

An Introduction to Ordnance Survey APIs

What is an API?

API: Application Programming Interface. A connection between computers or between computer programs; a type of software interface, offering a service to other pieces of software.

If you imagine an API as a waiter in a restaurant; OS data is the meal, and your 'table' is your website or app. OS APIs provided you with direct access to our detailed, accurate, trusted data, with a variety of functionality options. The data is updated regularly so you always have the latest view.

You can use APIs on your website or apps, to create maps for customer engagement – and hopefully, solve queries, reduce customer contact calls, and try to save money. As an example, a National Trust organisation could host an API on its website to help deal with queries regarding location, directions, parking etc. and therefore reduce customer queries. It's very likely that you've already used an OS API elsewhere, and not noticed.

How do I use APIs?

How you use an API can depend entirely on what you want to use it for, and what kind of service you want to provide. Optimise your organisation's address data, create a 3D rendering of a given area, provide a location look-up service; all this and **much** more can be achieved with our APIs.

Ordnance Survey has eight main APIs from which to choose, which you can use individually, or you can combine and customise them as needed:

OS Maps API

OS Maps API can be an ideal place to get started. Integrate our up-to-date, detailed maps in your website or apps. Your customers can make location-based decisions with confidence, while you can be assured you receive location data as accurate as it can be (removing the overhead of managing complex datasets yourself.)

Read how [the National Library of Scotland used OS Maps API](#) to host geospatial data that's kept updated in a matter of minutes – a process that had previously required days of work.

The OS Maps API can be used as a basemap in GIS, web, or mobile apps. You can also use it to overlay your own data, adding relevancy and context, as appropriate.

OS Features API

The OS Features API adds additional layers of geospatial data, such as buildings, roads, greenspaces and more. Providing this data can help location analysis, by taking full advantage of rich geometries and attributes, to generate new insight.

Available data layers include:

- OS MasterMap Topography Layer with Building Heights
- OS MasterMap Sites Layer (Hospitals, Schools, access points and more)
- OS MasterMap Greenspace Layer (Public parks, private gardens and more)
- OS MasterMap Water Network Layer (Rivers, canals, streams and more)
- OS MasterMap Highways Network (Roads and urban paths)
- OS Detailed Path Network (National Parks only)

The OS Features API allows its users to directly access the most detailed OS data, then filter, select, and query the data as needed. The nature of APIs (i.e., a link between computers or between computer programs) means you don't need to download, store, or manage these large and complex datasets. We take care of that; you can focus on providing your services.

OS Vector Tile API

The OS Vector Tile API is particularly beneficial for data visualisation and creating your own custom maps. You can use it as a basemap in interactive web maps, mobile apps, or compatible GIS; then, customise the style and content to make a map to your chosen design. You can then even tilt the map to view 3D buildings!

Available data layers include:

- Basemap – OS MasterMap Topography Layer with Building Heights and OS Open Zoomstack
- OS MasterMap Sites Layer (Hospitals, Schools, access points and more)
- OS MasterMap Greenspace Layer (Public parks, private gardens and more)
- OS MasterMap Water Network Layer (Rivers, canals, streams and more)
- OS MasterMap Highways Network (Roads and urban paths)
- OS Detailed Path Network (National Parks only)
- OS Boundary-Line

OS Names API

With the OS Names API, you have access to a straightforward, rapid lookup service. Users can search for a name and find it on the map, from a large range of locations, including settlement names, road names, postcodes, and many more.

You can accurately zoom your maps to locations of interest, and search for areas, cities, roads, postcodes, named woodlands, schools, and many other locations and features. The OS Names API also enables users to click on a map and find the nearest feature, sourced from the vast OS Names database. You can even link your own data to co-ordinates, ready to map.

OS Linked Identifiers API

An identifier is a unique reference assigned to a specific thing, such as a postcode. The OS Linked Identifiers API allows you to identify the links between properties, streets, and OS MasterMap identifiers. Provide the identifier you are interested in, and the OS Linked Identifiers API will return the related feature identifiers.

This allows you to find what addresses exist on a given street, or the Unique Property Reference Number (UPRN) for a building on a map, or the Unique Street Reference Number (USRN) for a road, and more.

OS Places API

If you're looking to edit out-of-date (or partial) details of properties in your own databases, or even add unique references to your properties such as a UPRN, OS Places API can help smoothen the process. This API can identify addresses accurately, even if you're making requests with just a partial address. Searches can find the closest address or all within a user-defined area.

Our intuitive address search (geocoding) capabilities means a user can search a full or partial address, a postcode or a UPRN, and find the complete address including its location. They can also click on a map and discover the nearest address.

OS Match & Cleanse API

With OS Match & Cleanse API, our reliable search results can help you cleanse your existing address data records. Partial address information can be transformed into the authoritative address. Datasets can be optimised and made as accurate as possible, which can help interoperability between other datasets that hold address records.

You can use postcodes, UPRNs, or text strings to identify and match your targets, and get information about residential and commercial properties quickly and easily. Then, each address record contains geographic co-ordinates meaning that you can position it accurately on a map.

It's a way of improving efficiency, guaranteeing accuracy, and reducing costs throughout the process.

OS Downloads API

The OS Downloads API lets you automate the discovery and download of OS OpenData, and OS Premium Data. Build it into your data pipelines to improve efficiency by removing data management overheads, and improve the accessibility of OS products.

There are 18 OS OpenData products available:

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| • 1:250 000 Scale Colour Raster™ | • OS Open Greenspace | • OS Open UPRN |
| • Boundary-Line™ | • OS Open Map – Local | • OS Open USRN |
| • Code-Point® Open | • OS Open Names | • OS Open Zoomstack |
| • GB Overview Maps | • OS Open Rivers | • Strategi® |
| • OS Open Linked Identifiers | • OS Open Roads | • OS Terrain® 50 |
| • MiniScale® | • OS Open TOID | • OS VectorMap® District |

There are also 27 Premium OS products available:

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| • 1:25 000 Scale Colour Raster | • OS Downloads API | • OS MasterMap Imagery Layer |
| • 1:50 000 Scale Colour Raster | • OS Features API | • OS MasterMap Topography Layer |
| • AddressBase | • OS Maps API | • OS MasterMap Networks - Water Layer |
| • AddressBase Core | • OS MasterMap Greenspace – Layer | • OS Match & Cleanse API |
| • AddressBase Islands | • OS MasterMap Highways Network – Paths | • OS Places API |
| • AddressBase Plus | • OS MasterMap Highways Network – Roads | • OS VectorMap Local |
| • AddressBase Premium | • OS MasterMap Highways Network - Routing and Asset Management | • OS Vector Tile API |
| • Code-Point | • OS MasterMap Highways Network with speed data | • OS Terrain 5 |
| • Code-Point with Polygons | | • Points of Interest |
| • OS Detailed Path Network | | |

Get started with OS APIs

OS APIs are effectively a set of building blocks; you choose which ones you need, and you decide what to make with them, once you've got them.

Advantages of APIs include:

- Reduce overheads – no need to download, manage, store, serve the data
- Quick access – connect directly to data that is ready to use
- Automation – automate your workflows by integrated APIs
- Updated regularly – no need to update the data yourself, you always have the latest view
- Flexible – APIs can provide efficiencies and help you be more productive

So, if you'd like to get started on creating your own maps, or refreshing your website and apps, visit our [Products page](#) and browse the options available. You can also visit our [Partners page](#) to see what our Partner network (and possibly, your competitors) are doing with our APIs.

You can also read the next blog post in this series, 'Getting started with OS APIs.' We'll provide useful links to tutorials and technical specifications, so you can start bringing your map creations to life.