

OpenCage Forward GeoCoding

- [Overview](#)
- [Set Up](#)
- [Configuration Overview](#)
 - [Input Options](#)
 - [Step Output](#)
- [Step Instructions](#)
- [Troubleshoot](#)

Overview

This Data Transformation step utilizes the OpenCage forward geocoding API to extract longitude/latitude coordinates from a single text address column, or a combination of multiple address part fields, and then convert them into a GeoPoint value.

For more information on the OpenCage API: <https://geocoder.opencagedata.com/>

Set Up

In order to use this step, you must install the OpenCage Geocode plug-in in your Yellowfin environment.

1. Download the plug-in from the Yellowfin [Marketplace](#). (You can find it under the Transform Steps panel.)
2. Install it on your instance of Yellowfin. Click here to learn how to do this.



It is worth noting that this step works with the Yellowfin 7.4 version that was released February 13th, 2018 or later.

Configuration Overview

These details will enable you to configure this step with ease.

Input Options

- **Basic configuration:** Use this setting if the entire address is provided as a single column.
- **Advanced configuration:** Switch to the advanced setting mode if individual parts of an address are specified. Any fields that are left blank, or values that are null will be ignored. As this is more specific it will tend to produce better results than the full address version.



You can also concatenate a split up address together by using the Calculated Field step, and stringing each field with a plus (+) operator.






- **API Key:** OpenCage provides an API key which is necessary to run the geocoding step. To obtain this key, see: <https://geocoder.opencagedata.com/>
- **Preview Mode Row Limit:** The API key has a usage limit to the number of times you can use the API, depending on your pricing package (see <https://geocoder.opencagedata.com/pricing> for more information). To ensure that you do not consume the usage limit too quickly during testing, this field can be used to specify the number of times you could use the key in a preview run. If this value is set to 0, then no limit will be applied. The number you specify here will affect the number of rows in the data preview panel. Note, however, that this setting will not be applied when the flow is published and run.

Step Output


The API will return a list of possible longitude/latitude coordinates, based on the level of detail provided for an address. This step will select the primary match from this list. If the API does not return any matches (which could happen if insufficient address details were provided), then a null value will be displayed.

As not all databases can store geometry field types, the matched geoint will be returned as a **POINT(Long,Lat)** text string, for example: POINT (-112.1234, 45.123). This value can then be converted to geometry objects for map display using database functions (such as [SQLServer](#)) or Yellowfin's view-level Well Known Text or [WKT converter](#).

1. Navigate to the data transformation module. (Create button > Transformation Flow)
2. Access the input steps list and use a step to import data into the flow.

Input Steps	
	Extract from Delimited File This step is for extracting from a delimited file
	Extract from Freehand SQL This step is for extracting by using Freehand SQL
	Extract from Report This step is for extracting from a Report
	Extract from Single Table This step is for extracting from a single database table
	Extract from Single Third Party Ta... This step is for extracting data from a single third party table

Flow Publish



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PUBLIC ADDRESS

	ADDRESS# <small>NUMERIC</small>	ADDRESS_ <small>TEXT</small>	ADDRESS_ <small>TEXT</small>	ADDRESS_ <small>TEXT</small>	ADDRESS_ <small>TEXT</small>	ADDRESS_ <small>TEXT</small>	POSTCODE <small>TEXT</small>	LATITUDE <small>NUMERIC</small>	LONGITUDE <small>NUMERIC</small>
1	44260	6605	Winters Road	Carouge	HOME	Home Address		46.180000	6.1
2	44259	50329	Wheeler Road	Sorbello	HOME	Home Address		41.220000	13.9
3	44258	33784	Whitfield Street	Michalin	HOME	Home Address		52.150000	21.2
4	44257	27975	Thompson Road	Panton Hill	HOME	Home Address	3759	-37.650000	145.2
5	44256	39496	Grady Road	Wolgysdong	HOME	Home Address		37.600000	126.9

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Configure Fields Errors Details

Select Fields to be extracted


[Select All](#)
[Deselect All](#)

- ☒ ADDRESSID
- ☒ ADDRESSLINE1
- ☒ ADDRESSLINE2
- ☒ ADDRESSLINE3
- ☒ ADDRESSTYPE
- ☒ ADDESTYPEDESCRIPTION
- ☒ POSTCODE
- ☒ LATITUDE
- ☒ LONGITUDE
- ☒ GEOPOINT
- ☒ ISOCODE


Apply Filters to Extract Data










Apply

4. Once you are ready to use the OpenCage GeoCode step, open the transformation steps panel, and drag the step into your flow.



