number][street_info][areaName3][areaName1][postal_code]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[areaName3]` is the subdistrict (tambon).
- `[areaName1]` is the province (changwat).
- `[postal_code]` is the postal code.
- Either `[areaName3]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Thailand.

### Output Fields

The following table lists the address fields returned for a candidate located in Thailand.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The province (changwat).

Field Name	Description
areaName2	Not used.
areaName3	The subdistrict (tambon).
areaName4	Not used.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Thailand, the country code is THA.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Thailand does not have any custom output fields.

## Togo (TGO)

This section defines the supported geocoding datasets, operations, and input and output field information for Togo.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Togo.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Togo:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>120, Rue Naboiane <b>Lome</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Togo does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Togo, the country code is TGO. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Togo.

### Output Fields

The following table lists the address fields returned for a candidate located in Togo.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Togo, the country code is TGO.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Togo does not have any custom output fields.

## Trinidad and Tobago (TTO)

This section defines the supported geocoding datasets, operations, and input and output field information for Trinidad and Tobago.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Trinidad and Tobago.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Trinidad and Tobago:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>143A Coffee St  <b>CHAGUANAS 500234</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 6-digit postal code. The first two digits specify a postal district (one of 72), the next two digits a carrier route, and the last two digits a building or zone along that route. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Trinidad and Tobago, the country code is TTO. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area][postal_code]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Trinidad and Tobago.

### Output Fields

The following table lists the address fields returned for a candidate located in Trinidad and Tobago.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 6-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Trinidad and Tobago, the country code is TTO.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Trinidad and Tobago does not have any custom output fields.

## Tunisia (TUN)

This section defines the supported geocoding datasets, operations, and input and output field information for Tunisia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Tunisia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom French	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Tunisia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>25 Rue Hedi Nouira <b>1080 Tunis</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 4-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Tunisia, the country code is TUN. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][postal\_code][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[postal\_code]* is the postal code.

- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Tunisia.

### Output Fields

The following table lists the address fields returned for a candidate located in Tunisia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 4-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Tunisia, the country code is TUN.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.

Field Name	Description
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Tunisia does not have any custom output fields.

## Turkey (TUR)

This section defines the supported geocoding datasets, operations, and input and output field information for Turkey.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Turkey.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Turkish	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Turkey:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Ziya Gökalp Cd No:68 <b>06590 Ankara</b></p>
areaName1	String	Specifies the province. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 5-digit postal code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Turkey, the country code is TUR. Required for forward geocoding.

### Address Guidelines for Turkey

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Turkish addresses, see the Turkey PTT website: <http://www.ptt.gov.tr>.

- **Required fields**—Addresses must contain either a city or a postal code.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output. Examples of typical thoroughfare types and their abbreviations are: Bulvar, Bulvari (boulevard) Cadde, Caddesi, Cd, Cad (avenue, lane) Mahalle, Mahallesi, Mah (neighborhood, quarter) Sokak, Sk, Sokagi (street) Yolu, Yol (way, road) This is not a complete list. Other thoroughfare types are also recognized.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[street_info][address_number][areaName4][postal_code][areaName3]
```

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[areaName4]` is the locality.
- `[postal_code]` is the postal code.
- `[areaName3]` is the city.
- Either `[areaName3]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Turkey.

### Output Fields

The following table lists the address fields returned for a candidate located in Turkey.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The province.
<code>areaName2</code>	The district.

Field Name	Description
areaName3	The city or town.
areaName4	The locality.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Turkey, the country code is TUR.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Turkey does not have any custom output fields.

## Uganda (UGA)

This section defines the supported geocoding datasets, operations, and input and output field information for Uganda.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Uganda.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Uganda:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Sir Apollo Kagga Rd <b>Kampala</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - Uganda does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Uganda, the country code is UGA. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Uganda.

### Output Fields

The following table lists the address fields returned for a candidate located in Uganda.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Uganda, the country code is UGA.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.

Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Uganda does not have any custom output fields.

## Ukraine (UKR)

This section defines the supported geocoding datasets, operations, and input and output field information for Ukraine.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Ukraine.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Ukrainian, English	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Ukraine:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.



Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Novoshchipnyi Ryad Str. 25  <b>65000 Odessa</b></p>
areaName1	String	Specifies the region (oblast). Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 5-digit postal code.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Ukraine, the country code is UKR. Required for forward geocoding.

### Address Guidelines for Ukraine

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Ukrainian addresses, see the Ukrposhta website: [http://www.ukrposhta.com/www/upost\\_en.nsf/](http://www.ukrposhta.com/www/upost_en.nsf/)

- **Required fields**—Addresses must contain a city. UKR does not consider postal codes in addresses.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

**Note:** Postal geocoding is not available with Ukraine.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Ukraine.

### Output Fields

The following table lists the address fields returned for a candidate located in Ukraine.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The region (oblast).
<code>areaName2</code>	The district.
<code>areaName3</code>	The city or town.

Field Name	Description
areaName4	The locality.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Ukraine, the country code is UKR.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Ukraine does not have any custom output fields.

## United Arab Emirates (ARE)

This section defines the supported geocoding datasets, operations, and input and output field information for the United Arab Emirates.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the United Arab Emirates.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic, English	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for the United Arab Emirates:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Sheikh Rashid Bin Saeed St.  <b>Abu Dhabi</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Not used - the United Arab Emirates does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the United Arab Emirates, the country code is ARE. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to the United Arab Emirates.

### Output Fields

The following table lists the address fields returned for a candidate located in the United Arab Emirates.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For the United Arab Emirates, the country code is ARE.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	the United Arab Emirates does not have any custom output fields.

## United States (USA)

This section defines the supported geocoding datasets, operations, and input and output field information for the United States.

The following sections are presented:

- [Supported Geocoding Datasets](#)
- [Supported Operations](#)
- [Input Fields](#)
- [Unsupported Options](#)
- [Custom Options](#)
- [Output Fields](#)
- [Custom Output Fields](#)

### Supported Geocoding Datasets

The following table shows the geocoding levels available.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
Point geocoding datasets	Yes	Yes	Yes	Yes	Yes	Yes*	No

\* This requires the use of an optional point geocoding dataset.

### Street Geocoding Datasets

Street geocoding datasets contain the spatial data necessary to perform address standardization and geocoding. You must install at least one of these geocoding datasets to perform geocoding for USA.

These geocoding datasets use proprietary files called GSD files. For ZIP Code centroid matching, the file us.Z9 contains all the centroid info for all states and normally has a z9 extension.

- **TomTom Streets** — This geocoding dataset provides street segment data by TomTom, a third-party provider of spatial data, and postal data from the U.S. Postal Service.
- **NAVTEQ Streets** — This geocoding dataset provides street segment data by NAVTEQ, a third-party provider of spatial data.

Each geocoding dataset has an optional Statewide Intersections Index. The Statewide Intersection Index is designed to enable fast intersection identification on a statewide basis. For example, the Statewide Intersection Index will allow the geocoding dataset search for "1st & Main St, CO" and



return a list of possible matches in Colorado more quickly than searching the entire geocoding geocoding dataset for each instance of the intersection.

### Point Geocoding Datasets

**Note:** To use a point geocoding dataset, you must also install a street geocoding dataset.

Point geocoding datasets contain data for locating the center of a parcel. These geocoding datasets provides enhanced geocoding accuracy for internet mapping, property and casualty insurance, telecommunications, utilities, and others.

These geocoding datasets are optional, but either Centrus Enhanced Points or Centrus Premium Points is required for Reverse Assessor's Parcel Number (APN) Lookup. These geocoding datasets are also separately licensed.

- **Centrus Points** — This geocoding dataset contains the data necessary to locate the center of a parcel or building. It does not contain Assessor's Parcel Number (APN) or elevation data.
- **Centrus Elevation** — This geocoding dataset contains the same data as Centrus Points, plus elevation data.
- **Centrus Enhanced Points** — This geocoding dataset contains the same data as Centrus Points, plus APN data.
- **Centrus Premium Points** — This geocoding dataset contains the same data as Centrus Points, plus both APN and elevation data.
- **Centrus TomTom Points** — The data in this geocoding dataset is provided by TomTom, a third-party provider of spatial data.
- **NAVTEQ Points**—This database is provided by NAVTEQ, a third-party data provider. It contains data used to locate addresses at the center of the actual building footprint or parcel.
- **Master Location Data** — This geocoding dataset provides the best available address point location for every mailable and deliverable address in the United States.

### Reverse Geocoding Geocoding Dataset

The Reverse Geocoding geocoding dataset contains the data you need to convert a latitude/longitude location to an address.

This geocoding dataset is optional, but is required for reverse geocoding. This geocoding dataset is also separately licensed.

### Custom User Dictionaries

Custom User Dictionaries contain user-defined records. You can use Custom User Dictionaries to provide custom data to use in address matching and geocoding.

### DPV® Geocoding Dataset

The Delivery Point Validation geocoding dataset allows you to check the validity of any individual mailing address in the U.S. The DPV geocoding dataset is distributed as an optional feature and can be installed to enhance the geocoding geocoding dataset's ability to validate mailing addresses. Each time an edition of the geocoding geocoding dataset is released, a corresponding edition of the optional DPV geocoding dataset is released. The date of the DPV geocoding dataset must match

the date of the geocoding dataset for DPV processing to function. DPV lookups may not be performed after the expiration date of the DPV geocoding dataset.

This geocoding dataset is optional, but is required for CASS Certified™ processing. The DPV geocoding dataset is also required to determine ZIP + 4 and ZIP + 4 related output (DPBC, USPS record type, etc.). This geocoding dataset is also separately licensed.

**Note:**

Postal Service licensing prohibits using DPV for the generation of addresses or address lists, and also prohibits the DPV geocoding dataset being exported outside the United States.

### EWS Geocoding Dataset

The Early Warning System (EWS) geocoding dataset contains data that prevents address records from miscoding due to a delay in postal data reaching the U.S. Postal geocoding dataset.

The USPS® refreshes the EWS file on a weekly basis. Unlike the DPV and LACS<sup>Link</sup> geocoding datasets, the EWS geocoding dataset does not need to have the same date as the geocoding dataset. You can download the EWS.zip file free of charge from the CASS section of the USPS® RIBBS website at:

<https://ribbs.usps.gov/index.cfm?page=doclist>

When you download the EWS geocoding dataset, you will receive a file named OUT. You must rename the OUT file to EWS.txt before using it.

### LACS<sup>Link</sup> Geocoding Dataset

The LACS<sup>Link</sup> geocoding dataset allows you to correct addresses that have changed as a result of a rural route address converting to street-style address, a PO Box renumbering, or a street-style address changing.

This geocoding dataset is optional, but is required for CASS Certified™ processing. The LACS<sup>Link</sup> geocoding dataset is also required in CASS mode to receive ZIP + 4 and ZIP + 4 related output (delivery point barcode, USPS record type, etc.).

The date of the LACS<sup>Link</sup> geocoding dataset must match the date of the geocoding dataset for LACS<sup>Link</sup> processing to function.

**Note:** USPS licensing prohibits using LACS<sup>Link</sup> for the generation of addresses or address lists, and also prohibits the LACS<sup>Link</sup> geocoding dataset being exported outside the United States.

### Supported Operations

The following operations are supported for the United States:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

**Note:** Reverse geocoding is currently not available for Guam.

- **Reverse APN Lookup**—Takes an Assessor's Parcel Number (APN), Federal Information Processing Standards (FIPS) county code, and FIPS state code and returns the address of the parcel.

## Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by one of the following tokens: and, &amp;, &amp;&amp;, at, AT, or @.</p> <p><b>Note:</b> The USPS does not consider intersections valid addresses for postal delivery. Therefore, Spectrum™ Technology Platform does not match intersections when processing in CASS mode.</p>
lastLine	String	The last line of the address. Optional. For example: 3001 Summer St. <b>Stamford, CT 06905</b>
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the county. Optional.
areaName3	String	Specifies the town or city. Optional.

Parameter	Type	Description
areaName4	String	Specifies the urbanization (used only for Puerto Rico). Optional.
postalCode	String	ZIP Code. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the United States and its territories: Puerto Rico, American Samoa, Guam, North Mariana Islands, Palau, and Virgin Islands, the country code is USA. Required for forward geocoding.

### City-only Lastline Matching

City-only lastline matching permits address matching with only a city in the input lastline. The city should be provided using either the `mainAddress` (using single-line address input), `LastLine` or `areaName3` input fields.

With city-only lastline input, all of the states are searched in which the input city exists. Therefore, there is the possibility of an increase in multimatches (return of E023 or E030 Match Codes) when matching with city-only input instead of city+state input.

#### Restrictions:

- City-only lastline input matching is not supported in CASS mode.
- City-only lastline is not supported when matching to User Dictionaries.
- When matching using city-only lastline, the `FIND_PREFER_ZIP_OVER_CITY` setting is ignored
- It is strongly recommended to not use city-only lastline matching in Relaxed match mode to avoid the return of false-positive matches.

### Address Range Matching

Some business locations are identified by address ranges. For example, a shopping plaza could be addressed as 10-12 Front St. This is how business mail is typically addressed to such a business location. These address ranges can be geocoded to the interpolated mid-point of the range.

Address ranges are different from hyphenated (dashed) addresses that occur in some metropolitan areas. For example, a hyphenated address in Queens County (New York City) could be 243-20 147 Ave. This represents a single residence (rather than an address range) and is geocoded as a single address. If a hyphenated address returns as an exact match, Spectrum™ Technology Platform does not attempt to obtain an address range match.

Address range matching is not available in Exact or CASS modes, since an address range is not an actual, mailable USPS® address. The following fields are not returned by address range geocoding:

- ZIP + 4® (in multiple segment cases)
- Delivery point
- Check digit

- Carrier route
- Record type
- Multi-unit
- Default flag

Address range matching works within the following guidelines:

- There must be two numbers separated by a hyphen.
- The first number must be lower than the second number.
- Both numbers must be of the same parity (odd or even) unless the address range itself has mixed odd and even addresses.
- Numbers can be on the same street segment or can be on two different segments. The segments do not have to be contiguous.
- If both numbers are on the same street segment, the geocoded point is interpolated to the approximate mid-point of the range.
- If the numbers are on two different segments, the geocoded point is based on the last valid house number of the first segment. The ZIP Code and FIPS Code are based on the first segment.
- In all cases, odd/even parity is evaluated to place the point on the correct side of the street.

### Correct Lastline

When `FIND_CORRECT_LASTLINE` is set to True, the elements of the output lastline are corrected, providing a good ZIP Code or close match on the soundex even if the address did not match or was non-existent. This feature is disabled by default.

The feature works when `FIND_ADDRCODE` is True and the address does not match a candidate or when `FIND_Z_CODE` is True and only lastline information is input.

For example, when `FIND_ADDRCODE = True`

Address: 0 MAIN  
Lastline: BOLDER CA 80301

Returns:

MATCH\_CODE=E622  
LASTLINE=BOULDER, CO 80301  
CITY=BOULDER STATE=CO  
ZIP=80301

For example, `FIND_Z_CODE = True`

Address: Lastline: BOLDER CA 80301

Returns:

MATCH\_CODE=Z6  
LASTLINE=BOULDER, CO 80301  
CITY=BOULDER STATE=CO  
ZIP=80301

When Correct Lastline is enabled, the following elements are corrected:

- **City correction** - The city correction is based on input ZIP Code unless a match to city and state exists in which case both search areas are retained. The input state must be correct or spelled out correctly when no ZIP Code is input. The returned location code and coordinates are based on the output ZIP Code.

- Input city is incorrect:

HAUDENVILLE MA 01039

Returns LASTLINE=HAYDENVILLE, MA 01039 LAT= 42396500 LON= -72689100

- **State correction** - State is abbreviated when spelled out correctly or corrected when a ZIP Code is present. There are some variations of the input state which are recognized, ILL, ILLI, CAL, but not MASS. The US geocoder does not consider the abbreviation of the variation a change, so ILL to IL is not identified as a change in the match code. In addition, the output of the ZIP Code for a single ZIP Code city is not considered a change.

- Input city exists:

Bronx NT, 10451

Returns LASTLINE= BRONX, NY 10451

Bronx NT

Returns LASTLINE= BRONX NT

*No ZIP Code for correction.*

- Input city does not exist - preferred city for ZIP Code returned:

60515

Returns LASTLINE=DOWNERS GROVE, IL 60515

MATCH\_CODE=E622

ILLINOIS 60515 (or ILL 60515 or IL 60515 or ILLI 60515)

Returns LASTLINE=DOWNERS GROVE, IL 60515

MATCH\_CODE=E222

- **ZIP Code correction** - The ZIP Code is corrected only when a valid city/state is identified and has only one ZIP Code.

- Exists on input:

HAUDENVILLE MA 01039

Returns LASTLINE=HAYDENVILLE, MA 01039

- Incorrect on input - ZIP Code correction is not performed, both search areas are retained:

HAUDENVILLE MA 01030

Returns LASTLINE=HAYDENVILLE, MA 01030

*City and ZIP Code do not correspond.*

- Does not exist on input:

DOWNRS GROVE, IL  
Returns LASTLINE=DOWNERS GROVE, IL  
*City with multiple ZIP Codes.*

LILSE IL  
Returns LASTLINE=LISLE, IL 60532  
*City with a single ZIP Code.*

DOWNERS GROVE LL  
Returns LASTLINE=DOWNERS GROVE LL,  
*No ZIP Code for correction.*

DOWNRS GROVE, LL  
Returns LASTLINE=DOWNRS GROVE, LL  
*No ZIP Code for correction.*

LILSE ILLINOIS  
Returns LASTLINE= LISLE, IL 60532  
*Correct spelled out state.*

LISLE ILLINOS  
Returns LASTLINE= LISLE ILLINOS  
*Incorrect spelled out state, no ZIP Code for correction.*

**Note:** For information about the returned match codes, see [Correct Lastline Match Codes](#) on page 737.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

