fintech OS

Ideal Postcodes Connector 1.0

User Guide

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Overview

Connectors are simple, data point connections to external Saas providers, that are used to enrich internal customer data to help in onboarding and risk decision scenarios. API Connectors gather data from a collection of REST APIs with the purpose of merging them into a cloud-based data storage system. This process gives the possibility of filtering and transforming data into a proper format or structure for the purposes of querying and analysis.

FintechOS offers the possibility of accessing different databases with the purpose of moving around specific data using API connectors. They can be used but are not limited to banking or insurance business scenarios, such as customer identity verification in a loan origination operation, automatically fill-in customer data, data verification and so on. In addition, connectors can have a significant role in the SME or customer onboarding process by providing easy access to databases where information the needed information is stored.

Ideal Postcodes is a platform that provides UK address search solutions. The data returned is validated and up-to-date.
The FintechOS Ideal Postcodes Connector aids financial institutions by accelerating and simplifying address verification processes when enrolling new customers. Once integrated in a digital journey, the API connector can be used to search and retrieve the following data:

- Verified postal codes

- Verified addresses

- Partial address lookup

- Verified Unique Property Reference Numbers (UPRN)

When accessed from a digital journey, the Ideal Postcodes Connector allows bank clerks to verify full or partial addresses from public records. It can be further enhanced via FintechOS Studio adapting it to business requirements. The result is a fully functional and personalized searching tool that collects the needed information in a few steps.

> **NOTE**
> The Ideal Postcodes Connector can be used only for UK customers. The information is retrieved from Royal Mail and Ordnance Survey databases.

Business Pain Points

The Ideal Postcodes Connector is aimed at resolving some of the pain points when looking up addresses:

- searching for valid addresses can be time consuming

- requires verified and updated information

- manually inputting addresses for legal entities or consumers take time and human errors may occur

Key features

Once integrated in a digital journey, the Ideal Postcodes Connector solves these pain points by offering a simple way to collect the needed data.

- The addresses are valid and up-to-date.

- Easy to use. It can be added to a digital journey to simplify the search and address validation process.

- Time-efficient. The data no longer needs to be added manually.

Installation

Follow the bellow steps to install FintechOS Ideal Postcodes Connector.

Prerequisites:

1. Download the package from FintechOS Marketplace.

2. Obtain the Ideal Postcodes user name and password.

    NOTE

    The user name and password are obtained from the Ideal Postcodes platform.

3. Install the package on an environment FintechOS 21.1.6.0 and above with the Innovation Studio, Portal and B2C Portal configured. For details on B2C, see Setting B2C Environment.

4. Configure the **JobServer**. For information regarding FTOS JobServers, see the JobServer section from the Core DPA Platform 2 Administration Guide.

Run the SQL script

In the SQL Database, run the **insert_POST.sql** script found in the Ideal Postcodes package downloaded from the FintechOS Marketplace. The script starts installing the option set items of an options set if they are not yet installed.

NOTE
The INSERT INTO statements from the **insert_POST.sql** script are in a transaction

> script that ends with a ROLLBACK (COMMIT) statement. Run first the script with ROLLBACK. If it is executed without errors, run it with COMMIT.

Set up web.config keys:

In the physical location of the installed digital journey, add the following keys in web.config before `<appSettings>`:

- <add key="FTOS_EXTD_POST_ApiUrl" value="https://api.ideal-postcodes.co.uk/v1" />
- <add key="FTOS_EXTD_POST_ApiKey" value="apikey" />

Solution Walkthrough

The FintechOS Ideal Postcodes Connector offers the possibility of accessing and retrieving addresses stored in the Ideal Postcodes platform. This functionality allows financial institutions employees to look up full or partial addresses and postal codes in order to verify the customers' address details.

By integrating this connector in a digital journey, it retrieves the needed information in real-time and displays accurate addresses, geolocations, Unique Property Reference Numbers (UPRN), and other details. Using this functionality helps speed up the registration of new customers and validate existing data by automatically filling in the address filelds.

FintechOS offers the possibility of accessing Ideal Postcodes databases through the Ideal Postcodes Connector. In order to have access to public records, the below digital journey is proposed.

> **IMPORTANT!**
> The below walkthrough is not a representation of a stand-alone application. It represents a proposition on how to use this connecter once it is integrated in a digital journey to search and retrieve accurate address data.

For a detailed walkthrough on how to search for company information, see the Search Postcodes and Addresses page.

Search Postcodes and Addresses

The FintechOS Ideal Postcodes Connector offers the possibility of searching databases for valid address data. Institutions can add the connector to a digital journey and retrieve the needed information from public records. This functionality helps speed up onboarding processes and validating addresses.

> **IMPORTANT!**
> The below walkthrough is a proposition on how to use the FintechOSIdeal Postcodes Connector in a digital journey to search for accurate address data.

Follow the below steps to access and retrieve information using this connector.

1 Access Ideal Postcodes Connector

1. Log into the FintechOS Portal using the given credentials.

2. Log into the Ideal Postcodes platform with the credentials provided by them.

> **NOTE**
> The user and password are obtained from the Ideal Postcodes platform. Additional information can be found on the Installation page.

3. From the FintechOS Portal main menu expand **My Projects** and click **Postcodes**.

4. Select **Search by Address or Postcode**. The **FTOS_EXTD_POST_Addresses_Search List** page opens.

5. At the top-right corner of the screen, click the **Insert** button. The **Add FTOS_ EXTD_POST_Addresses_Search- Addresses Search** page opens. Fill in the following fields:

ADD ADDRESSES SEARCH - ADDRESSES SEARCH

| 221b baker street | Postcode Search | UDPRN Search |

Search by ADDRESS

Collapse filters ↑

Limit	Page	Filter	Postcode Type
Postcode Outward	Postcode Area	Postcode Sector	Post Town
Uprn	Country	Su Organisation Indicator	Box
Bias Postcode Outward	Bias Postcode Area	Bias Postcode Sector	Bias Post Town
Bias Thoroughfare	Bias Country	Bias Postcode	Bias Lonlat

Next

HINT

To make a search, only the postcode or a part of the address (for example the street name) is needed. Adding extra information in the available fields returns structured and accurate data. To add additional data to the search, click the **Expand filters ↓** button.