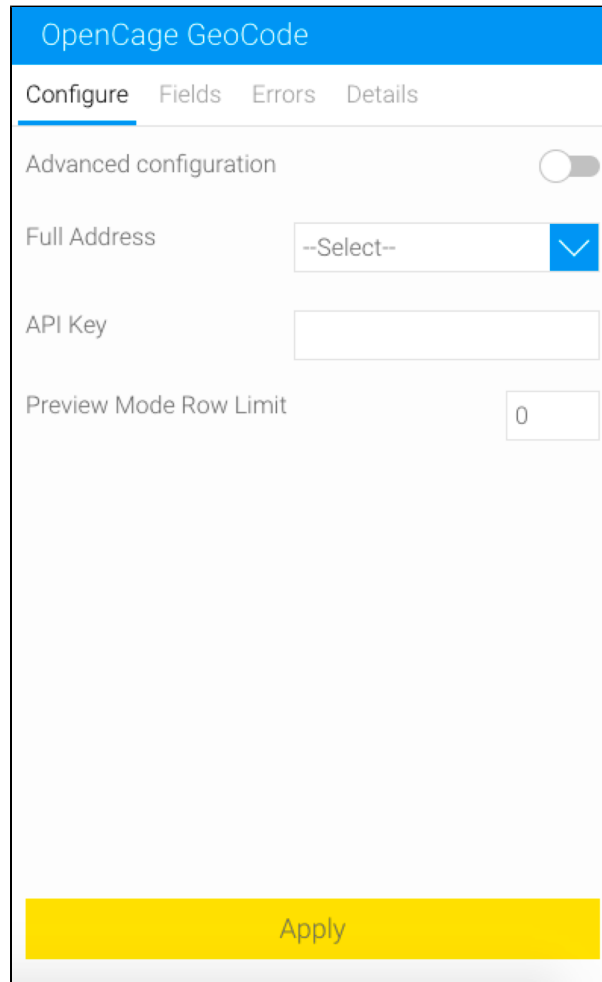
Transformation Steps



	Aggregate  This step provides aggregates of incoming data
	Calculated Field This step creates a calculated field from a calculation based on other...
	Filter This step is for filtering data in a step
	Merge This step merges two sets of data based on configured Join Fields
	OpenCage GeoCode This step uses OpenCage's geocoding service to provide lat/long...
	PB - Forward GeoCode This step takes an address and returns a geoint.
	Split This step duplicates an input dataset to create identical output datasets
	Union This step combines data from two inputs into one set which has rows...

5. Connect the previous step to this one.

6. Click on this step to bring up its configuration details in the Transformation Flow panel. (Click [here](#) if you would like an overview of some of the step configuration details.)



The screenshot shows the 'OpenCage GeoCode' configuration panel. It has a blue header with the title. Below the header are four tabs: 'Configure' (selected), 'Fields', 'Errors', and 'Details'. The 'Configure' tab contains the following settings:

- 'Advanced configuration' with a toggle switch that is currently turned off.
- 'Full Address' with a dropdown menu showing '--Select--' and a blue arrow icon.
- 'API Key' with an empty text input field.
- 'Preview Mode Row Limit' with a text input field containing the number '0'.

At the bottom of the panel is a large yellow button labeled 'Apply'.

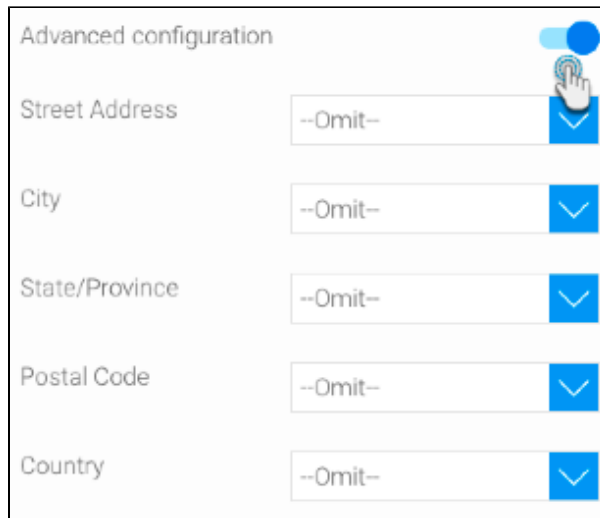
7. You have two options to configure the address, as discussed below:
- Basic configuration:** Through this default mode, you can include a full address contained in a single field. Choose this field from the Full Address dropdown.