```
[address_number] [street_info] [areaName3] [areaName1] [postal_code]
```

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[areaName3]` is the city.
- `[areaName1]` is the state. Optional.
- `[postal_code]` is the postal code.
- Either `[areaName3]` or `[postal_code]` is required.

## Unsupported Options

- When matching using the `mustMatchFields` settings, the `matchOnAreaName2` and `matchOnAreaName4` options are not supported.

## Custom Options

The following table lists the options that are unique for USA. These custom fields are optional input parameters, and unless otherwise noted, they are available for both Geocoding and Reverse Geocoding. For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
FIND_ADDR_POINT_INTERP	<p>When set to <code>true</code>, enables address point interpolation. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> This feature does not work with point addresses in Auxiliary files.</p>
FIND_ADDRCODE	<p>When set to <code>true</code>, attempts to standardize and find an address geocode. Set this option if you want the address parsed and standardized. If this option is not set, only the input ZIP and ZIP+4 address elements are used. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p>
FIND_ADDRESS_RANGE	<p>When set to <code>true</code>, returns address range information. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> Ignored in CASS and Exact match modes.</p>



Option Name	Description
FIND_ALTERNATE_LOOKUP	<p>Determines whether the preferred lookup is to look for the streets first or the firms first. Default = 3.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> Ignored in CASS match mode.</p> <ol style="list-style-type: none"> <li>1 Prefer street lookup: Matches to the address line, if a match is not made, then matches to the <code>placeName</code> line.</li> <li>2 Prefer firm lookup: Matches to the <code>placeName</code> line, if a match is not made, then matches to the address line.</li> <li>3 Street lookup only: Matches to the address line. Default.</li> </ol>
FIND_CENTERLINE_OFFSET	<p>Offset distance from the street center for a centerline match. Any positive integer, which represents number of feet. Default = 0 feet.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> This feature requires a points dataset is installed.</p>
FIND_CENTERLN_PROJ_OF_POINT	<p>When set to <code>true</code>, computes the closest point on the street from the parcel point. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> This feature requires a points dataset is installed.</p>
FIND_CLOSEST_POINT	<p>When set to <code>true</code>, matches to the nearest point address within the search radius, rather than to the closest feature (e.g. street segment or intersection as well as point addresses). Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in reverse geocoding.</p> <p><b>Note:</b> This feature requires that at least one points dataset and one streets dataset are installed; otherwise, the match will be made to the closest feature.</p>

Option Name	Description
FIND_CORRECT_LASTLINE	<p>When set to <code>true</code>, corrects elements of the output lastline, providing a good ZIP Code or close match on the soundex even if the address would not match or was non-existent. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p>
FIND_DB_ORDER	<p>Allows you to specifically set the order in which User Dictionary and GSD data sets are searched. The default search order is:</p> <ul style="list-style-type: none"> <li>• User Dictionaries</li> <li>• Point GSD files</li> <li>• Street GSD files</li> </ul> <p>Enter a list of geocoding dataset index values [starting at 0, separated by semi-colons] indicating which datasets to search and in what order.</p>
FIND_DPV	<p>When set to <code>true</code>, enables delivery point validation. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p>
FIND_EXPANDED_SEARCH_RADIUS	<p>Allows the setting of the radius in miles (up to 99) around which your record lies. Must be used with applicable <code>FIND_SEARCH_AREA</code> setting. Default radius setting = 25 miles.</p> <p><b>Note:</b> Ignored in CASS match mode.</p>
FIND_EXPND_SRCH_LIM_TO_STATE	<p>When set to <code>true</code>, limits an expanded search to a state's border. Must be used with applicable <code>FIND_SEARCH_AREA</code> setting. Default = <code>true</code>.</p> <p><b>Note:</b> Ignored in CASS match mode.</p>
FIND_FIRST_LETTER_EXPANDED	<p>When set to <code>true</code>, enables extra processing for a bad first letter (missing, wrong, etc.). Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> Ignored in Exact match mode.</p>

Option Name	Description
FIND_LACSLINK	<p>When set to <code>true</code>, enables LACS<sup>Link</sup> lookup. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p>
FIND_MIXED_CASE	<p>When set to <code>true</code>, returns candidate information in mixed case rather than uppercase. Default = <code>false</code>.</p>
FIND_NEAREST_ADDRESS	<p>When set to <code>true</code>, enables matching to addresses interpolated on street segments or to point data locations.</p> <p>You can use <code>FIND_NEAREST_ADDRESS</code> and <code>FIND_NEAREST_INTERSECTION</code> together to specify reverse geocoding to both addresses and intersections.</p> <p>For reverse geocoding, you need to set the reverse geocoding processing find properties: <code>FIND_NEAREST_ADDRESS</code>, <code>FIND_NEAREST_INTERSECTION</code>, and/or <code>FIND_NEAREST_UNRANGED</code>. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in reverse geocoding.</p>
FIND_NEAREST_INTERSECTION	<p>When set to <code>true</code>, enables matching to intersections. You can use <code>FIND_NEAREST_INTERSECTION</code> and <code>FIND_NEAREST_ADDRESS</code> together to specify reverse geocoding to both addresses and intersections.</p> <p>For reverse geocoding, you need to set the reverse geocoding processing find properties: <code>FIND_NEAREST_ADDRESS</code>, <code>FIND_NEAREST_INTERSECTION</code>, and/or <code>FIND_NEAREST_UNRANGED</code>. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in reverse geocoding.</p>
FIND_NEAREST_UNRANGED	<p>When set to <code>true</code>, enables matching a street segment with no number ranges. to intersections. Enabled with <code>FIND_NEAREST_ADDRESS</code>. Ignored for point data and intersection matches.</p> <p><b>Note:</b> Supported only in reverse geocoding.</p>

Option Name	Description
FIND_PREFER_POBOX	<p>When set to <code>true</code>, if both a street address and a PO Box are provided in the input address, the PO Box is used for matching. Default = <code>false</code>.</p> <p>If both <code>FIND_PREFER_POBOX</code> and <code>FIND_PREFER_STREET</code> are set to <code>true</code>, then they are ignored, and the default, <code>FIND_PREFER_STREET</code> is used.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> Ignored in CASS match mode.</p>
FIND_PREFER_STREET	<p>When set to <code>true</code>, if both a street address and a PO Box are provided in the input address, the street address is used for matching. Default = <code>false</code>.</p> <p>If both <code>FIND_PREFER_POBOX</code> and <code>FIND_PREFER_STREET</code> are set to <code>true</code>, then they are ignored, and the default, <code>FIND_PREFER_STREET</code> is used.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> Ignored in CASS match mode.</p>
FIND_PREFER_ZIP_OVER_CITY	<p>When set to <code>true</code>, prefers candidates matching the input ZIP Code over matches to the input city. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> Ignored in CASS and Interactive match modes. Interactive match mode attempts to return the best address regardless of this setting.</p>
FIND_SEARCH_AREA	<p>This option assists in finding a match when the input address contains limited or inaccurate city or ZIP Code information. One of the following options:</p> <ul style="list-style-type: none"> <li>0 Searches the specified city.</li> <li>1 Searches the entire Finance Area for possible streets. Note: This option has no effect when performing a ZIP centroid match.</li> <li>2 Allows the setting of an expanded search area. When selected, you can use two other options to set how far to expand the search: <code>FIND_EXPANDED_SEARCH_RADIUS</code> and <code>FIND_EXPND_SRCH_LIM_TO_STATE</code>.</li> </ul> <p><b>Note:</b> Ignored in CASS match mode.</p>

Option Name	Description
FIND_STREET_CENTROID	<p>When set to <code>true</code>, enables street locator geocoding. When enabled, if an input street address cannot be found using the street number and name, then the input ZIP Code or city/state is searched for the closest match. If the street is located, a geocode is returned along the matched street segment rather than the geocode for the entered ZIP Code or ZIP + 4.</p> <p>When using street locator geocoding, if no exact matching house number is found, a match code of either E029 (no matching range, single street segment found), or E030 (no matching range, multiple street segment) is returned.</p> <p>Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> Ignored in CASS match mode.</p>
FIND_SUITELINK	<p>When set to <code>true</code>, enables Suite<sup>Link</sup> lookup. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p> <p><b>Note:</b> Ignored in Exact match mode.</p>
FIND_Z_CODE	<p>When set to <code>true</code>, attempts to find any ZIP centroid match. Default = <code>true</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p>
FIND_Z5_CODE	<p>When set to <code>true</code>, attempts to find a ZIP centroid match (no ZIP + 4 or ZIP+2). Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p>
FIND_Z7_CODE	<p>When set to <code>true</code>, attempts to find a ZIP+2 centroid match only (no ZIP+4 or ZIP). Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p>
FIND_Z9_CODE	<p>When set to <code>true</code>, attempts to find a ZIP+4 centroid match only. Default = <code>false</code>.</p> <p><b>Note:</b> Supported only in forward geocoding.</p>

Option Name	Description
RETURN_LAT_LON_AS_INTEGER_VALUE	When set to <code>true</code> , returns the <code>LAT</code> and <code>LON</code> custom fields as integer values in millionths of degrees. Default = <code>false</code> , returns the the <code>LAT</code> and <code>LON</code> custom fields as decimal values.

**Note:** Supported only in forward geocoding.

## Output Fields

The following table lists the output fields returned for a candidate located in the USA.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.
<code>areaName2</code>	The county.
<code>areaName3</code>	The town or city.
<code>areaName4</code>	The urbanization (for Puerto Rico only).
<code>postCode1</code>	5-digit ZIP Code.
<code>postCode2</code>	4-digit ZIP Code extension.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For the United States, the country code is USA.
<code>addressNumber</code>	The address number.

Field Name	Description
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	See the following section for the custom field definitions.

## Custom Output Fields

This section lists the unique output fields for USA. Unless otherwise noted, these fields can be returned for both forward and reverse geocoding.

The following categories of output fields are defined:

- **Quality Descriptors**
- **Parsed Address**
- **Point**
- **Centerline**
- **Intersection**
- **Census**
- **Postal**
- **DPV**
- **LACS**<sup>Link</sup>
- **Suite**<sup>Link</sup>
- **Short Address**
- **Segment**
- **Other**

### *Quality Descriptors Output Fields*

The Quality Descriptors output fields provide information about the results of the matching and geocoding processes.

Field Name	Description
MATCH_CODE	Match codes indicate the portions of the address that matched or did not match to the reference file. For descriptions of match codes, see <a href="#">Match Codes</a> on page 731 in the appendix.
LOC_CODE	Location codes indicate the accuracy of the assigned geocode. For descriptions of location codes, see <a href="#">Address Location Codes</a> on page 741 in the appendix.
MM_RESULT_CODE	The MapMarker result code for this candidate. See result codes in <a href="#">Global Result Codes</a> on page 757 in the appendix.

### *Parsed Address Output Fields*

The Parsed Address output fields provide the components of a matched address which have been parsed and standardized by the geocoder.



Field Name	Description
ADDRLINE	The address line for single line input addresses.
CITY	The abbreviated city name from the last line of the input or output address; the value from NAME_CITY or PREF_CITY.
COUNTY_NAME	The county name.
FIRM_NAME	The name of firm from the USPS data or the input firm name. Not applicable to street intersection matches.
HOUSE_NUMBER	The house number of input or output address. Not applicable to street intersection matches.
LAST_LINE	The complete last line of the address.
MAINADDRLINE	The complete first line of the address.
NAME	The street name.
NAME_CITY	The city name for the matched address from the City-State record.
PREF_CITY	The preferred city name for the output ZIP Code of the matched address.
STATE	The state abbreviation.
UNIT_NUMBER	The unit number. Not applicable to street intersection matches.
UNIT_TYPE	The unit type (APT, STE, etc.). Not applicable to street intersection matches.
ZIP	5-digit ZIP Code. Not applicable to street intersection matches.
ZIP4	4-digit ZIP Code extension.
ZIP9	9-digit ZIP Code (ZIP + 4).
ZIP10	10-digit ZIP Code (ZIP + 4) with dash separator.

### Point Output Fields

The Point output fields provide additional information about the geocode resulting from a match using point-level data.

Field Name	Description
APN_ID	The Assessor's Parcel Number Identifier. Not applicable to street intersection matches.
NEAREST_DIST	Gives the distance, in feet, from the input location to the matched street segment, point address, or intersection. <b>Note:</b> For reverse geocoding only.
PARCEN_ELEVATION	The elevation of the geocode at the parcel centroid. Not applicable to street intersection matches.
PB_KEY	A unique address identifier that is returned when an address match is made using the Master Location Dataset. The pbKey™ unique identifier is used as a lookup key to a GeoEnrichment dataset, in order to return attribute data for the match. <b>Note:</b> For forward and reverse geocoding.
POINT_ID	The unique point ID of the matched record when matched to point-level data. Blank if the matched record is not from point-level data. Not applicable to street intersection matches.

### Centerline Output Fields

Centerline matching is used with point-level matching to tie a point-level geocode with its parent street segment. This type of match provides you with additional data about the parent street segment that is not available with only a point-level match. The output information also includes the bearing and distance from the point data geocode to the centerline match.

Field Name	Description
BEARING	For centerline candidates, provides the compass direction, in decimal degrees, from the point data match to the centerline match. Measured clockwise from 0 degrees north.

Field Name	Description
BLOCK_LEFT	For centerline candidates, the Census block ID from the left side of the street. Not applicable to street intersection matches.
BLOCK_RIGHT	For centerline candidates, the Census block ID from the right side of the street. Not applicable to street intersection matches.
BLOCK_SFX_LEFT	For centerline candidates, the current left block suffix for Census 2010 geography. This field will be blank if the matched record is from point-level data.
BLOCK_SFX_RIGHT	For centerline candidates, the current right block suffix for Census 2010 geography. This field will be blank if the matched record is from point-level data.
CENTERLINE_DATATYPE	For centerline candidates, the data type used to make the centerline match. <ul style="list-style-type: none"> <li><b>0</b> USPS</li> <li><b>1</b> TIGER</li> <li><b>2</b> TomTom Streets geocoding dataset</li> <li><b>6</b> NAVTEQ Streets geocoding dataset</li> <li><b>7</b> TomTom Points geocoding dataset</li> <li><b>8</b> Centrus Points geocoding dataset</li> <li><b>9</b> Auxiliary file</li> <li><b>10</b> User Dictionary</li> <li><b>11</b> NAVTEQ Points geocoding dataset</li> <li><b>12</b> Master Location Data</li> </ul>
CENTERLINE_IS_ALIAS	For centerline candidates, returns 'True' if the matched centerline record was located via an alias index.
CENTERLINE_LAT	For centerline candidates, the latitude in millionths.
CENTERLINE_LON	For centerline candidates, the longitude in millionths.
CENTERLINE_NAME	For centerline candidates, the primary street name.
CENTERLINE_NEAREST_DIST	For centerline candidates, gives the distance, in feet, from the point-level match to the centerline match.

Field Name	Description								
CENTERLINE_POSTDIR	For centerline candidates, the street postfix directional. Can be blank, N, S, E, W, NE, NW, SW, or SE.								
CENTERLINE_PREDIR	for centerline candidates, the street prefix directional. Can be blank, N, S, E, W, NE, NW, SW, or SE.								
CENTERLINE_QCITY	For centerline candidates, the state, city, or finance numbers.								
CENTERLINE_ROAD_CLASS	For centerline candidates, the road class code: <table border="0"> <tr> <td><b>0</b></td> <td>Minor road, main data file</td> </tr> <tr> <td><b>1</b></td> <td>Major road, main data file</td> </tr> <tr> <td><b>10</b></td> <td>Minor road, supplemental file</td> </tr> <tr> <td><b>11</b></td> <td>Major road, supplemental data file</td> </tr> </table>	<b>0</b>	Minor road, main data file	<b>1</b>	Major road, main data file	<b>10</b>	Minor road, supplemental file	<b>11</b>	Major road, supplemental data file
<b>0</b>	Minor road, main data file								
<b>1</b>	Major road, main data file								
<b>10</b>	Minor road, supplemental file								
<b>11</b>	Major road, supplemental data file								
CENTERLINE_SEGMENT_DIRECTION	For centerline candidates, gives the direction of the segment: <table border="0"> <tr> <td><b>F</b></td> <td>Numbers are forward.</td> </tr> <tr> <td><b>R</b></td> <td>Numbers are reversed.</td> </tr> </table>	<b>F</b>	Numbers are forward.	<b>R</b>	Numbers are reversed.				
<b>F</b>	Numbers are forward.								
<b>R</b>	Numbers are reversed.								
CENTERLINE_SEG_HIRANGE	For centerline candidates, provides the high house number in the segment.								
CENTERLINE_SEGMENT_PARITY	For centerline candidates, provides the segment parity. The parity indicates which side of the street the odd numbers in the segment are located: <table border="0"> <tr> <td><b>L</b></td> <td>Left side of the street</td> </tr> <tr> <td><b>R</b></td> <td>Right side of the street</td> </tr> <tr> <td><b>B</b></td> <td>Both sides of the street</td> </tr> <tr> <td><b>U</b></td> <td>Unknown</td> </tr> </table>	<b>L</b>	Left side of the street	<b>R</b>	Right side of the street	<b>B</b>	Both sides of the street	<b>U</b>	Unknown
<b>L</b>	Left side of the street								
<b>R</b>	Right side of the street								
<b>B</b>	Both sides of the street								
<b>U</b>	Unknown								
CENTERLINE_SEG_LORANGE	For centerline candidates, provides the low house number in the segment.								
CENTERLINE_SEGMENT_ID	For centerline candidates, the unique segment ID from data vendors.								
CENTERLINE_TYPE	For centerline candidates, provides the street type.								

### *Intersection Output Fields*

The Intersection output fields provide data about the second segment in an intersection match.

Field Name	Description
BLOCK_LEFT2	For intersection matches, the Census block ID from the left side of the street for the second segment in an intersection.
BLOCK_RIGHT2	For intersection matches, the Census block ID from the right side of the street for the second segment in the intersection.
BLOCK_SFX_LEFT2	For intersection matches, the current left block suffix for Census 2010 geography for the second segment in the intersection.
BLOCK_SFX_RIGHT2	For intersection matches, the current right block suffix for Census 2010 geography for the second segment in the intersection.
CBSA_DIVISION_NAME2	For intersection matches, the Core Based Statistical Area (CBSA) division name for the second segment in the intersection.