NOTE

When the search is made using the address and the postal code, then the results returned are based on the address. If the inputted data includes the UDPRN number, then the results returned are based only on the UDPRN.

Field	Required	Type	Description
Address Search	Yes	Text	Input the UK address. details
Postcode Search	Yes	Text	Input the UK postal code. For example: SW1A 2AA

Field	Required	Type	Description
UDPRN	Yes	Text	Input the Unique Delivery Point Reference Number. The UDPRN is an 8-character code used by Royal Mail to identify unique delivery addresses.
Limit	No	Numeric	Specifies the maximum number of suggestions to retrieve. The default limit is 10, unless a postcode is queried, then all addresses at that postcode are returned.
Page	No	Numeric	0 indexed indicator of the page of results to receive. Virtually all postcode results are returned on page 0. A small number of Multiple Residence postcodes may need pagination (for example, if there are more than 100 premises).
Filter	No	Text	Comma separated whitelist of address elements to return.
Postcode Outward	No	Text	Filter by outward code.

Field	Required	Type	Description
Postcode Area	No	Text	The postcode_area. For example: SW Can be combined with query to perform a postcode and building number/ name search.
Postcode Sector	No	Text	The postcode sector. For example: SW1A 2.
Post Town	No	Text	Filter by town.
UPRN	No	Text	Filter by the Unique Property Reference Number (UPRN). UPRNs are the unique identifier for every addressable location in UK.
Country	No	Text	Filter by country. Possible values are • England • Scotland • Wales • Northern Ireland • Jersey • Guernsey • Isle of Man

Field	Required	Type	Description
SU Organisation Indicator	No	Text	Filter by Organisation Indicator. Useful for separating organisational and residential addresses.
Box	No	Text	Restrict search to a geospatial box determined by the 'top-left' and 'bottom-right' gelocations. Only one geospatial box can be provided.
Bias Postcode Outward	No	Text	The address results that closely matches the chosen postcode outward value.
Bias Postcode Area	No	Text	The address results that closely matches the chosen postcode area value.
Bias Postcode Sector	No	Text	The address results that closely matches the chosen postcode sector value.
Bias Post Town	No	Text	The address results that closely matches the chosen postcode town value.
Bias Thoroughfare	No	Text	The address results that closely matches the chosen thoroughfare value.

Field	Required	Type	Description
Bias Country	No	Text	The address results that closely matches the chosen country value.
Bias Postcode	No	Text	The address results that closely matches the chosen postcode value.
Bias Lonlat	No	Text	Bias search to a geospatial circle determined by an origin and radius in meters. Maximum radius is 50000.

2 Address Data Returned

6. Click the **Next** button. The **EDIT FTOS_EXTD_POST_Addreses_search - Addresses Search Results** page opens. The following information is displayed:

EDIT FTOS_EXTD_POST_ADDRESSES_SEARCH - ADDRESSES SEARCH RESULTS

ADDRESSES LIST

	Country	County	Postal Code	Thoroughfare
	abc	abc	abc	abc
	England	North Humberside	HU2 8HE	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	Staffordshire	ST4 3AF	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	London	W1U 6FY	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	Scotland	Stirlingshire	FK8 1BJ	Baker Street

Previous   Finish

Field	Required	Type	Description
Country	No	No	Displays the country from the address.
County	No	No	Displays the county from the address.
Postal Code	No	No	Display's the postal code from the address.
Thoroughfare	No	No	Displays the main street or avenue from the address.

7. Click the **Finish** button. The **Search Lexis Nexis List** page is displayed.

> **NOTE**
> To make changes to the search, click the **Previous** button to go back to the **Add FTOS_EXTD_POST_Addresses_Search- Addresses Search** page.

3 Additional Address Data

8. Double-click on the wanted record from the results list to view additional information. The **Edit FTOS_EXTD_POST_Addresses** page opens displaying the following additional information:

EDIT FTOS_EXTD_POST_ADDRESSES_SEARCH - ADDRESSES SEARCH RESULTS

ADDRESSES LIST

	Country	County	Postal Code	Thoroughfare
	abc	abc	abc	abc
	England	North Humberside	HU2 8HE	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	Staffordshire	ST4 3AF	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	London	W1U 6FY	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	England	North Humberside	HU2 8HE	Baker Street
	Scotland	Stirlingshire	FK8 1BJ	Baker Street

Previous   Finish

> **HINT**
> In the **Edit FTOS_EXTD_POST_Addresses** page, information can be added or edited, depending on the case.

Field	Required	Type	Description
Administrative County	No	Text	The current administrative county to which the postcode has been assigned.
Building Name	No	Text	The building name.
Building Number	No	Text	The building number.
Country	No	Text	The country to which the postcode belongs to. Possible values are • England • Scotland • Wales • Northern Ireland • Jersey • Guernsey • Isle of Man
County	No	Text	The county from the address.
Delivery Point Suffix	No	Text	A unique Royal Mail two-character code (the first numeric and the second alphabetical), which, when added to the postcode, it enables each live delivery point to be uniquely identified.
Department Name	No	Text	Used to supplment Organisation Name to identify a department within the organisation.