This is a close-up of the 'Full Address' dropdown menu. It shows the label 'Full Address' on the left, a dropdown box with '--Select--' in the center, and a blue arrow icon on the right.

- Advanced configuration:** If your address is divided amongst various fields, then use this mode:

- i. Enable the Advanced Configuration toggle. This will reveal additional setting options.



Advanced configuration

Street Address --Omit--

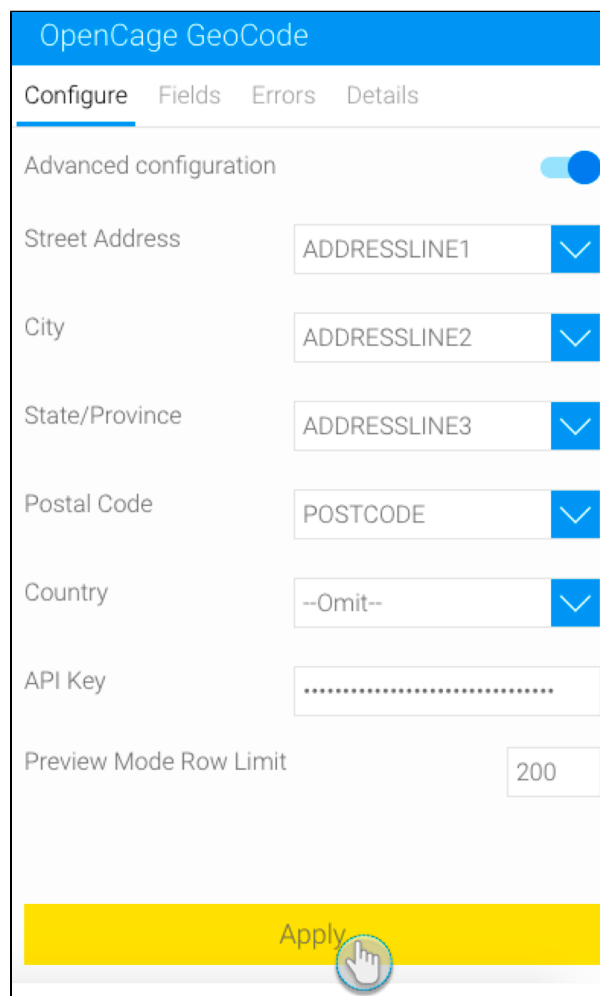
City --Omit--

State/Province --Omit--

Postal Code --Omit--

Country --Omit--

- ii. Select the various address values for their corresponding fields.
8. Enter the OpenCage API key. Yellowfin will save this key as an encrypted value.
9. Enter a limit to control the number of times the key will be used when executing the flow in the preview mode. This will control the number of rows that are processed, since one request is used for each row.
10. Once you have provided all the configuration details, click Apply.



OpenCage GeoCode

Configure Fields Errors Details

Advanced configuration

Street Address ADDRESSLINE1

City ADDRESSLINE2

State/Province ADDRESSLINE3

Postal Code POSTCODE

Country --Omit--

API Key

Preview Mode Row Limit 200

Apply

11. Once successful, the step will generate a new column called *LongLat*, displaying the converted geoints. This is the default column name of this output. You can always rename it.

LongLat TEXT	ADDRESSID NUMERIC	ADDRESSL... TEXT	ADDRESSL... TEXT
POINT(137.7849465,...	44394	15190	Park Road
POINT(16.39854,48...	44255	25749	Harrell Road
POINT(-2.00049,42.8...	44254	50547	Reeves Street
POINT(15.43333,58.9)	44393	38701	Atkins Street

12. You can continue transforming your data by adding more steps, or save the result by using an output step.

Troubleshoot

If your step has failed, it could be for a number of reasons:

- Your API key limit has been exhausted (if using the free pricing plan). You will need a new key to continue using this step.
- An incorrect API key was provided.
- The input address fields you provided are incorrect (or do not match the column data type).