CBSA_DIVISION_NUMBER2	For intersection matches, the Core Based Statistical Area (CBSA) division number for the second segment in the intersection.
CBSA_NAME2	For intersection matches, the name of the Core Based Statistical Area (CBSA) for the second segment in the intersection.
CBSA_NUMBER2	For intersection matches, the Core Based Statistical Area (CBSA) number for the second segment in the intersection.
COUNTY_NAME2	For intersection matches, the County name for the second segment in the intersection.
COUNTY2	For intersection matches, the county FIPS code for the second segment in the intersection.
CSA_NAME2	For intersections matches, the Combined Statistical Area (CSA) name for the second segment in the intersection.
CSA_NUMBER2	For intersection matches, the Combined Statistical Area (CSA) number for the second segment in the intersection.

Field Name	Description
DATATYPE2	<p>For intersection matches, the type of data used to make the match for the second segment in the intersection.</p> <p><b>0</b> USPS</p> <p><b>1</b> TIGER</p> <p><b>2</b> TomTom Streets geocoding dataset</p> <p><b>6</b> NAVTEQ Streets geocoding dataset</p> <p><b>7</b> TomTom Points geocoding dataset</p> <p><b>8</b> Centrus Points geocoding dataset</p> <p><b>9</b> Auxiliary file</p> <p><b>10</b> User Dictionary</p> <p><b>11</b> NAVTEQ Points geocoding dataset</p> <p><b>12</b> Master Location Data</p>
METRO_FLAG2	<p>Indicates whether the Core Based Statistical Area (CBSA) in which the address is located is a metropolitan area or a micropolitan area. One of the following:</p> <p><b>Y</b> The address is located in a Metropolitan Statistical Area. Metropolitan areas have a population greater than 50,000.</p> <p><b>N</b> The address is not located in a Metropolitan Statistical Area. It is located in a micropolitan area. Micropolitan areas have a population between 10,000 and 49,999.</p> <p><b>Blank</b> Is blank (the county does not contain a CBSA).</p>
NAME2	<p>For intersection matches, the street name for the second segment of the intersection.</p>
POSTDIR2	<p>For intersection matches, the postfix direction of the second street in the intersection. Can be blank, N, S, E, W, NE, NW, SW, or SE.</p>
PREDIR2	<p>For intersection matches, the prefix direction of the second street in the intersection. Can be blank, N, S, E, W, NE, NW, SW, or SE.</p>
ROAD_CLASS2	<p>For intersection matches, the road class code of the second segment in the intersection:</p> <p><b>0</b> Minor road, main data file</p> <p><b>1</b> Major road, main data file</p> <p><b>10</b> Minor road, supplemental file</p> <p><b>11</b> Major road, supplemental data file</p>

Field Name	Description
SEG_HIRANGE2	For intersection matches, provides the high house number of the second segment in the intersection.
SEG_LORANGE2	For intersection matches, provides the low house number of the second segment in the intersection.
SEGMENT_DIRECTION2	For intersection matches, gives the direction of the second segment in the intersection: <b>F</b> Numbers are forward. <b>R</b> Numbers are reversed.
SEGMENT_ID2	For intersection matches, the Segment ID (TLID) or unique ID from premium data vendors for the second segment in the intersection.
SEGMENT_PARITY2	For intersection matches, provides the segment parity for the second segment in the intersection. The parity indicates which side of the street the odd numbers in the segment are located: <b>L</b> Left side of the street <b>R</b> Right side of the street <b>B</b> Both sides of the street <b>U</b> Unknown
TYPE2	For intersection matches, the street type for the second segment in the intersection.

### *Census Output Fields*

Census output fields contain U.S. Census information about the address.

Field Name	Description
BLOCK	<p>15-digit census block ID/census FIPS code, using the syntax <code>sscccttttttgb</code> where:</p> <ul style="list-style-type: none"> <li>• <b>ss</b>—2-digit State FIPS Code</li> <li>• <b>ccc</b>—3-digit County FIPS Code</li> <li>• <b>tttttt</b>—6-digit Census Tract FIPS Code (without period)</li> <li>• <b>g</b>—Single-digit Block FIPS Code</li> <li>• <b>bbb</b>—Block FIPS Code</li> </ul> <p>Not applicable to street intersection matches.</p>
COUNTY	The county FIPS code.
STATE_FIPS	The state FIPS code.

### Postal Output Fields

The Postal output fields contain detailed postal information for the address.

Field Name	Description				
ALT_FLAG	<p>Alternate/base record indicator:</p> <table> <tr> <td><b>A</b></td> <td>Alternate</td> </tr> <tr> <td><b>B</b></td> <td>Base</td> </tr> </table>	<b>A</b>	Alternate	<b>B</b>	Base
<b>A</b>	Alternate				
<b>B</b>	Base				
CART	Carrier route ID. Not applicable to street intersection matches.				
CHECK_DIGIT	The check digit.				
CTYST_KEY	USPS city state key (an alphanumeric value that uniquely identifies a locale in the USPS city state product).				
DFLT	<p>Indicates the return status of <code>HI_RISE_DFLT</code> and <code>R_RTE_DFLT</code>:</p> <table> <tr> <td><b>Y</b></td> <td>Either <code>HI_RISE_DFLT</code> and <code>R_RTE_DFLT</code> returned Y.</td> </tr> <tr> <td><b>Blank</b></td> <td>Both <code>HI_RISE_DFLT</code> and <code>R_RTE_DFLT</code> returned N or <i>Blank</i>.</td> </tr> </table>	<b>Y</b>	Either <code>HI_RISE_DFLT</code> and <code>R_RTE_DFLT</code> returned Y.	<b>Blank</b>	Both <code>HI_RISE_DFLT</code> and <code>R_RTE_DFLT</code> returned N or <i>Blank</i> .
<b>Y</b>	Either <code>HI_RISE_DFLT</code> and <code>R_RTE_DFLT</code> returned Y.				
<b>Blank</b>	Both <code>HI_RISE_DFLT</code> and <code>R_RTE_DFLT</code> returned N or <i>Blank</i> .				
DPBC	Delivery Point Barcode.				



Field Name	Description
EWS_MATCH	<p>Indicates if an EWS match was made:</p> <p><b>Y</b> Match denied because it matched to EWS data.</p> <p><b>Blank</b> Input record did not match to EWS data.</p>
GOVT_FLAG	<p>The government building indicator:</p> <p><b>A</b> City government building</p> <p><b>B</b> Federal government building</p> <p><b>C</b> State government building</p> <p><b>D</b> Firm only</p> <p><b>E</b> City government building and firm only</p> <p><b>F</b> Federal government building and firm only</p> <p><b>G</b> State government building and firm onl</p> <p>A, B, C, E, F, and G are valid for alternate records only (ALT_FLAG=A). D is valid for both base and alternate records.</p>
HI_RISE_DFLT	<p>Indicates if the match was made to a highrise.</p> <p><b>N</b> Matched to an exact highrise record or a street record.</p> <p><b>Y</b> Did not match to an exact record. Matched to the USPS default highrise record or a street record. Check the input address for accuracy and completeness.</p> <p><b>Blank</b> Does not apply to the input address (for example, PO Boxes and General Delivery addresses) or did not find a match.</p>
LOT_CODE	<p>Lot ascending and descending value. Only available for addresses that can be standardized. Blank if running in CASS mode and you have not initialized DPV or the output address does not DPV confirm.</p> <p><b>A</b> Ascending</p> <p><b>D</b> Descending</p>
LOT_NUM	<p>4-digit eLot number. Requires an input address that can be standardized. Blank if running in CASS mode and you have not initialized DPV or the output address does not DPV confirm.</p>
MAIL_STOP	<p>Returns address information appearing after mail stop designator words: MSC, MS, MAILSTOP, MAIL STOP, ATTN, ATTENTION.</p>

Field Name	Description
PMB_DESIGNATOR	PMB designator (always "PMB").
PMB_NUMBER	PMB number.
R_RTE_DFLT	Match indicator for rural routes. <ul style="list-style-type: none"> <li><b>N</b> Matched to an exact rural route record.</li> <li><b>Y</b> Did not find an exact record. Matched to the USPS default rural route record. Check the input address for accuracy and completeness.</li> <li><b>Blank</b> Does not apply to the input address (for example, street addresses, P.O. Boxes, and General Delivery addresses) or no match found.</li> </ul>
URB_NAME	The urbanization name for Puerto Rico.
ZIP_CARTRISORT	Indicates the type of cart sort allowed: <ul style="list-style-type: none"> <li><b>A</b> Automation cart allowed, optional cart merging allowed.</li> <li><b>B</b> Automation cart allowed, optional cart merging not allowed.</li> <li><b>C</b> Automation cart not allowed, optional cart merging allowed.</li> <li><b>D</b> Automation cart not allowed, optional cart merging not allowed.</li> </ul>
ZIP_CLASS	ZIP Classification Code: <ul style="list-style-type: none"> <li><b>Blank</b> Standard ZIP Code</li> <li><b>M</b> Military ZIP Code</li> <li><b>P</b> ZIP Code has P.O. Boxes only</li> <li><b>U</b> Unique ZIP Code. (A unique ZIP Code is a ZIP Code assigned to a company, agency, or entity with sufficient mail volume to receive its own ZIP Code.)</li> </ul>

Field Name	Description
ZIP_FACILITY	Returns the USPS City State Name Facility Code:
<b>A</b>	Airport Mail Facility (AMF)
<b>B</b>	Branch
<b>C</b>	Community Post Office (CPO)
<b>D</b>	Area Distribution Center (ADC)
<b>E</b>	Sectional Center Facility (SCF)
<b>F</b>	Delivery Distribution Center (DDC)
<b>G</b>	General Mail Facility (GMF)
<b>K</b>	Bulk Mail Center (BMC)
<b>M</b>	Money Order Unit
<b>N</b>	Non-Postal Community Name, Former Postal Facility, or Place Name
<b>P</b>	Post Office
<b>S</b>	Station
<b>U</b>	Urbanization

### *DPV Output Fields*

DPV data output fields contain information about a match made using DPV data.

Field Name	Description
DPV_CMRA	Delivery Point Validation CMRA indicator.
<b>Y</b>	Address found in CMRA table.
<b>N</b>	Address not found in CMRA table.
<b>Blank</b>	DPV not loaded.

Field Name	Description
DPV_CONFIRM	<p>Indicates if a match occurred for DPV data.</p> <p><b>N</b> Nothing confirmed.</p> <p><b>Y</b> Everything confirmed (ZIP+4, primary and secondary)</p> <p><b>S</b> ZIP+4 and primary (house number) confirmed.</p> <p><b>D</b> ZIP+4 and primary (house number) confirmed and a default match (<code>HI_RISE_DLT = Y</code>, secondary did not confirm).</p> <p><b>Blank</b> Non-matched input address to USPS ZIP+4 data, or DPV data not loaded.</p>
DPV_FALSE_POS	<p>DPV false-positive indicator.</p> <p><b>Y</b> False-positive match found.</p> <p><b>Blank</b> False-positive match not found.</p>
DPV_FOOTNOTE1	<p>Information about the matched DPV records.</p> <p><b>AA</b> ZIP+4 matched.</p> <p><b>A1</b> Failure to match a ZIP+4.</p> <p><b>Blank</b> Address not presented to hash table or DPV data not loaded.</p>

Field Name	Description
DPV_FOOTNOTE2	<p>Information about the matched DPV records.</p> <p><b>BB</b> All DPV categories matched.</p> <p><b>CC</b> DPV matched primary/house number, where the secondary/unit number did not match (present but invalid).</p> <p><b>M1</b> Missing primary/house number.</p> <p><b>M3</b> Invalid primary/house number.</p> <p><b>N1</b> DPV matched primary/house number, with a missing secondary number.</p> <p><b>P1</b> Missing PS, RR, or HC Box number.</p> <p><b>P3</b> Invalid PS, RR or HC Box number.</p> <p><b>F1</b> All military addresses.</p> <p><b>G1</b> All general delivery addresses.</p> <p><b>U1</b> All unique ZIP Code addresses.</p> <p><b>Blank</b> Address not presented to hash table or DPV data not loaded.</p> <p><b>Note:</b> A unique ZIP Code is a ZIP Code assigned to a company, agency, or entity with sufficient mail volume to receive its own ZIP Code.</p>
DPV_FOOTNOTE3	<p>Information about the matched DPV records.</p> <p><b>R1</b> Matched to CMRA but PMB designator not present.</p> <p><b>R2</b> Matched to CMRA and PMB designator present (PMB 123 or #123).</p> <p><b>Blank</b> Address not presented to hash table or DPV data not loaded.</p>
DPV_NO_STAT	<p><b>Y</b> The address is valid for CDS pre-processing.</p> <p><b>N</b> The address is not valid for CDS pre-processing.</p> <p><b>Blank</b> DPV is not loaded or DPV did not confirm.</p>
DPV_SHUTDOWN	<p><b>Y</b> Address was found in false-positive table.</p> <p><b>N</b> Address was not found in false-positive table.</p> <p><b>Blank</b> Address was not presented to hash table or DPV data not loaded.</p>

Field Name	Description	
DPV_VACANT	<b>Y</b>	The address is vacant.
	<b>N</b>	The address is not vacant.
	<b>Blank</b>	DPV is not loaded or DPV did not confirm (so vacancy is irrelevant).

### LACS<sup>Link</sup> Output Fields

LACS<sup>Link</sup> data output fields contain information about a match made using the LACS<sup>Link</sup> dataset.

Field Name	Description	
LACS_FLAG		Indicates if the address is marked for conversion.
	<b>L</b>	Address marked for LACS conversion.
	<b>Blank</b>	Address not marked for LACS conversion.
LACSLINK_INDICATOR		LACS <sup>Link</sup> indicator.
	<b>Y</b>	Matched LACS <sup>Link</sup> record.
	<b>N</b>	LACS <sup>Link</sup> match NOT found.
	<b>F</b>	False-positive LACS <sup>Link</sup> record.
	<b>S</b>	Secondary information (unit number) removed to make a LACS <sup>Link</sup> match.
	<b>Blank</b>	Not processed through LACS <sup>Link</sup> .
LACSLINK_RETCODE		LACS <sup>Link</sup> return code.
	<b>A</b>	Matched LACS <sup>Link</sup> record.
	<b>00</b>	LACS <sup>Link</sup> match NOT found.
	<b>09</b>	Matched to highrise default, but no LACS <sup>Link</sup> conversion.
	<b>14</b>	Found LACS <sup>Link</sup> match, but no LACS <sup>Link</sup> conversion.
	<b>92</b>	Secondary information (unit number) removed to make a LACS <sup>Link</sup> match.
	<b>Blank</b>	Not processed through LACS <sup>Link</sup> .

Field Name	Description	
LACSLINK_SHUTDOWN	<b>Y</b>	False-positive occurred and LACSLink library shutdown.
	<b>N</b>	LACSLink library has not shutdown or not loaded.

### Suite<sup>Link</sup> Output Fields

The Suite<sup>Link</sup> output fields contain information about a match made using the Suite<sup>Link</sup> dataset.

Field Name	Description	
SUITELINK_RET_CODE	<b>A</b>	Suite <sup>Link</sup> record match.
	<b>00</b>	No Suite <sup>Link</sup> match.
	<b>Blank</b>	This address was not processed through Suite <sup>Link</sup> .

### Short Address Output Fields

The short address output fields contain abbreviated elements of the matched address.

Field Name	Description
ADDRLINE_SHORT	Shortest possible address line that can be constructed from available short street name and other address line components.
CITY_SHORT	<p>The output city name that appears in LASTLINE_SHORT. This value is determined by logic similar to CITY. Whenever possible, this city name is 13 characters or less.</p> <p>This output city name is determined by CASS rules. This can be either City State Name, City State Name Abbreviation, or Preferred Last Line City State Name.</p>
LASTLINE_SHORT	<p>The address last line. Whenever possible, this field is 29 characters or less:</p> <ul style="list-style-type: none"> <li>• 13-character city name</li> <li>• 2 (comma and space)</li> <li>• 2-character state abbreviation</li> <li>• 2 spaces</li> <li>• 10-digit ZIP Code</li> </ul>

Field Name	Description
NAME_SHORT	The short street name used to construct the short address line.  All attempts are made to abbreviate this name according to the process specified by the USPS in the 30 Character Abbreviation - Cycle M Flow Chart. If an abbreviated address cannot be constructed that is 30 characters or less, this field then contains the same street name value as the <code>NAME</code> field return.
POSTDIR_SHORT	Postdir from the <code>ADDRLINE_SHORT</code> field.
PREDIR_SHORT	Predir from the <code>ADDRLINE_SHORT</code> field.
TYPE_SHORT	Postdir from the <code>ADDRLINE_SHORT</code> field.

### Segment Output Fields

Segment output fields contain information on the street segment identified by the data provider.

Field Name	Description
BLOCK_LEFT	Census block ID from the left side of the street. Not applicable to street intersection matches.
BLOCK_RIGHT	Census block ID from the right side of the street. Not applicable to street intersection matches.
BLOCK_SFX_LEFT	The current left block suffix for Census 2010 geography. This field will be blank if the matched record is from point-level data.
BLOCK_SFX_RIGHT	The current right block suffix for Census 2010 geography. This field will be blank if the matched record is from point-level data.



Field Name	Description
DATATYPE	The type of data used to make the match. <b>0</b> USPS <b>1</b> TIGER <b>2</b> TomTom Streets geocoding dataset <b>6</b> NAVTEQ Streets geocoding dataset <b>7</b> TomTom Points geocoding dataset <b>8</b> Centrus Points geocoding dataset <b>9</b> Auxiliary file <b>10</b> User Dictionary <b>11</b> NAVTEQ Points geocoding dataset <b>12</b> Master Location Data
DATATYPE_NAME	The source data vendor for the candidate match.
HIRANGE	House number at the high end of the range. Not applicable to street intersection matches.
HIUNIT	High unit number for the range. Not applicable to street intersection matches.
HIZIP4	High ZIP+4 for the range. Not applicable to street intersection matches.

Field Name	Description
IS_ALIAS	<p>The first character:</p> <p><b>N</b> Normal street match</p> <p><b>A</b> Alias match (including buildings, aliases, firms, etc.)</p> <p>The next 2 characters:</p> <p><b>01</b> Basic index, normal address match</p> <p><b>02</b> USPS street name alias index</p> <p><b>03</b> USPS building index</p> <p><b>05</b> Statewide intersection alias (when using the Usw.gsi, Use.gsi, or Us.gsi file)</p> <p><b>06</b> Spatial data street name alias (when using the Us_pw.gsi, Usw.gsi, Us_pe.gsi, Use.gsi, Us_ps.gsi, Usp.gsi, Us_psw.gsi, or Us_pse.gsi file is required.)</p> <p><b>07</b> Alternate index (when using ZIP9.gsu, ZIP9E.gsu, and ZIP9W.gsu)</p> <p><b>08</b> LACS<sup>Link</sup></p> <p><b>09</b> Unused</p> <p><b>09</b> Auxiliary file match.</p> <p><b>10</b> Centrus Alias index (when using usca.gsi)</p>
LORANGE	House number at the low end of the range. Not applicable to street intersection matches.
LOUNIT	Low unit number. Not applicable to street intersection matches.
LOZIP4	Low ZIP+4 for this range. Not applicable to street intersection matches.
POSTDIR	Postfix direction. Can be blank, N, S, E, W, NE, NW, SW, or SE.
PREDIR	Prefix direction. Can be blank, N, S, E, W, NE, NW, SW, or SE.
QCITY	State, city, or finance numbers.
RANGE_PARITY	<p>Indicates the parity of the house number in the range:</p> <p><b>E</b> Even</p> <p><b>O</b> Odd</p> <p><b>B</b> Both</p>

Field Name	Description
REC_TYPE	<p>The range record type:</p> <p><b>A</b> Auxiliary file</p> <p><b>F</b> Firm</p> <p><b>G</b> General Delivery</p> <p><b>H</b> Highrise</p> <p><b>P</b> Post Office/PO Box</p> <p><b>R</b> Rural Route</p> <p><b>S</b> Street</p> <p><b>T</b> TIGER record match</p> <p><b>U</b> User Dictionary</p> <p>Not applicable to street intersection matches.</p>
ROAD_CLASS	<p>The road class code:</p> <p><b>0</b> Minor road, main data file</p> <p><b>1</b> Major road, main data file</p> <p><b>10</b> Minor road, supplemental file</p> <p><b>11</b> Major road, supplemental data file</p> <p>Not applicable to street intersection matches.</p>
SEG_HIRANGE	Provides the high house number in the segment.
SEG_LORANGE	Provides the low house number in the segment.
SEGMENT_DIRECTION	<p>Gives the direction of the segment:</p> <p><b>F</b> Numbers are forward.</p> <p><b>R</b> Numbers are reversed.</p>
SEGMENT_ID	Segment ID (TLID) or unique ID from premium data vendors. Not applicable to street intersection matches.

Field Name	Description
SEGMENT_PARITY	<p>Provides the segment parity. The parity indicates which side of the street the odd numbers in the segment are located:</p> <p><b>L</b>            Left side of the street</p> <p><b>R</b>            Right side of the street</p> <p><b>B</b>            Both sides of the street</p> <p><b>U</b>            Unknown</p>
STREET_SIDE	<p>The matched address is on the following side of the street:</p> <p><b>L</b>            Left side of the street.</p> <p><b>R</b>            Right side of the street.</p> <p><b>B</b>            Both sides of the street.</p> <p><b>U</b>            Unknown side of the street.</p> <p>This is relative to the segment end points and the segment direction (SEGMENT_DIRECTION).</p>
TYPE	Street type.

### Other Output Fields

The Other output fields contain additional information about the match.

Field Name	Description