Field	Required	Type	Description
Dependant Locality	No	Text	The dependenat locality of the address.
Dependant Thoroughfare	No	Text	When a thoroughfare name is used twice in the same Post Town, the dependant thoroughfare is added to uniquely identify a delivery point.
Administrative District	No	Text	The administrative district.
Double Dependant Locality	No	Text	Used to supplement the dependant locality,
Eastings	No	Text	Eastings reference using the Ordnance Survey National Grid reference system.
Latitude	No	Text	The latitude of the postcode (WGS84/ETRS89)
Address Line One	No	Text	The first address Line. Often contains premise and thoroughfare information.
Address Line Two	No	Text	The second address Line. Often contains thoroughfare and locality information.
Address Line Three	No	Text	The third address line.
Longitude	No	Text	The longitude of the postcode (WGS84/ETRS89).
Name	No	Text	The name of the address.
Latitude	No	Text	The latitude of the postcode (WGS84/ETRS89)
Organisation Name	No	Text	Name of the organisation registered at this address.
Postal Code Search Lookup ID	No	Text	The postal code ssearch lLookup ID.
PO Box number	No	Text	The PO Box number.

Field	Required	Type	Description
Postal County	No	Text	Postal counties were used for the distribution of mail before the Postcode system was introduced in the 1970s. The Former Postal County was the Administrative County at the time.
Postal Code	No	Text	Correctly formatted postcode.
Postcode Inward Code	No	Text	The second part of a postcode is known as the inward Code. e.g. The inward code of ID1 1QD is 1QD.
Postcode Outward Code	No	Text	The first part of a postcode is known as the outward code. e.g. The outward code of ID1 1QD is ID1.
Postcode Type	No	Text	It can only take the values "S" or "L" indicating small or large respectively.
Post Town	No	Text	Post Town is mandatory for delivery of mail to a delivery point. This is not necessarily the nearest town geographically, but a routing instruction to the Royal Mail delivery office sorting mail for that delivery point.
Premise	No	Text	Number to identify premise on a thoroughfare or dependant thoroughfare
Sub Building Name	No	Text	When a premise is split into individual units such as flats, apartments or business units.

Field	Required	Type	Description
Small User Organisation Indicator	No	Text	Small User Organisation Indicator can have the values "Y" or space. A value of "Y" indicates that a Small User Organisation is present at this address.
Thoroughfare	No	Text	Also known as the street or road name. In general each Thoroughfare Name will have a separate Postcode. Longer Thoroughfares with high number ranges often have multiple Postcodes covering the entire length of the road, with breaks at suitable points e.g. junctions or natural breaks in the road.
Traditional County	No	Text	Traditional counties are provided by the Association of British Counties. It's historical data, and can date from the 1800s.
Unique Delivery Point Reference Number	No	Text	The unique delivery point reference number.
Multiple Residence Unique ID	No	Text	UMPRNs are a unique numeric code for any Multiple Residence household on the optional Multiple Residence dataset
Unique Property Reference Number	No	Text	Unique Property Reference Number is maintained by the Ordnance Survey (OS). Local governments in the UK have allocated a unique number for each land or property.

Field	Required	Type	Description
Administrative Ward	No	Text	The current administrative/electoral area to which the postcode has been assigned.

9. At the top-right corner of the screen, click the **Save and Close** button. The **EDIT FTOS_EXTD_POST_Addreses_search - Addresses Search Results** displays.

Address Autocomplete

When searching for addresses in the Ideal Postcodes databases, the FintechOS Ideal Postcodes Connector offers a search-as-you-type functionality in order to return a list of address suggestions that match the query ordered by relevance score.

IMPORTANT!
The below walkthrough is a proposition on how to use the FintechOSIdeal Postcodes Connector in a digital journey to search for accurate address data.

Follow the below steps to access and retrieve information using the address autofill functionality.

1 Access Ideal Postcodes Connector

1. Log into the FintechOS Portal using the given credentials.

2. Log into the Ideal Postcodes platform with the credentials provided by them.

NOTE
The user and password are obtained from the Ideal Postcodes platform. Additional information can be found on the Installation page.

3. From the FintechOS Portal main menu expand **Connectors** and click **Ideal Postcodes**.

4. Select Address Autocomplete. The **FTOS_EXTD_POST_addressesAutocomplete List** page opens.

5. At the top-right corner of the screen, click the **Insert** button. The **Add Addresses Autocomplete - Address Search** page opens. Fill in the following field:

ADD ADDRESSES AUTOCOMPLETE - ADDRESS SEARCH

Please enter your address

221B baker

Q Search...

Address suggestion			UDPRN
Q		Q	
Sherlock Holmes Museum, 221b Baker Street, London, NW1			17646242
221b Bakers, 1 Bridge Street, Framlingham, Woodbridge, IP13			11618942

Next

Field	Required	Type	Description
Address	No	Text	Input the address to start the search. The suggestions are displayed in real-time.

2 Address Data Displayed

6. Click the **Next** button. The **Edit Addresses Autocomplete - Display Address Results** page opens. The following information is displayed:

EDIT ADDRESSES AUTOCOMPLETE - DISPLAY ADDRESS RESULT

Display address

ADDRESSES LIST

| + Insert | ✕ Delete | 🖹 Export | ⟳ Refresh |

☐	Address Line One	Unique Delivery Poi...	Postal Code	County	Administrative Distr...	Thoroughfare
	abc	abc	abc	abc	abc	abc
	Sherlock Holmes M...	17646242	NW1 6XE	London	Westminster	Baker Street

Finish

Field	Required	Type	Description
Address Line One	No	Text	The first address Line. Often contains premise and thoroughfare information.
Unique Delivery Point Reference Number	No	Text	The unique delivery point reference number.
Postal Code	No	Text	Correctly formatted postcode.
County	No	Text	The county from the address.
Administrative District	No	Text	The administrative district.

Field	Required	Type	Description
Thoroughfare	No	Text	Also known as the street or road name. In general each Thoroughfare Name will have a separate Postcode. Longer Thoroughfares with high number ranges often have multiple Postcodes covering the entire length of the road, with breaks at suitable points e.g. junctions or natural breaks in the road.

7. Click the **Finish** button. The **FTOS_EXTD_POST_addressesAutocomplete List** page opens.

HINT

To view additional address data, double-click on the record from the results list. The information displayed is detailed in the Additional Address Data section.