AUX_USERDATA	User data from the auxiliary file. Blank if no auxiliary file.
CBSA_DIVISION_NAME	Core Based Statistical Area (CBSA) division name.
CBSA_DIVISION_NUMBER	Core Based Statistical Area (CBSA) division number.
CBSA_NAME	<p>The name of the Core Based Statistical Area (CBSA) in which the address is located.</p> <p>A CBSA is a collective term that refers to both metropolitan and micropolitan areas. A metropolitan area has a population of more than 50,000, and a micropolitan area has a population between 10,000 and 49,999. For more information, see <i>Metropolitan and Micropolitan Statistical Areas</i> section of the U.S. Census Bureau website:<a href="http://www.census.gov/population/www/metroareas/metroarea.html">http://www.census.gov/population/www/metroareas/metroarea.html</a></p>

Field Name	Description
CBSA_NUMBER	Core Based Statistical Area (CBSA) number.
CSA_NAME	Combined Statistical Area (CSA) name.
CSA_NUMBER	Combined Statistical Area (CSA) number.
LAT	The latitude of the address.
LON	The longitude of the address.
MATCHED_DB	Index of geocoding dataset for matched record.
MCD_NAME	Minor Civil Division name from the auxiliary file. Blank if no auxiliary file match.
MCD_NUMBER	Minor Civil Division number from the auxiliary file. Blank if no auxiliary file match.
METRO_FLAG	<p>Indicates whether the Core Based Statistical Area (CBSA) in which the address is located is a metropolitan area or a micropolitan area. One of the following:</p> <p><b>Y</b>      The address is located in a Metropolitan Statistical Area. Metropolitan areas have a population greater than 50,000.</p> <p><b>N</b>      The address is not located in a Metropolitan Statistical Area. It is located in a micropolitan area. Micropolitan areas have a population between 10,000 and 49,999.</p> <p><b>Blank</b>    Is blank (the county does not contain a CBSA).</p>
PERCENT_GEOCODE	<p>Percentage along the street segment to the interpolated match. The range is 0.0 - 100.0. The range is always 0.0 for point data.</p> <p><b>Note:</b> For reverse geocoding only.</p>
RESOLVED_LINE	Indicates which line in a 2-line address was used to resolve the address.

## Uruguay (URY)

This section defines the supported geocoding datasets, operations, and input and output field information for Uruguay.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Uruguay.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Spanish	Yes	Yes	No	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Uruguay:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Juan Manuel Blanes 1000  <b>Montevideo 11100</b></p>
areaName1	String	Specifies the department. Optional.
areaName2	String	Not used.
areaName3	String	Specifies the city or town.
areaName4	String	Specifies the locality. Optional.
postalCode	String	Specifies the 5-digit postal code.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Uruguay, the country code is URY. Required for forward geocoding.

### Address Guidelines for Uruguay

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Uruguayan addresses, see the Uruguay Postal Service website: <http://www.correo.com.uy/index.asp>

- **Required fields**—Addresses must contain a city. URY does not consider postal codes in addresses.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.
- **Common words and abbreviations**—The geocoder recognizes common words, directionals, house number indicators, and abbreviations used in addresses and can geocode these addresses successfully.

**Note:** Postal geocoding is not available with Uruguay.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][postal_code][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[postal_code]` is the postal code.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality.
- Either the `[area]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Uruguay.

### Output Fields

The following table lists the address fields returned for a candidate located in Uruguay.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The department.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.



Field Name	Description
areaName4	The locality.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Uruguay, the country code is URY.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Uruguay does not have any custom output fields.

## Venezuela (VEN)

This section defines the supported geocoding datasets, operations, and input and output field information for Venezuela.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Venezuela.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Spanish	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Venezuela:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>Paseo Meneses  <b>Ciudad Bolivar 8001</b></p>
areaName1	String	Specifies the state. Optional.
areaName2	String	Specifies the region. Optional.
areaName3	String	Specifies the city or town.
areaName4	String	Not used.
postalCode	String	Specifies the 4-digit postal code. The first 2 digits refer to the region, the last two digits indicate the delivery office. Post office box addresses sometimes include a letter after the 4 digits. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Venezuela, the country code is VEN. Required for forward geocoding.

### Address Guidelines for Venezuela

Follow these suggestions to ensure that your input address data is in the best format possible for optimum matching and geocoding. For additional information on Venezuelan addresses, see the IPOSTEL website: <http://www.ipostel.gob.ve/>

- **Required fields**—Addresses must contain a city. House numbers are not available in the data. VEN does not consider postal codes in addresses.
- **Thoroughfare types**—Thoroughfare types and their common abbreviations are recognized and fully supported on input and output.

- **Common words and abbreviations**—The geocoder recognizes common words, directionals, and abbreviations used in addresses and can geocode these addresses successfully.

**Note:** Postal geocoding is not available with Venezuela.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[street_info][address_number][areaName3][postal_code][areaName1]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[address_number]` is optional.
- `[areaName3]` is the city.
- `[postal_code]` is the postal code.
- `[areaName1]` is the state.
- Either `[areaName3]` or `[postal_code]` is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Venezuela.

### Output Fields

The following table lists the address fields returned for a candidate located in Venezuela.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	The state.

Field Name	Description
areaName2	The region.
areaName3	The city or town.
areaName4	Not used.
postCode1	The 4-digit postal code. This may have a letter appended after the digits.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Venezuela, the country code is VEN.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Venezuela does not have any custom output fields.

## Vietnam (VNM)

This section defines the supported geocoding datasets, operations, and input and output field information for Vietnam.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Vietnam.

**Note:** Custom User Dictionaries are supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
NAVTEQ Vietnamese	Yes	Yes	No	Yes	Yes	No	No
TomTom Vietnamese	Yes	Yes	Yes	Yes	Yes	No	No

### Supported Operations

The following operations are supported for Vietnam:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>2 2 Tháng 9 Đà Nẵng</p>
areaName1	String	Specifies the province. Optional.
areaName2	String	Specifies the district. Optional.
areaName3	String	Specifies the precinct, district or town name.
areaName4	String	Not used.
postalCode	String	Vietnam uses a five-digit postal code beginning with a number between 1 and 9. There is typically a space between the first three digits (the outward sorting part of the postcode) and the last two digits (the inward sorting part).
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Vietnam, the country code is VNM. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[street\_info][address\_number][postal\_code][area]*

Where:

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[address\_number]* is optional.
- *[postal\_code]* is the postal code.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

The following table lists the options that are unique for Vietnam. These custom fields are applicable to the Geocoding operation and are optional input parameters. For the standard set of options available to all countries and their definitions, see the chapters covering Geocode Service and Reverse Geocode Service.

Option Name	Description
USE_ADDRESS_POINT_INTERPOLATION	When set to true, enables address point interpolation. Default = false. Supported only in forward geocoding.  <b>Note:</b> The address point interpolation feature requires that you have a point-level geocoding dataset installed.

### Output Fields

The following table lists the address fields returned for a candidate located in Vietnam.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
mainAddressLine	The street address which may include company name, house number, building names and street names.
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	The province.



Field Name	Description
areaName2	The precinct or district.
areaName3	The town or city.
areaName4	Not used.
postCode1	The 5-digit postal code.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For Vietnam, the country code is VNM.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Vietnam does not have any custom output fields.

## World Geocoder (XWG)

This section defines the supported geocoding datasets, operations, and input and output field information for the World Geocoder.

### Supported Data Sets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the World Geocoder.

**Note:** Custom User Dictionaries are not supported.

Data Set	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom, GeoNames, Pitney Bowes World data	Yes	Yes	Yes	No	No	No	No

### Supported Operations

The following operations are supported for the World Geocoder:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.

### Postal Geocoding

The World Geocoder can geocode to a postal centroid if postcode information is available from the country. Postcode information can come from any of the data sources (TomTom, GeoNames, or Pitney Bowes). See [Country Postal Data Coverage](#) on page 707 for a summary of postal data coverage. Depending on the country, postal geocoding may provide more accurate results than geographic geocoding. Postal level geocoding is possible if these conditions are met:

- Your input address consists of a valid postcode.
- The data source contains postcode information for the country. Not every country has postcode data.

### Geographic Geocoding

The World Geocoder can geocode to the centroid of an administrative division (such as town or village). The World Geocoder can geocode to the geographic level if these conditions are met:

- Your input addresses contains accurate geographic information without valid postcode address content in the input. If the address in question includes valid postcode input, then the World Geocoder will attempt postal geocoding.
- The data source contains geographic level information for the country. Geographic information can come from any of the data sources (TomTom, GeoNames, or Pitney Bowes).

### Country Coverage

The World Geocoder has coverage for almost every country in the world. The accuracy and scope of coverage varies depending on the quality of the available data source. Some countries include postcode data, while other countries have geographic coverage only. See the following table for a complete list of Geographic coverage by country. For a complete list of Geographic coverage by country, see [Country Geographic Data Coverage](#) on page 689. For Postal coverage by country, see [Country Postal Data Coverage](#) on page 707

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.  <b>Note:</b> Information provided in this field will be ignored by the World Geocoder.
mainAddress	String	<b>Single Line Input</b> —If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.  <b>Street Address</b> —If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.  <b>Street Intersection Input</b> —To enter an intersection, specify the two street names separated by a double ampersand (&&).  <b>Note:</b> Information provided in this field will be ignored by the World Geocoder.
lastLine	String	The last line of the address. Optional. For example:  2 Manchester Rd <b>Harare</b>

Parameter	Type	Description
areaName1	String	<p>The name of one of the following depending on the country:</p> <ul style="list-style-type: none"> <li>• <b>Not used</b>—BEL, CHE, DNK, IRL, LIE, LUX, NLD, NOR, SGP</li> <li>• <b>Bundesland</b>—DEU</li> <li>• <b>Province</b>—CAN</li> <li>• <b>Province (changwat)</b>—THA</li> <li>• <b>Province (voivodship)</b>—POL</li> <li>• <b>Region</b>—AUT, ESP, FRA, GBR, NZL, PRT</li> <li>• <b>Region (län)</b>—FIN</li> <li>• <b>Region (lan)</b>—SWE</li> <li>• <b>State</b>—AUS, BRA</li> <li>• <b>State (negeri)</b>—MYS</li> </ul>
areaName2	String	<p>The name of one of the following depending on the country:</p> <ul style="list-style-type: none"> <li>• <b>Not used</b>—AUT, BRA, CAN, FIN, GBR, MYS, PRT, SGP.</li> <li>• <b>Department</b>—FRA</li> <li>• <b>District (amphoe)</b>—THA</li> <li>• <b>District (fylke/counties)</b>—NOR</li> <li>• <b>District (powiat)</b>—POL</li> <li>• <b>Kommun</b>—SWE</li> <li>• <b>Kreis</b>—DEU</li> <li>• <b>Local Government Authority (LGA)</b>—AUS</li> <li>• <b>Province</b>—BEL, CHE, DNK, ESP, IRL, ITA, LIE, LUX, NLD</li> <li>• <b>Region</b>—NZL</li> </ul>
areaName3	String	<p>Specifies the city or town name. Your input address should use the official city name. This will produce the best geocoding results.</p> <p>For Thailand, this field contains the subdistrict (tambon).</p>
areaName4	String	<p>The name of one of the following depending on the country:</p> <ul style="list-style-type: none"> <li>• <b>Not used</b>—AUS, AUT, BEL, CHE, DEU, DNK, FIN, FRA, IRL, LIE, LUX, MYS, NLD, NOR, POL, SGP, SWE, THA</li> <li>• <b>Dissemination Area and Enumeration Area (DA and EA)</b>—CAN</li> <li>• <b>Locality</b>—BRA, GBR, ITA, PRT</li> <li>• <b>Suburb</b>—NZL</li> </ul>
postalCode	String	The postal code in the appropriate format for the country.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the World Geocoder, the country code is XWG. Required for forward geocoding.

### Address Guidelines for the World Geocoder

Follow these suggestions to ensure that your street input data is in the best format possible for optimum matching and geocoding.

- **Address Aliases** — Some countries have alternative administrative names. For example, there may be an official name for a city or town, but there may also be common but unofficial alternative name for the same city or town. If alias information is available in the source data, World includes this alias in the database. This enables World to geocode successfully when alternative names are used in input addresses.
- **Language Aliases** — Some countries have more than one official or prominent language. For example, the same town may be commonly known by both German and Italian names. If language alias information is available in the source data, World uses this in the database. This enables World to geocode successfully when alternative language names are used in input addresses.
- **State or Province Abbreviations** — In some countries, the state or province is an important part of the address and often this address element is abbreviated. For selected countries, these state/province abbreviations are recognized by World. For example, in the United States each state has a two-letter abbreviation (such as CA for California). Similarly, Netherlands, state abbreviations (such as GLD for Gelderland) are recognized.

The World Geocoder accepts state/province abbreviations for the following countries:

- Australia (AUS)
- Canada (CAN)
- Italy (ITA)
- Mexico (MEX)
- Netherlands (NLD)
- United States (USA)

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered in the typical order for the country. Some examples of common address element ordering is as follows:

`[address_number][street_info][postal_code][area]`

`[address_number][street_info][area][postal_code]`

`[street_info][address_number][area][postal_code]`

`[street_info][address_number][postal_code][area]`

`[street_info][address_number][area]`

`[address_number][street_info][area]`

Where:

- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.

- *[address\_number]* is optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- *[postal\_code]* is the postal code.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no custom options for the XWG geocoder.

### Output Fields

The following table lists the address fields returned for a candidate located by the World Geocoder.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.

Field Name	Description
areaName1	<p>The meaning varies by country:</p> <ul style="list-style-type: none"><li>• AUS—State</li><li>• AUT—Region</li><li>• BEL—Not used</li><li>• BRA—State</li><li>• CAN—Province</li><li>• CHE—State</li><li>• DEU—Bundesland</li><li>• DNK—Not used</li><li>• ESP—Region</li><li>• FIN—Region (län)</li><li>• FRA—Region</li><li>• GBR—Region</li><li>• IRL—Not used</li><li>• ITA—Region</li><li>• LIE—State</li><li>• LUX—Not used</li><li>• MYS—State (negeri)</li><li>• NLD—Not used</li><li>• NOR—Not used</li><li>• NZL—Region</li><li>• POL—Province (voivodship)</li><li>• PRT—Region</li><li>• SGP—Not used</li><li>• SWE—Region (lan)</li><li>• THA—Province (changwat)</li></ul>

Field Name	Description
areaName2	<p>This field contains an area that is smaller than a state/province but larger than a city. The specific area varies by country:</p> <ul style="list-style-type: none"> <li>• AUS—Local Government Authority (LGA)</li> <li>• AUT—Province</li> <li>• BEL—Province</li> <li>• BHS—Not used</li> <li>• BRA—Not used</li> <li>• CAN—Not used</li> <li>• CHE—Province</li> <li>• DEU—Kreis</li> <li>• DNK—Province</li> <li>• FIN—Province (kommune)</li> <li>• FRA—Department</li> <li>• GBR—County</li> <li>• ITA—Province</li> <li>• LIE—Province</li> <li>• LUX—Province</li> <li>• MYS—District (daerah)</li> <li>• NLD—Province</li> <li>• NZL—Not used</li> <li>• POL—District (powiat)</li> <li>• PRT—Not used</li> <li>• SGP—District</li> <li>• SWE—Region (kommun)</li> <li>• THA—District (amphoe)</li> </ul>
areaName3	The city or town.
areaName4	<p>The meaning varies by country:</p> <ul style="list-style-type: none"> <li>• <b>Not used</b>—AUS, AUT, BEL, CHE, DEU, DNK, FIN, FRA, IRL, LIE, LUX, MYS, NLD, NOR, POL, SGP, SWE, THA</li> <li>• <b>Dissemination Area and Enumeration Area (DA and EA)</b>—CAN</li> <li>• <b>Locality</b>—BRA, GBR, ITA, PRT</li> <li>• <b>Suburb</b>—NZL</li> </ul>
postCode1	The postal code for the address. The format of the postal code varies by country.
postCode2	The postal code extension, if applicable to the country.
country	The three-letter ISO 3166-1 Alpha-3 country code. For the World Geocoder, the country code is XWG.



Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The World Geocoder custom output fields are listed in the following section.

### Custom Output Fields

The following table lists the output fields that are unique for the XWG geocoder.

Name	Description
CITYRANK	This option returns the city ranking from 1 (highest) to 10 (lowest). Zero (0) means that a rank was not available.

### Country Geographic Data Coverage

The following table provides a list of the countries that have geographic data coverage.

Country Name	ISO 3166 Country Code	Data Source
Afghanistan	AFG	GeoNames
Aland Islands	ALA	GeoNames
Albania	ALB	TomTom
Algeria	DZA	GeoNames
American Samoa	ASM	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Andorra	AND	TomTom
Angola	AGO	TomTom
Anguilla	AIA	GeoNames
Antarctica	ATA	GeoNames
Antigua and Barbuda	ATG	GeoNames
Argentina	ARG	TomTom
Armenia	ARM	GeoNames