Configurations Walkthrough

The following chapter of this guide is meant to explain how to use the Ideal Postcodes Connector in digital journeys, as well as the technical details of how the connector helps return data.

The Ideal Postcodes Connector can be integrated in a digital journey to simplify the address verification process when onboarding new customers by providing bank employees easy access to the Ideal Postcodes database. The information retrieved is updated and it offers a better insight on current or potential customers and businesses.

For more information on how to use the connector in digital journeys and the API methods, see the following pages:

- Using the Ideal Postcodes Connector in Digital Journeys

- API Methods

Using Ideal Postcodes Connector in Digital Journeys

The Ideal Postcodes Connector consists of a digital journey, client side scripts, and two endpoint. Below are the steps used when calling the connector.

1. Before calling the connector, the parameters must be set. The environment settings required for the API search are set through the below variables.

Setting the Paramenters Example

- FTOS_EXTD_POST_AddressesSearch:

```
const connectorsApisUrl = getAppSetting("FTOS_EXTD_POST_
ApiUrl")
const postcodesApiKey = getAppSetting("FTOS_EXTD_POST_
ApiKey")
```

- FTOS_EXTD_POST_AddressesAutocomplete:

```
const connectorsApisUrl = getAppSetting("FTOS_EXTD_POST_
ApiUrl")
const postcodesApiKey = getAppSetting("FTOS_EXTD_POST_
ApiKey")
```

2. Use the `ebs.callActionByName` with the FTOS_EXTD_POST_AddressesSearch parameter and the `ebs.callActionByNameAsync` function with the FTOS_EXTD_POST_AddressesAutocomplete parameter when searching for certain information in the digital journey.

3. Based on the search options, the endpoint is called and the search data is returned.

Calling from the Digital Journey Frontend Example

- FTOS_EXTD_POST_AddressesSearch:

```
let searchObj = {}

searchObj.address = formData.model.searchTerm
searchObj.postcode = formData.model.postcode
searchObj.udprn = formData.model.udprn

searchObj.filters = {
    'limit': formData.model.limit,
    'page': formData.model.page,
    'filter': formData.model.filter,
    'postcode_outward': formData.model.postcodeOutward,
    'postcode_area': formData.model.postcodeArea,
```

```
      'postcode_sector': formData.model.postcodeSector,
      'post_town': formData.model.postTown,
      'uprn': formData.model.uprn,
      'country': formData.model.country,
      'postcode_type': formData.model.postcodeType,
      'su_organisation_indicator':
formData.model.suOrganisationIndicator,
      'box': formData.model.box,
      'bias_postcode_outward':
formData.model.biasPostcodeOutward,
      'bias_postcode': formData.model.biasPostcode,
      'bias_postcode_area': formData.model.biasPostcodeArea,
      'bias_postcode_sector':
formData.model.biasPostcodeSector,
      'bias_post_town': formData.model.biasPostTown,
      'bias_thoroughfare': formData.model.biasThoroughfare,
      'bias_country': formData.model.biasCountry,
      'bias_lonlat': formData.model.BiasLonlat
  }

  const filters = []
  for (let i = 0; i < filters.length; i++) {
      searchObj.filters.filters[i] = formData.model.filters[i]
  }

  ebs.callActionByName('FTOS_EXTD_POST_AddressesSearch', {
  query: searchObj, pcSearchLookupId: formData.id })
```

- FTOS_EXTD_POST_AddressesAutocomplete:

```
ebs.callActionByNameAsync('FTOS_EXTD_POST_
AddressesAutocomplete', { query: { address: inputValue,
recordId: recordId } })
      .then(function (res) {
          searchResult = res.UIResult.Data.response
          if (searchResult.code !== 2000) {
              ebs.showMessage(searchResult.response,
'error')

              return
          }
          let companiesArray = []
          const resArray = searchResult.result.hits
          for (let key in resArray) {
```

```
                    companiesArray.push(resArray[key])
            }
            updateGrid(companiesArray)
        })
```

API Methods

The Ideal Postcodes Connector uses API methods to retrieve address data. The methods are detailed below.

Postal Code Search

Returns the complete list of addresses for a postcode.

Parameters:

postcode (required)	string (Postcode) `[ 6 .. 8 ] characters` Example: `SW1A 2AA` Postcode to retrieve
api_key (required)	string (API Key) Example: `api_key=ak_` `hk71kco54zGSGvF9eXXrvvnMOLLNh` Your Ideal Postcodes API Key. Typically beings `ak_`. Available from your dashboard

filter	string (Filter) Example: `filter=line_1,line_2,line_3` Comma separated whitelist of address elements to return. E.g. `filter=line_1,line_2,line_3` returns only `line_1`, `line_2` and `line_3` address elements in your response
page	integer <int32> (Page) `>= 0` Default: `0` Example: `page=0` 0 indexed indicator of the page of results to receive. Virtually all postcode results are returned on page 0.

Call Example

Request:

```
{
    "ApiInfo": {
        "Token": "{{access_token}}"
    },
    "Request": {
        "ActionName": "FTOS_EXTD_POST_AddressesSearch",
        "Data": "{ \"query\" : { postcode: \"SW1A2AA\"
}   }"
        }
}
```