Aruba	ABW	GeoNames
Australia	AUS	GeoNames
Austria	AUT	TomTom
Azerbaijan	AZE	GeoNames
Bahamas	BHS	GeoNames
Bahrain	BHR	TomTom
Bangladesh	BGD	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Barbados	BRB	GeoNames
Belarus	BLR	TomTom
Belgium	BEL	TomTom
Belize	BLZ	GeoNames
Benin	BEN	TomTom
Bermuda	BMU	GeoNames
Bhutan	BTN	GeoNames
Bolivia	BOL	GeoNames
Bonaire, Sint Eustatius and Saba	BES	GeoNames
Bosnia and Herzegovina	BIH	TomTom
Botswana	BWA	TomTom
Bouvet Island	BVT	GeoNames
Brazil	BRA	TomTom
British Indian Ocean Territory	IOT	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Brunei Darussalam	BRN	TomTom
Bulgaria	BGR	TomTom
Burkina Faso	BFA	TomTom
Burundi	BDI	GeoNames
Cambodia	KHM	GeoNames
Cameroon	CMR	TomTom
Canada	CAN	TomTom
Cape Verde	CPV	GeoNames
Cayman Islands	CYM	GeoNames
Central African Republic	CAF	GeoNames
Chad	TCD	GeoNames
Chile	CHL	TomTom
China	CHN	GeoNames
Christmas Island	CXR	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Cocos (Keeling) Islands	CCK	GeoNames
Colombia	COL	GeoNames
Comoros	COM	GeoNames
Congo	COG	TomTom
Congo, Democratic Republic of the	COD	TomTom
Cook Islands	COK	GeoNames
Costa Rica	CRI	GeoNames
Cote d'Ivoire	CIV	GeoNames
Croatia (local name: Hrvatska)	HRV	TomTom
Cuba	CUB	GeoNames
Curaçao	CUW	GeoNames
Cyprus	CYP	GeoNames
Czech Republic	CZE	TomTom
Denmark	DNK	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Djibouti	DJI	GeoNames
Dominica	DMA	GeoNames
Dominican Republic	DOM	GeoNames
Ecuador	ECU	GeoNames
Egypt	EGY	TomTom
El Salvador	SLV	GeoNames
Equatorial Guinea	GNQ	GeoNames
Eritrea	ERI	GeoNames
Estonia	EST	TomTom
Ethiopia	ETH	GeoNames
Falkland Islands (Malvinas)	FLK	GeoNames
Faroe Islands	FRO	GeoNames
Fiji	FJI	GeoNames
Finland	FIN	TomTom

Country Name	ISO 3166 Country Code	Data Source
France	FRA	TomTom
French Guiana	GUF	TomTom
French Polynesia	PYF	GeoNames
French Southern Territories	ATF	GeoNames
Gabon	GAB	TomTom
Gambia	GMB	GeoNames
Georgia	GEO	GeoNames
Germany	DEU	TomTom
Ghana	GHA	TomTom
Gibraltar	GIB	GeoNames
Greece	GRC	TomTom
Greenland	GRL	GeoNames
Grenada	GRD	GeoNames
Guadeloupe	GLP	TomTom

Country Name	ISO 3166 Country Code	Data Source
Guam	GUM	GeoNames
Guatemala	GTM	GeoNames
Guernsey	GGY	GeoNames
Guinea	GIN	GeoNames
Guinea-Bissau	GNB	GeoNames
Guyana	GUY	GeoNames
Haiti	HTI	GeoNames
Heard and McDonald Islands	HMD	GeoNames
Honduras	HND	GeoNames
Hong Kong	HKG	TomTom
Hungary	HUN	TomTom
Iceland	ISL	GeoNames
India	IND	GeoNames
Indonesia	IDN	TomTom



Country Name	ISO 3166 Country Code	Data Source
Iran (Islamic Republic of)	IRN	GeoNames
Iraq	IRQ	GeoNames
Ireland	IRL	TomTom
Isle of Man	IMN	GeoNames
Israel	ISR	GeoNames
Italy	ITA	TomTom
Jamaica	JAM	GeoNames
Japan	JPN	GeoNames
Jersey	JEY	GeoNames
Jordan	JOR	GeoNames
Kazakhstan	KAZ	GeoNames
Kenya	KEN	TomTom
Kiribati	KIR	GeoNames
Korea, Democratic People's Republic of	PRK	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Korea, Republic of	KOR	GeoNames
Kuwait	KWT	TomTom
Kyrgyzstan	KGZ	GeoNames
Lao People's Democratic Republic	LAO	GeoNames
Latvia	LVA	TomTom
Lebanon	LBN	GeoNames
Lesotho	LSO	TomTom
Liberia	LBR	GeoNames
Libyan Arab Jamahiriya	LBY	GeoNames
Liechtenstein	LIE	GeoNames
Lithuania	LTU	TomTom
Luxembourg	LUX	TomTom
Macao	MAC	TomTom
Macedonia, the former Yugoslav Republic of	MKD	TomTom

Country Name	ISO 3166 Country Code	Data Source
Madagascar	MDG	GeoNames
Malawi	MWI	TomTom
Malaysia	MYS	TomTom
Maldives	MDV	GeoNames
Mali	MLI	TomTom
Malta	MLT	TomTom
Marshall Islands	MHL	GeoNames
Martinique	MTQ	GeoNames
Mauritania	MRT	TomTom
Mauritius	MUS	TomTom
Mayotte	MYT	GeoNames
Mexico	MEX	TomTom
Micronesia, Federated States of	FSM	GeoNames
Moldova, Republic of	MDA	TomTom

Country Name	ISO 3166 Country Code	Data Source
Monaco	MCO	GeoNames
Mongolia	MNG	GeoNames
Montenegro	MNE	TomTom
Montserrat	MSR	GeoNames
Morocco	MAR	TomTom
Mozambique	MOZ	TomTom
Myanmar	MMR	GeoNames
Namibia	NAM	GeoNames
Nauru	NRU	GeoNames
Nepal	NPL	GeoNames
Netherlands	NLD	TomTom
Netherlands Antilles	ANT	Pitney Bowes
New Caledonia	NCL	GeoNames
New Zealand	NZL	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Nicaragua	NIC	GeoNames
Niger	NER	TomTom
Nigeria	NGA	TomTom
Niue	NIU	GeoNames
Norfolk Island	NFK	GeoNames
Northern Mariana Islands	MNP	GeoNames
Norway	NOR	TomTom
Oman	OMN	TomTom
Pakistan	PAK	GeoNames
Palau	PLW	GeoNames
Palestinian Territory, occupied	PSE	GeoNames
Panama	PAN	GeoNames
Papua New Guinea	PNG	GeoNames
Paraguay	PRY	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Peru	PER	GeoNames
Philippines	PHL	TomTom
Pitcairn	PCN	GeoNames
Poland	POL	TomTom
Portugal	PRT	TomTom
Puerto Rico	PRI	GeoNames
Qatar	QAT	TomTom
Reunion	REU	TomTom
Romania	ROU	TomTom
Russian Federation	RUS	TomTom
Rwanda	RWA	GeoNames
Saint Barthélemy	BLM	GeoNames
Saint Helena, Ascension and Tristan Da Cunha	SHN	GeoNames
Saint Kitts and Nevis	KNA	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Saint Lucia	LCA	GeoNames
Saint Martin (French part)	MAF	GeoNames
Saint Pierre and Miquelon	SPM	GeoNames
Saint Vincent and the Grenadines	VCT	GeoNames
Samoa	WSM	GeoNames
San Marino	SMR	TomTom
Sao Tome and Principe	STP	GeoNames
Saudi Arabia	SAU	TomTom
Senegal	SEN	TomTom
Serbia	SRB	TomTom
Seychelles	SYC	GeoNames
Sierra Leone	SLE	GeoNames
Singapore	SGP	TomTom
Sint Maarten (Dutch part)	SXM	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Slovakia (Slovak Republic)	SVK	TomTom
Slovenia	SVN	TomTom
Solomon Islands	SLB	GeoNames
Somalia	SOM	GeoNames
South Africa	ZAF	GeoNames
South Georgia and the South Sandwich Islands	SGS	GeoNames
Spain	ESP	TomTom
Sri Lanka	LKA	GeoNames
Sudan	SDN	GeoNames
Suriname	SUR	GeoNames
Svalbard and Jan Mayen Islands	SJM	GeoNames
Swaziland	SWZ	TomTom
Sweden	SWE	TomTom
Switzerland	CHE	TomTom



Country Name	ISO 3166 Country Code	Data Source
Syrian Arab Republic	SYR	GeoNames
Taiwan	TWN	TomTom
Tajikistan	TJK	GeoNames
Tanzania, United Republic of	TZA	TomTom
Thailand	THA	TomTom
Timor-Leste	TLS	GeoNames
Togo	TGO	TomTom
Tokelau	TKL	GeoNames
Tonga	TON	GeoNames
Trinidad and Tobago	TTO	GeoNames
Tunisia	TUN	GeoNames
Turkey	TUR	TomTom
Turkmenistan	TKM	GeoNames
Turks and Caicos Islands	TCA	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Tuvalu	TUV	GeoNames
Uganda	UGA	TomTom
Ukraine	UKR	TomTom
United Arab Emirates	ARE	TomTom
United Kingdom	GBR	TomTom
United States	USA	GeoNames
United States Minor Outlying Islands	UMI	GeoNames
Uruguay	URY	TomTom
Uzbekistan	UZB	GeoNames
Vanuatu	VUT	GeoNames
Vatican City State (Holy See)	VAT	GeoNames
Venezuela	VEN	GeoNames
Vietnam	VNM	GeoNames
Virgin Islands (British)	VGB	GeoNames

Country Name	ISO 3166 Country Code	Data Source
Virgin Islands (U.S.)	VIR	GeoNames
Wallis and Futuna Islands	WLF	GeoNames
Western Sahara	ESH	GeoNames
Yemen	YEM	GeoNames
Zambia	ZMB	TomTom
Zimbabwe	ZWE	GeoNames

### Country Postal Data Coverage

The following table provides a list of the countries that have postal data coverage.

Country Name	ISO 3166 Country Code	Data Source
ALGERIA	DZA	Pitney Bowes
AMERICAN SAMOA	ASM	GeoNames
ANDORRA	AND	TomTom
ARGENTINA	ARG	GeoNames
ARMENIA	ARM	Pitney Bowes
AUSTRALIA	AUS	GeoNames

Country Name	ISO 3166 Country Code	Data Source
AUSTRIA	AUT	TomTom
AZERBAIJAN	AZE	Pitney Bowes
BAHRAIN	BHR	Pitney Bowes
BANGLADESH	BGD	GeoNames
BELARUS	BLR	Pitney Bowes
BELGIUM	BEL	TomTom
BERMUDA	BMU	Pitney Bowes
BOSNIA AND HERZEGOVINA	BIH	Pitney Bowes
BRAZIL	BRA	TomTom
BRITISH INDIAN OCEAN TERRITORY	IOT	Pitney Bowes
BRUNEI DARUSSALAM	BRN	Pitney Bowes
BULGARIA	BGR	GeoNames
CAMBODIA	KHM	Pitney Bowes
CANADA	CAN	TomTom

Country Name	ISO 3166 Country Code	Data Source
CAPE VERDE	CPV	Pitney Bowes
CHILE	CHL	Pitney Bowes
CHINA	CHN	Pitney Bowes
CHRISTMAS ISLAND	CXR	Pitney Bowes
COCOS (KEELING) ISLANDS	CCK	Pitney Bowes
COSTA RICA	CRI	Pitney Bowes
CROATIA (LOCAL NAME: HRVATSKA)	HRV	GeoNames
CUBA	CUB	Pitney Bowes
CYPRUS	CYP	Pitney Bowes
CZECH REPUBLIC	CZE	TomTom
DENMARK	DNK	GeoNames
DOMINICAN REPUBLIC	DOM	GeoNames
ECUADOR	ECU	Pitney Bowes
EGYPT	EGY	Pitney Bowes

Country Name	ISO 3166 Country Code	Data Source
EL SALVADOR	SLV	Pitney Bowes
ESTONIA	EST	TomTom
ETHIOPIA	ETH	Pitney Bowes
FALKLAND ISLANDS (MALVINAS)	FLK	Pitney Bowes
FAROE ISLANDS	FRO	GeoNames
FINLAND	FIN	TomTom
FRANCE	FRA	TomTom
FRENCH GUIANA	GUF	GeoNames
FRENCH POLYNESIA	PYF	Pitney Bowes
GEORGIA	GEO	Pitney Bowes
GERMANY	DEU	TomTom
GREECE	GRC	TomTom
GREENLAND	GRL	GeoNames
GUADELOUPE	GLP	GeoNames

Country Name	ISO 3166 Country Code	Data Source
GUAM	GUM	GeoNames
GUATEMALA	GTM	GeoNames
GUERNSEY	GGY	GeoNames
GUINEA	GIN	Pitney Bowes
GUINEA-BISSAU	GNB	Pitney Bowes
HAITI	HTI	Pitney Bowes
HONDURAS	HND	Pitney Bowes
HUNGARY	HUN	GeoNames
ICELAND	ISL	GeoNames
INDIA	IND	GeoNames
INDONESIA	IDN	TomTom
IRAN (ISLAMIC REPUBLIC OF)	IRN	Pitney Bowes
IRAQ	IRQ	Pitney Bowes
IRELAND	IRL	Pitney Bowes

Country Name	ISO 3166 Country Code	Data Source
ISLE OF MAN	IMN	GeoNames
ISRAEL	ISR	Pitney Bowes
ITALY	ITA	TomTom
JAMAICA	JAM	Pitney Bowes
JAPAN	JPN	GeoNames
JERSEY	JEY	GeoNames
JORDAN	JOR	Pitney Bowes
KAZAKHSTAN	KAZ	Pitney Bowes
KENYA	KEN	Pitney Bowes
KOREA, REPUBLIC OF	KOR	Pitney Bowes
KUWAIT	KWT	Pitney Bowes
KYRGYZSTAN	KGZ	Pitney Bowes
LAO PEOPLE'S DEMOCRATIC REPUBLIC	LAO	Pitney Bowes
LATVIA	LVA	TomTom



Country Name	ISO 3166 Country Code	Data Source
LEBANON	LBN	Pitney Bowes
LESOTHO	LSO	Pitney Bowes
LIBERIA	LBR	Pitney Bowes
LIECHTENSTEIN	LIE	GeoNames
LITHUANIA	LTU	TomTom
LUXEMBOURG	LUX	GeoNames
MACEDONIA, THE FORMER YUGOSLAV REPUBLIC OF	MKD	GeoNames
MADAGASCAR	MDG	Pitney Bowes
MALAYSIA	MYS	GeoNames
MALDIVES	MDV	Pitney Bowes
MALTA	MLT	Pitney Bowes
MARSHALL ISLANDS	MHL	GeoNames
MARTINIQUE	MTQ	GeoNames
MAYOTTE	MYT	GeoNames

Country Name	ISO 3166 Country Code	Data Source
MEXICO	MEX	TomTom
MICRONESIA, FEDERATED STATES OF	FSM	Pitney Bowes
MOLDOVA, REPUBLIC OF	MDA	GeoNames
MONACO	MCO	GeoNames
MONGOLIA	MNG	Pitney Bowes
MOROCCO	MAR	TomTom
MOZAMBIQUE	MOZ	Pitney Bowes
MYANMAR	MMR	Pitney Bowes
NEPAL	NPL	Pitney Bowes
NETHERLANDS	NLD	TomTom
NEW CALEDONIA	NCL	Pitney Bowes
NEW ZEALAND	NZL	GeoNames
NICARAGUA	NIC	Pitney Bowes
NIGER	NER	Pitney Bowes

Country Name	ISO 3166 Country Code	Data Source
NIGERIA	NGA	Pitney Bowes
NORFOLK ISLAND	NFK	Pitney Bowes
NORTHERN MARIANA ISLANDS	MNP	GeoNames
NORWAY	NOR	TomTom
OMAN	OMN	Pitney Bowes
PAKISTAN	PAK	GeoNames
PALAU	PLW	Pitney Bowes
PAPUA NEW GUINEA	PNG	Pitney Bowes
PARAGUAY	PRY	Pitney Bowes
PHILIPPINES	PHL	GeoNames
PITCAIRN	PCN	Pitney Bowes
POLAND	POL	TomTom
PORTUGAL	PRT	TomTom
PUERTO RICO	PRI	GeoNames

Country Name	ISO 3166 Country Code	Data Source
REUNION	REU	GeoNames
ROMANIA	ROU	Pitney Bowes
RUSSIAN FEDERATION	RUS	TomTom
SAINT HELENA, ASCENSION AND TRISTAN DA CUNHA	SHN	Pitney Bowes
SAINT PIERRE AND MIQUELON	SPM	GeoNames
SAN MARINO	SMR	TomTom
SAUDI ARABIA	SAU	Pitney Bowes
SENEGAL	SEN	Pitney Bowes
SINGAPORE	SGP	TomTom
SLOVAKIA (SLOVAK REPUBLIC)	SVK	TomTom
SLOVENIA	SVN	TomTom
SOUTH AFRICA	ZAF	GeoNames
SOUTH GEORGIA AND THE SOUTH SANDWICH ISLANDS	SGS	Pitney Bowes
SPAIN	ESP	TomTom

Country Name	ISO 3166 Country Code	Data Source
SRI LANKA	LKA	GeoNames
SUDAN	SDN	Pitney Bowes
SWAZILAND	SWZ	Pitney Bowes
SWEDEN	SWE	GeoNames
SWITZERLAND	CHE	TomTom
TAIWAN	TWN	TomTom
TAJIKISTAN	TJK	Pitney Bowes
THAILAND	THA	TomTom
TIMOR-LESTE	TLS	Pitney Bowes
TUNISIA	TUN	Pitney Bowes
TURKEY	TUR	TomTom
TURKMENISTAN	TKM	Pitney Bowes
TURKS AND CAICOS ISLANDS	TCA	Pitney Bowes
UKRAINE	UKR	Pitney Bowes

Country Name	ISO 3166 Country Code	Data Source
UNITED ARAB EMIRATES	ARE	Pitney Bowes
UNITED KINGDOM	GBR	TomTom
UNITED STATES	USA	TomTom
URUGUAY	URY	Pitney Bowes
UZBEKISTAN	UZB	Pitney Bowes
VATICAN CITY STATE (HOLY SEE)	VAT	TomTom
VENEZUELA	VEN	Pitney Bowes
VIET NAM	VNM	Pitney Bowes
VIRGIN ISLANDS (U.S.)	VIR	GeoNames
WALLIS AND FUTUNA ISLANDS	WLF	Pitney Bowes
WESTERN SAHARA	ESH	Pitney Bowes
ZAMBIA	ZMB	Pitney Bowes

## Republic of Yemen (YEM)

This section defines the supported geocoding datasets, operations, and input and output field information for the Republic of Yemen.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for the Republic of Yemen.

**Note:** Custom User Dictionaries are not supported.

	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom Arabic, English	Yes	Yes	Yes	Yes	No	No	No

### Supported Operations

The following operations are supported for the Republic of Yemen:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the lastLine field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>

Parameter	Type	Description
lastLine	String	The last line of the address. Optional. For example: 15, Hadah Street <b>Sana'a</b>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city, town or locality. Optional.
areaName4	String	Not used.
postalCode	String	Not used - the Republic of Yemen does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Yemen, the country code is YEM. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][area]`

Where:

- `[address_number]` is optional.
- `[street_info]` consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- `[area]` is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to the Republic of Yemen.

### Output Fields

The following table lists the address fields returned for a candidate located in the Republic of Yemen.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.



Field Name	Description
mainAddressLine	The street address which may include company name, house number, building names and street names.
addressLastLine	The last line of the address.
placeName	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
areaName1	Not used.
areaName2	Not used.
areaName3	The city, town or locality.
areaName4	Not used.
postCode1	Not used.
postCode2	Not used.
country	The three-letter ISO 3166-1 Alpha-3 country code. For the Republic of Yemen, the country code is YEM.
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	The Republic of Yemen does not have any custom output fields.

## Zambia (ZMB)

This section defines the supported geocoding datasets, operations, and input and output field information for Zambia.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Zambia.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Zambia:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>25 Chisokone Rd.  <b>10101 Ndola</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Optional.
areaName4	String	Not used.
postalCode	String	Specifies the 5-digit postal code. The first two digits indicate the routing province, the third the routing area, the fourth the delivery area and the final digit indicates the method of delivery. Optional.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Zambia, the country code is ZMB. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

`[address_number][street_info][postal_code][area]`

Where:

- `[address_number]` is optional.

- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[postal\_code]* is the postal code.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality.
- Either the *[area]* or *[postal\_code]* is required.

For best results, put a comma between the street information and the last address line information.

### Custom Options

There are no options specific to Zambia.

### Output Fields

The following table lists the address fields returned for a candidate located in Zambia.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	The 5-digit postal code.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Zambia, the country code is ZMB.

Field Name	Description
addressNumber	The address number.
streetName	The street or road name.
unitType	The unit type such as APT, STE, etc.
unitValue	The unit value/number, such as "3B".
customFields	Zambia does not have any custom output fields.

## Zimbabwe (ZWE)

This section defines the supported geocoding datasets, operations, and input and output field information for Zimbabwe.

### Supported Geocoding Datasets

The following table lists the supported geocoding dataset(s) with the available geocoding levels for Zimbabwe.

**Note:** Custom User Dictionaries are not supported.

Geocoding Dataset	City Centroid	Suburb/Village Centroid	Postal Centroid	Street Centroid	Interpolated Street Address	Point-level Address	Point of Interest
TomTom English	Yes	Yes	No	Yes	No	No	No

### Supported Operations

The following operations are supported for Zimbabwe:

- **Geocoding**—Takes one or more addresses as input and returns latitude/longitude coordinates and other information.
- **Reverse Geocoding**—Takes one or more latitude and longitude coordinates as input and returns the address of the location.

### Input Fields

The input address may contain some or all of the following address elements.

Parameter	Type	Description
placeName	String	Specifies the building name, place name, Point of Interest (POI), company or firm name associated with the input address. Optional.

Parameter	Type	Description
mainAddress	String	<p><b>Single Line Input</b>—If no other address field is populated, then the <code>mainAddress</code> entry will be treated as a single line input. Single line input can consist of multiple input address fields; these should be entered in the typical address order for the country. For more details, refer to the section "Single Line Input" below.</p> <p><b>Street Address</b>—If the post address components (city, postalCode, etc.) are provided separately or in the <code>lastLine</code> field, then the contents of <code>mainAddress</code> will be treated as the street address part and can include company name, house number, building names and street names. Optional.</p> <p><b>Street Intersection Input</b>—To enter an intersection, specify the two street names separated by a double ampersand (&amp;&amp;).</p>
lastLine	String	<p>The last line of the address. Optional. For example:</p> <p>2 Manchester Rd <b>Harare</b></p>
areaName1	String	Not used.
areaName2	String	Not used.
areaName3	String	Specifies the city or town. Required.
areaName4	String	Not used.
postalCode	String	Not used - Zimbabwe does not have a postal code system.
country	String	The three-letter ISO 3166-1 Alpha-3 country code. For Zimbabwe, the country code is ZWE. Required for forward geocoding.

### Single Line Input

Instead of entering each address component in separate fields, you can enter the entire address in the `mainAddress` input field with the address elements ordered as follows:

*[address\_number][street\_info][area]*

Where:

- *[address\_number]* is optional.
- *[street\_info]* consists of the street name, street type and any pre- or post-directional information (e.g. East, West, etc.). Optional.
- *[area]* is the city only, or city plus supporting information, such as state, province, locality. Required.

For best results, put a comma between the street information and the area information.

### Custom Options

There are no options specific to Zimbabwe.

### Output Fields

The following table lists the address fields returned for a candidate located in Zimbabwe.

**Note:** The `placeName`, `addressNumber`, `unitType` and `unitValue` field values are only returned when a geocoding dataset that supports street address interpolation is installed.

Field Name	Description
<code>mainAddressLine</code>	The street address which may include company name, house number, building names and street names.
<code>addressLastLine</code>	The last line of the address.
<code>placeName</code>	The building name, place name, Point of Interest (POI), company or firm name associated with the address.
<code>areaName1</code>	Not used.
<code>areaName2</code>	Not used.
<code>areaName3</code>	The city or town.
<code>areaName4</code>	Not used.
<code>postCode1</code>	Not used.
<code>postCode2</code>	Not used.
<code>country</code>	The three-letter ISO 3166-1 Alpha-3 country code. For Zimbabwe, the country code is ZWE.
<code>addressNumber</code>	The address number.
<code>streetName</code>	The street or road name.
<code>unitType</code>	The unit type such as APT, STE, etc.



Field Name	Description
unitValue	The unit value/number, such as "3B".
customFields	Zimbabwe does not have any custom output fields.

# B - Result Codes

## In this section

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# Match and Location Codes for USA

## Match Codes

The geocoder returns match codes indicating the address portions that matched or did not match to the database.