Response:

```
{
    "UIResult": {
        "NavigateToEntityPage": false,
        "NavigateToEntityPageOnEdit": false,
        "NavigateToEntityFormName": null,
        "NavigateToEntityName": null,
        "NavigateToEntityId": null,
```

```
        "NavigateToEntityInsertDefaults": null,
        "NavigateToUrl": null,
        "DownloadFile": null,
        "ReloadPage": false,
        "Message": null,
        "IsSuccess": false,
        "Data": "{\"response\":{\"result\":
[{\"postcode\":\"SW1A 2AA\",\"postcode_
inward\":\"2AA\",\"postcode_outward\":\"SW1A\",\"post_
town\":\"LONDON\",\"dependant_locality\":\"\",\"double_
dependant_locality\":\"\",\"thoroughfare\":\"Downing
Street\",\"dependant_thoroughfare\":\"\",\"building_
number\":\"10\",\"building_name\":\"\",\"sub_building_
name\":\"\",\"po_box\":\"\",\"department_
name\":\"\",\"organisation_name\":\"Prime Minister & First
Lord Of The
Treasury\",\"udprn\":23747771,\"umprn\":\"\",\"postcode_
type\":\"L\",\"su_organisation_indicator\":\"\",\"delivery_
point_suffix\":\"1A\",\"line_1\":\"Prime Minister & First
Lord Of The Treasury\",\"line_2\":\"10 Downing
Street\",\"line_3\":\"\",\"premise\":\"10\",\"longitude\":-
0.12767,\"
latitude\
":51.503541,\"
eastings\
":530047,\"
northings\":179951,\"country\":\"England\",\"traditional_
county\":\"Greater London\",\"administrative_
county\":\"\",\"postal_
county\
":\"
London\
",\"
county\
":\"London\",\"district\":\"Westminster\",\"ward\":\"St
James
's\",\"uprn\":\"100023336956\"}],\"code\":2000,\"message\":\
"Success\",\"total\":1,\"page\":0,\"limit\":100},\"pcSearchL
ookupId\":\"5af051d6-d1ed-4eca-acd6-
fe34b9f9f6be\",\"status\":true}",
        "NavigateToPageNo": null
    },
    "Message": null,
    "IsSuccess": true,
    "ClientScript": null,
    "Serialized": null,
    "ErrorCode": 0
```

```
    }
```

Address Search

This method queries and retrieves addresses.

Parameters:

api_key (required)	string (API Key) Example: `api_key=ak_ hk71kco54zGSGvF9eXXrvvnMOLLNh` Your Ideal Postcodes API Key. Typically beings ak_. Available from your dashboard
query	string Specifies the address you wish to query. Query can be shortened to q=
limit	integer <int32> (Limit) `[ 1 .. 100 ]` Default: `10` Example: `limit=5` Specifies the maximum number of suggestions to retrieve. By default the limit is 10, unless a postcode is queried (then all addresses at that postcode will be returned). Limit can be shortened to `l=`

page	integer <int32> (Page) `>= 0` Default: `0` Example: `page=0` 0 indexed indicator of the page of results to receive. Virtually all postcode results are returned on page 0. A small number of Multiple Residence postcodes may need pagination (i.e. have more than 100 premises).
filter	string (Filter) Example: `filter=line_1,line_2,line_3` Comma separated whitelist of address elements to return. E.g. `filter=line_1,line_2,line_3` returns only `line_1, line_2 and line_3` address elements in your response
postcode_ outward	string (Postcode Outward) Example: `postcode_outward=1AA` Filter by outward code.
postcode	string (Postcode) Example: postcode=SW1A 2AA Filter by postcode. Can be combined with query to perform a postcode + building number/name search.
postcode_area	string (Postcode Area) Example: `postcode_area=SW` Filter by postcode. Can be combined with query to perform a postcode + building number/name search.
postcode_ sector	string (Postcode Sector) Example: `postcode_sector=SW1A 2` Filter by postcode sector, the outward code plus first numeric of the inward code.

post_town	string (Post Town) Example: `post_town=London` Filter by town.
uprn	integer (UPRN) Example: `uprn=100023336956` Filters by UPRN. Does not accept comma separated terms. Only a single term is permitted
country	string (Country) Example: `country=England` Filter by country. Possible values are England, Scotland, Wales, Northern Ireland, Jersey, Guernsey and Isle of Man.
postcode_type	string (Country) Example: `postcode_type=L` Filter by Postcode Type. Useful for separating organisational and residential addresses
su_ organisation_ indicator	string (SU Organisation Indicator) Example: `su_organisation_indicator=Y` Filter by Organisation Indicator. Useful for separating organisational and residential addresses
box	string (Box) Example: `box=2.095,57.15,-2.096,57.14` Restrict search to a geospatial box determined by the "top-left" and "bottom-right" gelocations. Only one geospatial box can be provided.
bias_postcode_ outward	string (Bias Postcode Outward) Bias by outward code

bias_postcode	string (Bias Postcode) Example: `bias_postcode=/addresses?postcode=SW1A2AA&q=10` Bias by postcode. Can be combined with query to perform a postcode + building number/name search.
bias_postcode_area	string (Bias Postcode Area) Example: `bias_postcode_area=The postcode area of SW1A 2AA and N1 6RT are SW and N respectively` Bias by postcode area, the first one or two non-numeric characters of a postcode.
bias_postcode_sector	string (Bias Postcode Sector) Example: `bias_postcode_sector=SW1A 2AA is SW1A 2` Bias by postcode sector, the outward code plus first numeric of the inward code.
bias_post_town	string (Bias Post Town) Bias by town.
bias_thoroughfare	string (Bias Thoroughfare) Bias by street name.
bias_country	string (Bias County) Bias by country. Possible values are England, Scotland, Wales, Northern Ireland, Jersey, Guernsey and Isle of Man.
bias_lonlat	string (Bias Lon/Lat) Example: `bias_lonlat=-2.095,57.15,100` Bias search to a geospatial circle determined by an origin and radius in meters. Max radius is `50000`. Uses the format bias_lonlat=[longitude],[latitude],[radius in meters] Only one geospatial bias may be provided

Call Example

Request:

```
{
    "ApiInfo": {
        "Token": "{{access_token}}"
    },
    "Request": {
        "ActionName": "FTOS_EXTD_POST_AddressesSearch",
        "Data": "{ \"query\" : {    address: \"100 downing
street london\" , filters:{limit: 1}  }    }"
    }
}
```