If the geocoder cannot make a match, the match code begins with "E" and the remaining digits indicate why the address did not match. For a description of the "Ennnn" codes, see ["Ennnn" Match Codes for No Match](#) on page 736. The digits do not specifically refer to which address elements did not match, but rather why the address did not match.

The following table contains the match code values. For a description of the hex digits for the match codes, see [Match Hex Digits](#) on page 734.

Code	Description
Ahh	Same as "Shh", but indicates match to an alias name record or an alternate record.
Chh	The street address did not match, but the geocoder located a street segment based on the input ZIP Code or city.
D00	Matched to a small town with P.O. Box or General Delivery only.
Gxx	Matched to an Auxiliary file.
Hhh	The house number was changed.
Jhh	Matched to a user-defined dictionary.

Code	Description
Nxx	<p>Matched to the nearest address. Used with reverse geocoding. The following are the only values for N:</p> <p><b>NS0</b>      Nearest street center match (nearest street segment interpolated)</p> <p><b>NS1</b>      Nearest unanged street segment</p> <p><b>NP0</b>      Nearest point address</p> <p><b>NX0</b>      Nearest intersection</p>
P	Successful reverse APN lookup.
Qhh	Matched to USPS range records with unique ZIP Codes. CASS rules prohibit altering an input ZIP if it matches a unique ZIP Code value.
Rhh	Matched to a ranged address.
Shh	Matched to USPS data. This is considered the best address match, because it matched directly against the USPS list of addresses. "S" is returned for a small number of addresses when the matched address has a blank ZIP + 4.
Thh	Matched to a street segment record. Street segment records do not contain ZIP Code information. If you enter a ZIP Code, the application returns the ZIP Code you entered. If the input city and state has only one ZIP Code, the application returns that ZIP Code.
Uhh	Matched to USPS data but cannot resolve the ZIP + 4 code without the firm name or other information. CASS mode returns an "E023" (multiple match) error code.
Xhhh	<p>Matched to an intersection of two streets, for example, "Clay St &amp; Michigan Ave." The first hex digit refers to the last line information, the second hex digit refers to the first street in the intersection, and the third hex digit refers to the second street in the intersection.</p> <p><b>Note:</b> The USPS does not allow intersections as a valid deliverable address.</p>
Yhhh	Same as "Xhhh", but an alias name record was used for one or both streets.

Code	Description
<sup>1</sup> Z	No address given, but verified the provided ZIP Code .

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<sup>1</sup> Zh may be returned if `FIND_CORRECT_LASTLINE` is set to True.

## Match Hex Digits

The following table contains the description of the hex digits for the match code values.

Code	In first hex position means:	In second and third hex position means:
0	No change in last line.	No change in address line.
1	ZIP Code changed.	Street type changed.
2	City changed.	Predirectional changed.
3	City and ZIP Code changed.	Street type and predirectional changed.
4	State changed.	Postdirectional changed.
5	State and ZIP Code changed.	Street type and postdirectional changed.
6	State and City changed.	Predirectional and postdirectional changed.
7	State, City, and ZIP Code changed.	Street type, predirectional, and postdirectional changed.
8	ZIP + 4 changed.	Street name changed.
9	ZIP and ZIP + 4 changed.	Street name and street type changed.
A	City and ZIP + 4 changed.	Street name and predirectional changed.
B	City, ZIP, and ZIP + 4 changed.	Street name, street type, and predirectional changed.
C	State and ZIP + 4 changed.	Street name and postdirectional changed.

Code	In first hex position means:	In second and third hex position means:
D	State, ZIP, and ZIP + 4 changed.	Street name, street type, and postdirectional changed.
E	State, City, and ZIP + 4 changed.	Street name, predirectional, and postdirectional changed.
F	State, City, ZIP, and ZIP + 4 changed.	Street name, street type, predirectional, and postdirectional changed.

### "Ennn" Match Codes for No Match

The following table describes the values returned when the application cannot find a match or an error occurs.

Code	"nnn" Value	Description
Ennn <sup>2</sup>		Indicates an error, or no match. This can occur when the address entered does not exist in the database, or the address is badly formed and cannot be parsed correctly. The last three digits of an error code indicate which parts of an address the application could not match to the database.
	nnn = 000	No match made.
	nnn = 001	Low level error.
	nnn = 002	Could not find data file.
	nnn = 003	Incorrect GSD file signature or version ID.
	nnn = 004	GSD file out of date. Only occurs in CASS mode.
	nnn = 010	No city and state or ZIP Code found.
	nnn = 011	Input ZIP not in the directory.
	nnn = 012	Input city not in the directory.
	nnn = 013	Input city not unique in the directory.
	nnn = 014	Out of licensed area. Only occurs if using Group1 licensing technology.
	nnn = 015	Record count is depleted and license has expired.
	nnn = 020	No matching streets found in directory.
	nnn = 021	No matching cross streets for an intersection match.
	nnn = 022	No matching segments.



Code	"nnn" Value	Description
	nnn = 023	Unresolved match.
	nnn = 024	No matching segments. (Same as 022.)
	nnn = 025	Too many possible cross streets for intersection matching.
	nnn = 026	No address found when attempting a multiline match.
	nnn = 027	Invalid directional attempted.
	nnn = 028	Record also matched EWS data, therefore the application denied the match.
	nnn = 029	No matching range, single street segment found.
	nnn = 030	No matching range, multiple street segments found.

### Correct Lastline Match Codes

As mentioned in [Correct Lastline](#) on page 637, when set to True, `FIND_CORRECT_LASTLINE` corrects elements of the output lastline, providing a good ZIP Code or close match on the soundex even if the address would not match or was non-existent.

The feature works when `FIND_ADDRCODE` is True and the address does not match a candidate or when `FIND_Z_CODE` is True and only lastline information is input..

Code	Value	Description
Zh		No address given, but verified the provided ZIP Code.
	h = 0	No change in lastline.
	h = 1	ZIP Code changed.
	h = 2	City changed.

<sup>2</sup> Ennn may be returned if `FIND_CORRECT_LASTLINE` is set to True. For more information, see [Correct Lastline Match Codes](#) on page 737.

Code	Value	Description
	h = 3	City and ZIP Code changed.
	h = 4	State changed.
	h = 5	State and ZIP Code changed.
	h = 6	State and City changed.
	h = 7	State, City, and ZIP Code changed.
	h = 8	ZIP + 4 changed.
	h = 9	ZIP and ZIP + 4 changed.
	h = A	City and ZIP + 4 changed.
	h = B	City, ZIP, and ZIP + 4 changed.
	h = C	State and ZIP + 4 changed.
	h = D	State, ZIP, and ZIP + 4 changed.
	h = E	State, City, and ZIP + 4 changed.
Ehnn		Indicates an error, or no match. This can occur when the address entered does not exist in the database, or the address is badly formed and cannot be parsed correctly. The second digit of the error code is a hex digit which details the changes that were made to the last line information to correct the lastline. The last two digits of an error code indicate which parts of an address the application could not match to the database.
	h = 0	No change in lastline.
	h = 1	ZIP Code changed.
	h = 2	City changed.
	h = 3	Record also matched EWS data, therefore the application denied the match.

Code	Value	Description
	h = 4	State changed.
	h = 5	State and ZIP Code changed.
	h = 6	State and City changed.
	h = 7	State, City, and ZIP Code changed.
	h = 8	ZIP + 4 changed.
	h = 9	ZIP and ZIP + 4 changed.
	h = A	City and ZIP + 4 changed.
	h = B	City, ZIP, and ZIP + 4 changed.
	h = C	State and ZIP + 4 changed.
	h = D	State, ZIP, and ZIP + 4 changed.
	h = E	State, City, and ZIP + 4 changed.
	nn = 00	No match made.
	nn = 01	Low level error.
	nn = 02	Could not find data file.
	nn = 03	Incorrect GSD file signature or version ID.
	nn = 04	GSD file out of date. Only occurs in CASS mode.
	nn = 10	No city and state or ZIP Code found.
	nn = 11	Input ZIP Code not in the directory.
	nn = 12	Input city not in the directory.

Code	Value	Description
	nn = 13	Input city not unique in the directory.
	nn = 14	Out of licensed area. Only occurs if using Group1 licensing technology.
	nn = 15	Record count is depleted and license has expired.
	nn = 20	No matching streets found in directory.
	nn = 21	No matching cross streets for an intersection match.
	nn = 22	No matching segments.
	nn = 23	Unresolved match.
	nn = 24	No matching segments. (Same as 022.)
	nn = 25	Too many possible cross streets for intersection matching.
	nn = 26	No address found when attempting a multiline match.
	nn = 27	Invalid directional attempted.
	nn = 28	Record also matched EWS data, therefore the application denied the match.
	nn = 29	No matching range, single street segment found
	nn = 30	No matching range, multiple street segments found

## Location Codes

Location codes indicate the locational accuracy of the assigned geocode. Note that an accurately placed candidate is not necessarily an ideal candidate. Examine the match codes and/or result codes in addition to location codes to best evaluate the overall quality of the candidate.

### Address Location Codes

Location codes that begin with an "A" are address location codes. Address location codes indicate a geocode made directly to a street network segment (or two segments, in the case of an intersection).

An address location code has the following characters.

1 <sup>st</sup> character	Always an "A" indicating an address location.	
2 <sup>nd</sup> character	May be one of the following	
	C	Interpolated address point location
	G	Auxiliary file data location
	I	Application infers the correct segment from the candidate records
	P	Point-level data location
	R	Location represents a ranged address
	S	Location on a street range
	X	Location on an intersection of two streets
3 <sup>rd</sup> and 4 <sup>th</sup> character	Digit indicating other qualities about the location.	

*Address Location Code Descriptions*

Code	Description
AGn	Indicates an auxiliary file for a geocode match where "n" is one of the following values:
n = 0	The geocode represents the center of a parcel or building.
n = 1	The geocode is an interpolated address along a segment.
n = 2	The geocode is an interpolated address along a segment, and the side of the street cannot be determined from the data provided in the auxiliary file record.
n = 3	The geocode is the midpoint of the street segment.
APnn	Indicates a point-level geocode match representing the center of a parcel or building, where "nn" is one of the following values:
nn = 00	User Dictionary centroid. Geocode returned by a User Dictionary.
nn = 02	Parcel centroid Indicates the center of an accessor's parcel (tract or lot) polygon. When the center of an irregularly shaped parcel falls outside of its polygon, the centroid is manually repositioned to fall inside the polygon as closely as possible to the actual center.
nn = 04	Address points Represents field-collected GPS points with field-collected address data.

Code	Description
nn = 05	<p><b>Structure centroid</b></p> <p>Indicates the center of a building footprint polygon, where the building receives mail or has telephone service.</p> <p>Usually a residential address consists of a single building. For houses with outbuildings (detached garages, shed, barns, etc.), only the residences have a structure point. Condominiums and duplexes have multiple points for each building. Larger buildings, such as apartment complexes, typically receive mail at one address for each building and therefore individual apartments are not represented as discrete structure points.</p> <p>Shopping malls, industrial complexes, and academic or medical center campuses where one building accepts mail for the entire complex are represented as one point. When addresses are assigned to multiple buildings within one complex, each addressed structure is represented by a point.</p> <p>If the center of a structure falls outside of its polygon, the center is manually repositioned to fall inside the polygon.</p>
nn = 07	<p><b>Manually placed</b></p> <p>Address points are manually placed to coincide with the midpoint of a parcel's street frontage at a distance from the center line.</p>
nn = 08	<p><b>Front door point</b></p> <p>Represents the designated primary entrance to a building. If a building has multiple entrances and there is no designated primary entrance or the primary entrance cannot readily be determined, the primary entrance is chosen based on proximity to the main access street and availability of parking.</p>
nn = 09	<p><b>Driveway offset point</b></p> <p>Represents a point located on the primary access road (most commonly a driveway) at a perpendicular distance of between 33-98 feet (10-30 meters) from the main roadway.</p>

Code	Description
nn = 10	<p>Street access point</p> <p>Represents the primary point of access from the street network. This address point type is located where the driveway or other access road intersects the main roadway.</p>
nn = 21	<p>Base parcel point</p> <p>When unable to match to an input unit number, or when the unit number is missing from an address location with multiple units, the "base" parcel information is returned, the address is not standardized to a unit number, and additional information, such as an Assessor's Parcel Number, is not returned.</p>
nn = 22	<p>Backfill address point</p> <p>The precise parcel centroid is unknown. The address location assigned is based on two known parcel centroids.</p>
nn = 23	<p>Virtual address point</p> <p>The precise parcel centroid is unknown. The address location assigned is relative to a known parcel centroid and a street segment end point.</p>
nn = 24	<p>Interpolated address point</p> <p>The precise parcel centroid is unknown. The address location assigned is based on street segment end points.</p>
AIn	<p>The correct segment is inferred from the candidate records at match time.</p>
ASn	<p>House range address geocode. This is the most accurate geocode available.</p>
<p>AIn and ASn, and ACnh share the same values for the 3<sup>rd</sup> character "n" as follows:</p>	
n = 0	<p>Best location.</p>



Code	Description
n = 1	Street side is unknown. The Census FIPS Block ID is assigned from the left side; however, there is no assigned offset and the point is placed directly on the street.
n = 2	<p>Indicates one or both of the following:</p> <ul style="list-style-type: none"> <li>The address is interpolated onto a TIGER segment that did not initially contain address ranges.</li> <li>The original segment name changed to match the USPS spelling. This specifically refers to street type, predirectional, and postdirectional.</li> </ul> <p><b>Note:</b> Only the second case is valid for non-TIGER data because segment range interpolation is only completed for TIGER data.</p>
n = 3	Both 1 and 2.
n = 7	Placeholder. Used when starting and ending points of segments contain the same value and shape data is not available.
ACnh	Indicates a point-level geocode that is interpolated between 2 parcel centroids (points), a parcel centroid and a street segment endpoint, or 2 street segment endpoints.
The ACnh 4 <sup>th</sup> character "h" values are as follows:	
h = 0	Represents the interpolation between two points, both coming from User Dictionaries.
h = 1	Represents the interpolation between two points. The low boundary came from a User Dictionary and the high boundary, from a non-User Dictionary.
h = 2	Represents the interpolation between one point and one street segment end point, both coming from User Dictionaries.

Code	Description
h = 3	Represents the interpolation between one point (low boundary) and one street segment end point (high boundary). The low boundary came from a User Dictionary and the high boundary from a non-User Dictionary.
h = 4	Represents the interpolation between two points. The low boundary came from a non-User Dictionary and the high boundary from a User Dictionary.
h = 5	Represents the interpolation between two points, both coming from non-User Dictionaries.
h = 6	Represents the interpolation between one point (low boundary) and one street segment end point (high boundary). The low boundary came from a non-User Dictionary and the high boundary from a User Dictionary.
h = 7	Represents the interpolation between one point and one street segment end point and both came from non-User Dictionaries.
h = 8	Represents the interpolation between one street segment end point and one point, both coming from User Dictionaries.
h = 9	Represents the interpolation between one street segment end point (low boundary) and one point (high boundary). The low boundary came from a User Dictionary and the high boundary from a non-User Dictionary.
h = A	Represents the interpolation between two street segment end points, both coming from User Dictionaries.
h = B	Represents the interpolation between two street segment end points. The low boundary came from a User Dictionary and the high boundary from a non-User Dictionary.

Code	Description
h = C	Represents the interpolation between one street segment end point (low boundary) and one point (high boundary). The low boundary came from a non-User Dictionary and the high boundary from a User Dictionary.
h = D	Represents the interpolation between one street segment end point and one point, both coming from non-User Dictionary.
h = E	Represents the interpolation between two street segment end points. The low boundary came from a non-User Dictionary and the high boundary from a User Dictionary.
h = F	Represents the interpolation between two street segment end points, both coming from non-User Dictionaries.
ARn	Ranged address geocode, where "n" is one of the following:
n = 1	The geocode is placed along a single street segment, midway between the interpolated location of the first and second input house numbers in the range.
n = 2	The geocode is placed along a single street segment, midway between the interpolated location of the first and second input house numbers in the range, and the side of the street is unknown. The Census FIPS Block ID is assigned from the left side; however, there is no assigned offset and the point is placed directly on the street.
n = 4	The input range spans multiple USPS segments. The geocode is placed on the endpoint of the segment which corresponds to the first input house number, closest to the end nearest the second input house number.
n = 7	Placeholder. Used when the starting and ending points of the matched segment contain the same value and shape data is not available.

Code	Description
AXn	Intersection geocode, where "n" is one of the following:
n = 3	Standard single-point intersection computed from the center lines of street segments.
n = 8	Interpolated (divided-road) intersection geocode. Attempts to return a centroid for the intersection.

## Street Centroid Location Codes

Location codes that begin with "C" are street centroid location codes. Street centroid location codes indicate the Census ID accuracy and the position of the geocode on the returned street segment. Street centroids may be returned if the street centroid fallback option is enabled and an address-level geocode could not be determined.

A street centroid location code has the following characters.

1 <sup>st</sup> character	Always "C" indicating a location derived from a street segment.
2 <sup>nd</sup> character	Census ID accuracy based on the search area used to obtain matching Street Segment.
3 <sup>rd</sup> character	Location of geocode on the returned street segment.

The following table contains the values and descriptions for the location codes.

Character position	Code	Description
2 <sup>nd</sup> Character		
	B	Block Group accuracy (most accurate). Based on input ZIP Code.
	T	Census Tract accuracy. Based on input ZIP Code.
	C	Unclassified Census accuracy. Normally accurate to at least the County level. Based on input ZIP Code.
	F	Unknown Census accuracy. Based on Finance area.
	P	Unknown Census accuracy. Based on input City.
3 <sup>rd</sup> Character		
	C	Segment Centroid.

Character position	Code	Description
	L	Segment low-range end point.
	H	Segment high-range end point.

## ZIP + 4 Centroid Location Codes

Location codes that begin with a "Z" are ZIP + 4 centroid location codes. ZIP + 4 centroids indicate a geocode could not be determined for the address, so the location of the center of the address's ZIP + 4 was returned instead. ZIP + 4 centroid location codes indicate the quality of two location attributes: Census ID accuracy and positional accuracy.

A ZIP + 4 centroid location code has the following characters.

1 <sup>st</sup> character	Always "Z" indicating a location derived from a ZIP centroid.
2 <sup>nd</sup> character	Census ID accuracy.
3 <sup>rd</sup> character	Location type.
4 <sup>th</sup> character	How the location and Census ID was defined. Provided for completeness, but may not be useful for most applications.

Character Position	Code	Description
2 <sup>nd</sup> Character	B	Block Group accuracy (most accurate).
	T	Census Tract accuracy.
	C	Unclassified Census accuracy. Normally accurate to at least the County level.
3 <sup>rd</sup> Character	5	Location of the Post Office that delivers mail to the address, a 5-digit ZIP Code centroid, or a location based upon locale (city). See the 4 <sup>th</sup> character for a precise indication of locational accuracy.

Character Position	Code	Description
	7	Location based upon a ZIP + 2 centroid. These locations can represent a multiple block area in urban locations, or a slightly larger area in rural settings.
	9	Location based upon a ZIP + 4 centroid. These are the most accurate centroids and normally place the location on the correct block face. For a small number of records, the location may be the middle of the entire street on which the ZIP + 4 falls. See the 4 <sup>th</sup> character for a precise indication of locational accuracy.
4 <sup>th</sup> Character		
	A	Address matched to a single segment. Location assigned in the middle of the matched street segment, offset to the proper side of the street.
	a	Address matched to a single segment, but the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	B	Address matched to multiple segments, all segments have the same Block Group. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP + 4. Location offset to the proper side of the street.
	b	Same as methodology "B" except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.



Character Position	Code	Description
	C	Address matched to multiple segments, with all segments having the same Census Tract. Returns the Block Group representing the most households in this ZIP + 4. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP + 4. Location offset to the proper side of the street.
	c	Same as methodology "C" except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	D	Address matched to multiple segments, with all segments having the same County. Returns the Block Group representing the most households in this ZIP + 4. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP + 4. Location offset to the proper side of the street.
	d	Same as methodology "D" except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	E	Street name matched; no house ranges available. All matched segments have the same Block Group. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.

Character Position	Code	Description
	F	Street name matched; no house ranges available. All matched segments have the same Census Tract. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	G	Street name matched (no house ranges available). All matched segments have the same County. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	H	Same as methodology "G", but some segments are not in the same County. Used for less than .05% of the centroids.
	I	Created ZIP + 2 cluster centroid as defined by methodologies "A", "a", "B", and "b". All centroids in this ZIP + 2 cluster have the same Block Group. Location assigned to the ZIP + 2 centroid.
	J	Created ZIP + 2 cluster centroid as defined by methodologies "A", "a", "B", "b", "C", and "c". All centroids in this ZIP + 2 cluster have the same Census Tract. Location assigned to the ZIP + 2 centroid.
	K	Created ZIP + 2 cluster centroid as defined by methodologies "A", "a", "B", "b", "C", "c", "D", and "d". Location assigned to the ZIP + 2 centroid.
	L	Created ZIP + 2 cluster centroid as defined by methodology "E". All centroids in this ZIP + 2 cluster have the same Block Group. Location assigned to the ZIP + 2 centroid.

Character Position	Code	Description
	M	Created ZIP+2 cluster centroid as defined by methodologies "E" and "F". All centroids in this ZIP + 2 cluster have the same Census Tract. Location assigned to the ZIP + 2 centroid.
	N	Created ZIP + 2 cluster centroid as defined by methodologies "E", "F", "G", and "H". Location assigned to the ZIP + 2 centroid.
	O	ZIP Code is obsolete and not currently used by the USPS. Historic location assigned.
	V	Over 95% of addresses in this ZIP Code are in a single Census Tract. Location assigned to the ZIP Code centroid.
	W	Over 80% of addresses in this ZIP Code are in a single Census Tract. Reasonable Census Tract accuracy. Location assigned to the ZIP Code centroid.
	X	Less than 80% of addresses in this ZIP Code are in a single Census Tract. Census ID is uncertain. Location assigned to the ZIP Code centroid.
	Y	Rural or sparsely populated area. Census code is uncertain. Location based upon the USGS places file.
	Z	P.O. Box or General Delivery addresses. Census code is uncertain. Location based upon the Post Office location that delivers the mail to that address.

## Geographic Centroid Location Codes

Location codes that begin with "G" are geographic centroid location codes. Geographic centroids may be returned if the street centroid fallback option is enabled and an address-level geocode could not be determined. Geographic centroid location codes indicate the quality a city, county, or state centroid.

A geographic centroid location code has the following characters.

1 <sup>st</sup> character	Always "G" indicating a location derived from a geographic centroid.
2 <sup>nd</sup> character	Geographic area type. One of the following: <b>M</b> Municipality (for example, a city) <b>C</b> County <b>S</b> State

# Global Result Codes

## Forward Geocoding Result Codes

### *Result Code General Descriptions*

The following table provides general descriptions for the returned result codes.

Result Code	Description
<p>Street level geocoded candidates return a result code beginning with the letter <b>s</b>. The second character in the code indicates the positional accuracy of the resulting point for the geocoded record. For information on the specific S result codes supported for your country, see <a href="#">Single Match 'S' Result Codes</a> on page 760.</p>	
S8	Single match with the point located at either the single point associated with an address point candidate or at an address point candidate that shares the same house number. No interpolation is required.
S7	Single match with the point located at an interpolated point along a street segment. Both a point dictionary and a street segment dictionary must be available. Because known point data is available, the S7 interpolation is more accurate than an S5 result.
S6	Single match, point located at point ZIP centroid.
S5	Single match with the point located at a street address position. Because only street segment data is available, the interpolation is not as accurate as an S7 return. The S5 code is followed by letters and dashes indicating match precision.
S4	Single match with the point located at a street centroid.
S3	Single match with the point located at a ZIP + 4 <sup>®</sup> centroid. This is the same quality match as a Z3 result.
S2	Single match with the point located at a ZIP + 2 centroid. This is the same quality match as a Z2 result.
S1	Single match with the point located at a ZIP Code centroid. This is the same quality match as a Z1 result.

Result Code	Description
S0	Single match, however, no coordinates are available (this is a very rare occurrence).
SX	Single match with the point located at street intersection.
SC	Single match where the original point has been moved a specified distance (usually along a perpendicular line) toward or away from the associated street segment. This result code can be returned only when both a point dictionary and a street segment dictionary are available and when the centerline offset feature is used.
<p>For s (street geocoded) result codes, eight additional characters describe how closely the address matches an address in the database. The characters appear in the order listed in the following table. Any non-matched components are represented by a dash.</p> <p>For example, the result code S5--N-SCZA represents a single match that matched the street name, street suffix direction, town and postcode. The dashes indicate that there was no match on house number, street prefix direction, or thoroughfare type. The match came from the Street Range Address database. This record would be geocoded at the street address position of the match candidate.</p>	
H	House number match.
P	Street prefix (pre-directional). P is present if any of these conditions are satisfied: <ul style="list-style-type: none"> <li>• The candidate pre-directional matches the input pre-directional.</li> <li>• The candidate post-directional matches the input pre-directional after pre- and post-directionals are swapped.</li> <li>• The input does not have a pre-directional.</li> </ul>
N	Street name match.
T	Street/thoroughfare type match.
S	Street suffix (post-directional). s in result code is present if any of these conditions are satisfied: <ul style="list-style-type: none"> <li>• The candidate post-directional matches the input post-directional.</li> <li>• The candidate pre-directional matches the input post-directional after pre- and post-directionals are swapped.</li> <li>• The input does not have a post-directional.</li> </ul>
C	areaName3 match (this is usually the city or town).

Result Code	Description
z	Postal code match.
A or U	Match to Address Dictionary or User Dictionary.

Matches in the **z** category indicate that a match was made at the postcode level. A postcode match is returned in either of these cases:

- You specified to match to postal code centroids. The resulting point is located at the postal code centroid with the following possible accuracy levels.
- There is no street level match and you specified to fall back to postal code centroid.

**Note:** Refer to the section covering your country to locate the specific meanings of `postCode1` & `2`.

z6	z6 results are matched to a point ZIP centroid. Point ZIPs are 5-digit The z6 code indicates that these special ZIPs are actual point locations, not an area. Point ZIPs include unique single sites, buildings, or organizations.
z3	z3 results are matched to ZIP + 4 or <code>postCode2</code> centroid locations.
z2	z2 results are matched to ZIP + 2 or partial <code>postCode2</code> centroid locations.
z1	z1 results are matched to ZIP Code or ( <code>postCode1</code> ) centroid locations.

Geographic level geocoded candidates return a result code beginning with the letter **G**. The numbers following the G in the result code provides more detailed information on the accuracy of the candidate.

**Note:** Refer to the section covering your country to locate the specific meanings of `areaName1-4`.

G1	State/Province ( <code>areaName1</code> ) match with the point located at the state centroid.
G2	County/Region ( <code>areaName2</code> ) match with the point located at the county centroid.
G3	City/Town ( <code>areaName3</code> ) match with the point located at the city centroid.
G4	Suburb/village ( <code>areaName4</code> ) match with the point located at the suburb/village centroid.

### Single Match 'S' Result Codes

The following table shows the support for the S category result codes by country. For detailed descriptions of the 'S' result codes, see [Forward Geocoding Result Codes](#) on page 757. These descriptions apply to the vast majority of the countries. The exceptions are listed and described in the sections below the following table for:

- [Australia](#)
- [Canada](#)
- [United States](#)

A bullet "\*" indicates the S code is supported. A blank cell indicates the S code is not supported.

Country Name	S8	S7	S6	S5	S4	S3	S2	S1	S0	SX	SC	SG
Australia (AUS)	*	*		*	*				*			*
Canada (CAN)	*	*		*	*	*		*	*		*	
Denmark (DNK)	*	*		*	*					*		
Germany (DEU)	*	*		*	*					*		
Great Britain (GBR)	*	*		*	*				*	*		
New Zealand (NZL)	*	*		*	*					*		
United States (USA)	*	*	*	*	*	*	*	*	*	*	*	*
All other countries	*	*		*	*				*	*	*	



## United States — 'S' Precision Code Descriptions

The following table provides 'S' precision code descriptions for the USA.

Precision Code	Description
Street level geocoded candidates return a Precision Code beginning with the letter S. The second character in the code indicates the positional accuracy of the resulting point for the geocoded record.	
S8	Single match, point located at either the single point associated with an address point candidate or at an address point candidate that shares the same house number. No interpolation is required.
S7	Single match, located at an interpolated point along a street segment. Both a point/parcel dictionary and a street segment dictionary must be available. Because known point data is available, the S7 interpolation is more accurate than an S5 result.
S6	Single match, point located at point ZIP centroid.
S5	Single match, point located at a street address position. Because only street segment data is available, the interpolation is not as accurate as an S7 return.
S4	Single match, point located at a street centroid..
S3	Single match, point located at ZIP + 4®. This is the same quality match as a Z3 result.
S2	Single match, point located at ZIP + 2 centroid. single match, point located at ZIP + 2 centroid. This is the same quality match as a Z2 result.
S1	Single match, point located at ZIP Code centroid. This is the same quality match as a Z1 result.
S0	Single match, however, no coordinates are available (this is a very rare occurrence).
SX	Single match, point located at street intersection.
SC	Single match where the original point has been moved a specified distance (usually along a perpendicular line) toward or away from the associated street segment. This result code can be returned only when both a point geocoding dataset and a street segment geocoding dataset are available and when the centerline offset feature is used.

## Australia — 'S' Result Code Descriptions

The following table provides 'S' result code descriptions for Australia.

Result Code	Description
Street level geocoded candidates return a result code beginning with the letter S. The second character in the code indicates the positional accuracy of the resulting point for the geocoded record.	
S8	Single match, point located at either the single point associated with an address point candidate or at an address point candidate that shares the same house number. No interpolation is required.
S8.....G	The S8.....G result code is used for single matches with GNAF Reliability levels of 1 or 2 (the highest level of GNAF Reliability).
S7	Single match, located at an interpolated point along the candidate's street segment. When the potential candidate is not an address point candidate and there are no exact house number matches among other address point candidates, the S7 result is returned using address point interpolation.
S7.....G	The S7.....G result code is used for single matches with GNAF Reliability level of 3.
S5	Single match, point located at a street address position.
S4	Single match, point located at the center of a shape point path (shape points define the shape of the street polyline).
S4.....G	The S4.....G result code is used for single matches with a GNAF Reliability level of 4 (associated with a unique road feature.)
S0	Single match, however, no coordinates are available (this is a very rare occurrence).
SX	Single match with the point located at street intersection.
SC	Single match where the original point has been moved a specified distance (usually along a perpendicular line) toward or away from the associated street segment. This result code can be returned only when both a point geocoding dataset and a street segment geocoding dataset are available and when the centerline offset feature is used.
SG	Single match with point at the centre of a locality ( <code>areaName3</code> ) or Locality level geocode derived from topographic feature. An SG result code is associated with GNAF Reliability Level 5 (locality or neighbourhood) or with Level 6 (unique region.)

## Canada — 'S' Result Code Descriptions

The following table provides 'S' result code descriptions for Canada.

Result Code	Description
Street level geocoded candidates return a result code beginning with the letter S. The second character in the code indicates the positional accuracy of the resulting point for the geocoded record.	
S8	Single match, point located at either the single point associated with an address point candidate or at an address point candidate that shares the same house number. No interpolation is required.
S7	Single match, located at an interpolated point along the candidate's street segment. When the potential candidate is not an address point candidate and there are no exact house number matches among other address point candidates, the S7 result is returned using address point interpolation.
S5	Single match, point located at a street address position.
S4	Single match, point located at the center of a shape point path (shape points define the shape of the street polyline).
S3	Single match, point located at postal centroid of FSALDU
S1	Single match, point located at postal centroid of FSA
S0	Single match, however, no coordinates are available (this is a very rare occurrence).
SC	Single match where the original point has been moved a specified distance (usually along a perpendicular line) toward or away from the associated street segment. This result code can be returned only when both a point geocoding dataset and a street segment geocoding dataset are available and when the centerline offset feature is used.

## Reverse Geocoding 'R' Result Codes

Matches in the **R** category indicate that the record was matched by reverse geocoding. The first three characters of the **R** result code indicate the type of match found. **R** geocode results include an additional letter to indicate the dictionary from which the match was made. This is always an **A**, indicating address dictionary; reverse geocoding is supported by the address dictionary only (not user dictionaries.)

### *Reverse Geocoding 'R' Result Code Descriptions*

Reverse Geocoding Code	Description
------------------------	-------------

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RS8A	Point/parcel level precision for reverse geocoding. Candidate returned from address dictionary.
------	---

---

RS5A	Interpolated street candidate for reverse geocoding. Candidate returned from address dictionary.
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RS4A	Street centroid candidate for reverse geocoding. Candidate returned from address dictionary.
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# C - Error Messages

## In this section

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Exception Codes

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## Exception Codes

If the server throws an exception, the REST web service will return the exception code and an accompanying exception message over the network to the client. The exception code provides a general error description; the exception message provides a more specific indication of the cause of the exception.

In the following example a GET request to the Geocode service contains "Line" which is an incorrect parameter.