Respose:

```
{
    "UIResult": {
        "NavigateToEntityPage": false,
        "NavigateToEntityPageOnEdit": false,
        "NavigateToEntityFormName": null,
        "NavigateToEntityName": null,
        "NavigateToEntityId": null,
        "NavigateToEntityInsertDefaults": null,
        "NavigateToUrl": null,
        "DownloadFile": null,
        "ReloadPage": false,
        "Message": null,
        "IsSuccess": false,
```

```
       "Data": "{\"response\":{\"result\":
{\"total\":10000,\"limit\":1,\"page\":0,\"hits\":
[{\"postcode\":\"DE55 2HF\",\"post_
town\":\"ALFRETON\",\"dependant_locality\":\"South
Normanton\",\"double_dependant_
locality\":\"\",\"thoroughfare\":\"Downing
Street\",\"dependant_thoroughfare\":\"\",\"building_
number\":\"100\",\"building_name\":\"\",\"sub_building_
name\":\"\",\"po_box\":\"\",\"department_
name\":\"\",\"organisation_
name\":\"\",\"udprn\":6748763,\"umprn\":\"\",\"postcode_
type\":\"S\",\"su_organisation_indicator\":\"\",\"delivery_
point_suffix\":\"1A\",\"postcode_
inward\":\"2HF\",\"postcode_outward\":\"DE55\",\"line_
1\":\"100 Downing Street\",\"line_2\":\"South
Normanton\",\"line_
3\":\"\",\"premise\":\"100\",\"longitude\":-
1.3396786999999999,\"
latitude\
":53.1050242,\"
eastings\
":444305,\"
northings\":356627,\"country\":\"England\",\"traditional_
county\":\"Derbyshire\",\"administrative_
county\":\"Derbyshire\",\"postal_
county\
":\"
Derbyshire\
",\"
county\
":\"Derbyshire\",\"district\":\"Bolsover\",\"ward\":\"South
Normanton
West\
",\"
uprn\
":\"
100030048392
\
"}]},\"
code\
":2000,\"
message\":\"Success\"},\"pcSearchLookupId\":\"19818973-b854-
4081-a4d3-764eea6d5a14\",\"status\":true}",
       "NavigateToPageNo": null
    },
    "Message": null,
    "IsSuccess": true,
```

```
        "ClientScript": null,
        "Serialized": null,
        "ErrorCode": 0
    }
```

UDPRN Search

Retrieves a UK address based on its Unique Delivery Point Reference Number (UDPRN).

Parameters:

udprn (required)	string UDPRN to be retrieved
api_key (required)	string (API Key)Example: {{api_key=ak_ hk71kco54zGSGvF9eXXrvvnMOLLNh}}Your Ideal Postcodes API Key. Typically beings {{ak_}}.Available from your dashboard
filter	string (Filter)Example: {{filter=line_1,line_2,line_ 3}}Comma separated whitelist of address elements to return.E.g. {{filter=line_1,line_2,line_3}} returns only {{line_1}}, {{line_2}} and {{line_3}} address elements in your response

Call Example

Request:

```
    {
        "ApiInfo": {
            "Token": "{{access_token}}"
        },
        "Request": {
            "ActionName": "FTOS_EXTD_POST_AddressesSearch",
            "Data": "{ \"query\" : {    udprn:
    \"7040203\"   }    }"
        }
    }
```

Response:

```
{
    "UIResult": {
        "NavigateToEntityPage": false,
        "NavigateToEntityPageOnEdit": false,
        "NavigateToEntityFormName": null,
        "NavigateToEntityName": null,
        "NavigateToEntityId": null,
        "NavigateToEntityInsertDefaults": null,
        "NavigateToUrl": null,
        "DownloadFile": null,
        "ReloadPage": false,
        "Message": null,
        "IsSuccess": false,
        "Data": "{\"response\":{\"result\":
{\"postcode\":\"DL1 2YG\",\"postcode_
inward\":\"2YG\",\"postcode_outward\":\"DL1\",\"post_
town\":\"DARLINGTON\",\"dependant_locality\":\"\",\"double_
dependant_locality\":\"\",\"thoroughfare\":\"Downing
Court\",\"dependant_thoroughfare\":\"\",\"building_
number\":\"10\",\"building_name\":\"\",\"sub_building_
name\":\"\",\"po_box\":\"\",\"department_
name\":\"\",\"organisation_
name\":\"\",\"udprn\":7040203,\"umprn\":\"\",\"postcode_
type\":\"S\",\"su_organisation_indicator\":\"\",\"delivery_
point_suffix\":\"1N\",\"line_1\":\"10 Downing
Court\",\"line_2\":\"\",\"line_
3\":\"\",\"premise\":\"10\",\"longitude\":-
1.5426173,\"
latitude\
":54.5428546,\"
eastings\
":429689,\"
northings\":516494,\"country\":\"England\",\"traditional_
county\":\"Durham\",\"administrative_county\":\"\",\"postal_
county\":\"County Durham\",\"county\":\"County
Durham\",\"district\":\"Darlington\",\"ward\":\"North
Road\
",\"
uprn\
":\"
100110541757
\
"},\"
code\
":2000,\"
message\":\"Success\"},\"pcSearchLookupId\":\"61934243-5bf5-
44d2-b6d3-a7f55e7fdb21\",\"status\":true}",
```

```
        "NavigateToPageNo": null
    },
    "Message": null,
    "IsSuccess": true,
    "ClientScript": null,
    "Serialized": null,
    "ErrorCode": 0
 }
```

Address Autocomplete

Retrieves a list of address suggestions that match the query.

Parameters:

postcode (required)	string (Postcode) `[ 6 .. 8 ] characters` Example: `SW1A 2AA` Postcode to retrieve
api_key (required)	string (API Key) Example: `api_key=ak_` `hk71kco54zGSGvF9eXXrvvnMOLLNh` Your Ideal Postcodes API Key. Typically beings `ak_`. Available from your dashboard
filter	string (Filter) Example: `filter=line_1,line_2,line_3` Comma separated whitelist of address elements to return. E.g. f`ilter=line_1,line_2,line_3` returns only `line_1`, `line_2` and `line_3` address elements in your response

page	integer <int32> (Page) >= 0 Default: 0 Example: page=0 0 indexed indicator of the page of results to receive. Virtually all postcode results are returned on page 0.

The response is saved in JSON format with the following structure:

xPath	Description
/result[*]/suggestion	Suggested address
/result[*]/urls/udprn	Link to address by UDPRN
/result[*]/udprn	Unique Delivery Point Reference Number
/code	Response code
/message	Response description

Call Example

Request:

```
{
    "ApiInfo": {
        "Token": "{{access_token}}"
    },
    "Request": {
        "ActionName": "FTOS_EXTD_POST_
AddressesAutocomplete",
        "Data": "{ \"query\" : {    address: \"10
down\"  }   }"
    }
}
```

Response:

```
{
    "UIResult": {
        "NavigateToEntityPage": false,
        "NavigateToEntityPageOnEdit": false,
        "NavigateToEntityFormName": null,
        "NavigateToEntityName": null,
```

```
        "NavigateToEntityId": null,
        "NavigateToEntityInsertDefaults": null,
        "NavigateToUrl": null,
        "DownloadFile": null,
        "ReloadPage": false,
        "Message": null,
        "IsSuccess": false,
        "Data": "{\"response\":{\"result\":{\"hits\":
[{\"suggestion\":\"10 Down Avenue, Bath, BA2\",\"urls\":
{\"udprn\":\"/v1/udprn/1155007\"},\"udprn\":1155007},
{\"suggestion\":\"10 Down Road, Teddington, TW11\",\"urls\":
{\"udprn\":\"/v1/udprn/25507639\"},\"udprn\":25507639},
{\"suggestion\":\"10 Down Close, Weymouth, DT4\",\"urls\":
{\"udprn\":\"/v1/udprn/7573952\"},\"udprn\":7573952},
{\"suggestion\":\"10 Down Gate, Peterborough,
PE3\",\"urls\":
{\"udprn\":\"/v1/udprn/18494340\"},\"udprn\":18494340},
{\"suggestion\":\"10 Down Road, Weymouth, DT4\",\"urls\":
{\"udprn\":\"/v1/udprn/7564526\"},\"udprn\":7564526},
{\"suggestion\":\"10 Down Road, Plymouth, PL7\",\"urls\":
{\"udprn\":\"/v1/udprn/19004519\"},\"udprn\":19004519},
{\"suggestion\":\"10 Down Road, Guildford, GU1\",\"urls\":
{\"udprn\":\"/v1/udprn/10082680\"},\"udprn\":10082680},
{\"suggestion\":\"10 Down Street, Leicester, LE4\",\"urls\":
{\"udprn\":\"/v1/udprn/13167602\"},\"udprn\":13167602},
{\"suggestion\":\"10 Down Terrace, Brighton, BN2\",\"urls\":
{\"udprn\":\"/v1/udprn/2257400\"},\"udprn\":2257400},
{\"suggestion\":\"10 Down Royal, Lisburn, BT28\",\"urls\":
{\"
udprn\
":\"
/v1/udprn/
3350898
\
"},\"
udprn\
":3350898}]},\"
code\":2000,\"message\":\"Success\"},\"recordId\":null}",
        "NavigateToPageNo": null
    },
    "Message": null,
    "IsSuccess": true,
    "ClientScript": null,
    "Serialized": null,
    "ErrorCode": 0
}
```

In addition, the below methods can be combined to narrow down the search results.

Address and Postal Code Search

Returns the complete list of addresses for a postcode. By combining the two methods, the results returned are more accurate.

Call Example

Request:

```
{
    "ApiInfo": {
        "Token": "{{access_token}}"
    },
    "Request": {
        "ActionName": "FTOS_EXTD_POST_AddressesSearch",
        "Data": "{ \"query\" : { postcode: \"SW1A2AA\"
}  }"
        }
    }
}
```

Response:

```
{
    "UIResult": {
        "NavigateToEntityPage": false,
        "NavigateToEntityPageOnEdit": false,
        "NavigateToEntityFormName": null,
        "NavigateToEntityName": null,
        "NavigateToEntityId": null,
        "NavigateToEntityInsertDefaults": null,
        "NavigateToUrl": null,
        "DownloadFile": null,
        "ReloadPage": false,
        "Message": null,
        "IsSuccess": false,
```

```
        "Data": "{\"response\":{\"result\":
[{\"postcode\":\"SW1A 2AA\",\"postcode_
inward\":\"2AA\",\"postcode_outward\":\"SW1A\",\"post_
town\":\"LONDON\",\"dependant_locality\":\"\",\"double_
dependant_locality\":\"\",\"thoroughfare\":\"Downing
Street\",\"dependant_thoroughfare\":\"\",\"building_
number\":\"10\",\"building_name\":\"\",\"sub_building_
name\":\"\",\"po_box\":\"\",\"department_
name\":\"\",\"organisation_name\":\"Prime Minister & First
Lord Of The
Treasury\",\"udprn\":23747771,\"umprn\":\"\",\"postcode_
type\":\"L\",\"su_organisation_indicator\":\"\",\"delivery_
point_suffix\":\"1A\",\"line_1\":\"Prime Minister & First
Lord Of The Treasury\",\"line_2\":\"10 Downing
Street\",\"line_3\":\"\",\"premise\":\"10\",\"longitude\":-
0.12767,\"
latitude\
":51.503541,\"
eastings\
":530047,\"
northings\":179951,\"country\":\"England\",\"traditional_
county\":\"Greater London\",\"administrative_
county\":\"\",\"postal_
county\
":\"
London\
",\"
county\
":\"London\",\"district\":\"Westminster\",\"ward\":\"St
James
's\",\"uprn\":\"100023336956\"}],\"code\":2000,\"message\":\
"Success\",\"total\":1,\"page\":0,\"limit\":100},\"pcSearchL
ookupId\":\"5af051d6-d1ed-4eca-acd6-
fe34b9f9f6be\",\"status\":true}",
        "NavigateToPageNo": null
    },
    "Message": null,
    "IsSuccess": true,
    "ClientScript": null,
    "Serialized": null,
    "ErrorCode": 0
}
```

Address and Filters Search

Returns a more accurate search list by limiting address suggestions against a list of any filter such as country, town, and others. Multiple filters can be combined.