```
GET http://endpoint/Geocode/rest/GeocodeService/geocode.json?
mainAddress=42%20Venus%20Drive&Line=Shrewsbury&country=USA HTTP/1.1
```

The server returns the following error:

```
HTTP/1.1 500 Internal Server Error
Server: Apache-Coyote/1.1
Date: Wed, 25 Feb 2015 20:52:18 GMT
exceptionCode: INVALID_CLIENT_INPUT
exceptionMsg: Unknown query parameter Line
Content-Length: 0
Connection: close
```

Exception Codes (datatype = String)	Description
REQUIRED_PARAMETER_MISSING	A required parameter is missing.
DATA_NOT_LICENSED	The license file for an address dictionary is not installed.
INTERNAL_ERROR	A general error occurred with the geocoding engine.
MAPMARKER_EXCEPTION	A general exception occurred in the MapMarker geocoding engine.
MAPMARKER_FATAL_EXCEPTION	A fatal exception occurred in the MapMarker geocoding engine.
INVALID_CLIENT_INPUT	An invalid input was encountered in the request.
NO_COUNTRY_SPECIFIED	The country field is missing from the request.

Exception Codes (datatype = String)	Description
COUNTRY_NOT_SUPPORTED	The requested operation is not supported for the specified country.
GEOSTAN_FATAL_EXCEPTION	A fatal exception occurred in the GeoStan geocoding engine.

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