Call Example

Request:

```
{
    "ApiInfo": {
        "Token": "{{access_token}}"
    },
    "Request": {
        "ActionName": "FTOS_EXTD_POST_AddressesSearch",
        "Data": "{ \"query\" : {    address: \"street\" ,
filters:{limit: 1, bias_postcode_area: \"SW\"}     }    }"
    }
}
```

Response:

```
{
    "UIResult": {
        "NavigateToEntityPage": false,
        "NavigateToEntityPageOnEdit": false,
        "NavigateToEntityFormName": null,
        "NavigateToEntityName": null,
        "NavigateToEntityId": null,
        "NavigateToEntityInsertDefaults": null,
        "NavigateToUrl": null,
        "DownloadFile": null,
        "ReloadPage": false,
        "Message": null,
        "IsSuccess": false,
```

```
        "Data": "{\"response\":{\"result\":
{\"total\":1,\"limit\":10,\"page\":0,\"hits\":
[{\"postcode\":\"SW1A 2AA\",\"post_
town\":\"LONDON\",\"dependant_locality\":\"\",\"double_
dependant_locality\":\"\",\"thoroughfare\":\"Downing
Street\",\"dependant_thoroughfare\":\"\",\"building_
number\":\"10\",\"building_name\":\"\",\"sub_building_
name\":\"\",\"po_box\":\"\",\"department_
name\":\"\",\"organisation_name\":\"Prime Minister & First
Lord Of The
Treasury\",\"udprn\":23747771,\"umprn\":\"\",\"postcode_
type\":\"L\",\"su_organisation_indicator\":\"\",\"delivery_
point_suffix\":\"1A\",\"postcode_
inward\":\"2AA\",\"postcode_outward\":\"SW1A\",\"line_
1\":\"Prime Minister & First Lord Of The Treasury\",\"line_
2\":\"10 Downing Street\",\"line_
3\":\"\",\"premise\":\"10\",\"longitude\":-
0.12767,\"
latitude\
":51.503541,\"
eastings\
":530047,\"
northings\":179951,\"country\":\"England\",\"traditional_
county\":\"Greater London\",\"administrative_
county\":\"\",\"postal_
county\
":\"
London\
",\"
county\
":\"London\",\"district\":\"Westminster\",\"ward\":\"St
James
's\",\"uprn\":\"100023336956\"}]},\"code\":2000,\"message\":
\"Success\"},\"pcSearchLookupId\":\"a46fa77f-4681-412f-b828-
122561d6be7b\",\"status\":true}",
        "NavigateToPageNo": null
    },
    "Message": null,
    "IsSuccess": true,
    "ClientScript": null,
    "Serialized": null,
    "ErrorCode": 0
}
```

Request Responses

The below tables show the API returns for each HTTP request. Two indicators are displayed:

- The HTTP code, which is the server response to a browser's request.

- The API code, which provides a more specific reason for the returned error.

200 Request Success

HTTP Code	API Code	Description
200	2000	Success. Request was completed successfully.

400 Bad Request

This error is returned if the request could not be understood due to some input error.

HTTP Code	API Code	Description
400	4000	Invalid syntax submitted. Some part of your request was malformed or did not match our specifications.
400	4001	Validation failed on your submitted data. Some of the data you provided did not meet our validation requirements, e.g. string length.
400	4005	Invalid start date. Please ensure start dates are provided as a UTC Timestamp in milliseconds.
400	4006	Invalid end date. Please ensure end dates are provided as a UTC Timestamp in milliseconds.
400	4007	Invalid date range. Check if your start and end dates are in the right order.
400	4008	Invalid date range. Check that your date range is 90 days or less.
400	4009	Too many tags. Please specify no more than 3 tags to query.

401 Unauthorised

This error is returned if the authorization credentials are not valid.

HTTP Code	API Code	Description
401	4010	Invalid Key. Theapi_keyyou provided is not valid.
401	4011	Requesting URL not on whitelist. The cross domain request is not coming from a whitelisted URL. You can update or disable your allowed URLs via your Key settings.
401	4012	Failed user authentication. Invaliduser_tokenpresented.
401	4013	Licensee Key is required. Sublicensed keys require you need to present licensee credentials via thelicenseeparameter.

402 Request Failed

Your request is well-formed but are not able to complete your request for another reason.

HTTP Code	API Code	Description
402	4020	Key balance depleted. You're out of lookups on your API Key.
402	4021	Limit reached. One of your lookup limits has been breached for today. This could either be your total daily limit on your key or the individual IP limit. You can either wait for for the limit to reset (after a day) or manually disable or increase your limit.

404 Resource Not Found

The resource you requested does not exist.

HTTP Code	API Code	Description
404	4040	Postcode not found. The postcode you have submitted does not exist.
404	4041	User not found. Your user could not be identified given the credentials you presented.
404	4042	Key not found. Your key could not be identified given the credentials you presented.

HTTP Code	API Code	Description
404	4044	No UDPRN found. No address is associated with the UDPRN queried
404	4045	No licensee found. Your licensee could not be identified given the credentials you presented.
404	4046	No UMPRN found. No Multiple Residence premise is associated with the UMPRN queried.

500 Server Error

A error occurred on our server.

HTTP Code	API Code	Description
500	5000	An error occurred on our end. These errors are logged and queued so we can understand what went wrong. However, if you need speedy resolution please emailsupport@ideal-postcodes.co.uk
500	5001	Akin to 5000.
500	5002	The server took too long to process on our end, so we aborted the request. You may retry the request.