pitney bowes

Spectrum Technology Platform

Version 12.0

Geocode Middle East

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The Geocode Address Global with the Middle East database provides street-level geocoding for many Middle East countries. It can also determine city or locality centroids, as well as postal code centroids for selected countries.

These Middle East countries are available and licensed as one bundle. Enterprise Geocoding Module Data Release Announcements will list and describe the countries included with the Middle East database.

> **Note:**
>
> Egypt is included with the Middle East bundle, not the Africa bundle.

The Middle East database is an optional part of the Enterprise Geocoding Module. For more information about Enterprise Geocoding Module, see **Enterprise Geocoding Module**.

In this section

Input

Geocode Address Global with the Middle East database takes an address as input.

Input Fields

Geocode Address Middle East takes an address or intersection as input. For Middle East, Geocode Address Global takes an address or intersection as input. To obtain the best performance and the most possible matches, your input address lists should be as complete as possible, free of misspellings and incomplete addresses, and as close to postal authority standards as possible. Most postal authorities have websites that contain information about address standards for their particular country.

The following table lists the input fields used for geocoding locations in Middle East.

Table 1: Input Fields

Field Name	Description
AddressLine1	

Field Name	Description
	One of the following: • For example: **University City Road** Dubai ARE also supports the Arabic character set: طريق المدينة الجامعية دبي **Shaik Khalifa Bin Mohammad Street** Al Moharraq BHR also supports the Arabic character set: شارع الشيخ خليفة بن محمد المحرق **Ruta 125** 40405 Santo Domingo **Gamal Soliman Abu Soliman Street** Abou Ilghait EGY also supports the Arabic character set: شارع جمال سليمان ابو سليمان أبو الغيط **Jamila Street** Baghdad **Al Ebshehi Street** Amman JOR also supports the Arabic character set: شارع طرابلس;;السل شارع **First Circular Road** Green Belt KWT also supports the Arabic character set: طريق الدائري الاول الحزام الاخضر **Shaikh Sabah Il-Salem Il-Sabah Street** Beirut LBN also supports the Arabic character set: شارع الشيخ صباح السالم الصباح بيروت **Arab League Street** Masqat OMN also supports the Arabic character set: شارع جامعة الدول العربية مسقط

Field Name	Description
	Ahmed Bin Mohammad Bin Thany Street Doha QAT also supports the Arabic character set: شارع احمد بن محمد بن ثاني الدوحة **King Faisal Bin Abdel Aziz Road** Hafr Il-Batin SAU also supports the Arabic character set: طريق الملك فيصل بن عبدالعزيز حفر الباطن YEM also supports the Arabic character set: الطريق الدائريصنعاءأمانة العاصمة • This field can also contain the full address. For more information, see **Single Line Input** on page 10
AddressLine2	This field is not used with countries included with the Africa bundle (Product Code XA1), Middle East bundle (Product Code XM1), or Latin America bundle (Product Code XL1). These databases generally have less comprehensive address coverage.
City	The city or town name. For most countries, your input address should use the official city name.
County	The meaning of county varies by country. The majority of countries in the Middle East database (XM1) do not use a county or equivalent as part of an address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • IRQ (Iraq)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used • VNM (Vietnam)—District This field is not used with countries included with the Middle East bundle (Product Code XM1). These African countries generally have less comprehensive address coverage.

Field Name	Description
FirmName	This field is not used with countries included with the Middle East bundle (Product Code XM1). These countries generally have less comprehensive address coverage.
HouseNumber	The building number. You may get better parsing results for some countries if you put the house number in this field instead of AddressLine1. Not every country includes house number data. The Africa and Middle East countries do not generally have house numbers in the data source. **Note:** The house number specified in the HouseNumber field takes precedence over any house number specified in the AddressLine1 field.
LastLine	The last line of the address. • Al Raha Beach Street> **Abu Dhabi** Road 3960 **Madinat Hamad** 154 Anwar Al Sadat Street **2nd Ismailia** Jamila Street **Baghdad** Al Ebshehi Street **Amman** 230 Street **Abdullah Al Mubarak - West Jleeb** Pierre Gemayel Street **Beirut** Al Mujamma Street **Muscat** Ali AL Qabsi Street> **Riyadh**

Field Name	Description
Locality	The meaning of locality varies by country. Generally a locality is a village in rural areas or it may be a suburb in urban areas. When used, a locality typically appears on the last line of the address with the postcode. African and Middle East countries do not use a locality or equivalent as part of an address. However there is no penalty if state/province is used in input address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • IRQ (Iraq)—Not used • JOR (Jordan)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used • VNM (Vietnam)—Not used. • YEM (Yemen)—Not used
PostalCode	The postal code in the appropriate format for the country. The Africa and Middle East databases generally do not have postal code data.
StateProvince	The meaning of State/Province varies by country. Countries in the Africa, Middle East, and Latin America databases do not use a state/province or equivalent as part of an address. However there is no penalty if state/province is used in input address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • IRQ (Iraq)—Not used • JOR (Jordan)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used • YEM (Yemen)—Not used • YEM (Yemen)—Not used

Address Guidelines for Middle East

Geocode Address Global with the Middle East database provides street-level, city, or geographic geocoding for many Middle East countries. These countries are bundled as the Middle East database (Product Code XM1). The geocoder for these countries supports both English and Arabic languages.

Follow these guidelines to provide input that Geocode Address Global can successfully geocode Middle East addresses.

- **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 the Middle East database.

If the input includes a state/province or locality and that input is matched, it does contribute to a higher candidate ranking., However, there is no penalty if state/province or locality is omitted or unmatched.

Single Line Input

Instead of entering each address element in separate fields, you may enter the entire address in the AddressLine1 input field.

For all countries except Japan, you can enter addresses in one or more of these single-line formats.

Note: Not all formats work may work for every country.

```
StreetAddress;PostalCode;City

StreetAddress;City;PostalCode

StreetAddress;City

StreetAddress;City;StateProvince;PostalCode

StreetAddress;Locality

StreetAddress;County;City

PostalCode;StreetAddress

PostalCode;StreetAddress;City
```

```
City;PostalCode;StreetAddress
```

Where:

- *StreetAddress* can be house number and street name in either order (with street type immediately before or after the street name).
- *City* is the town.

Note: Not all of these address elements are used in every country.

Other single-line formats may also be acceptable for many countries.

The matching accuracy for single line input is comparable to that of structured address input. The performance of single line input addresses may be slightly slower than that of structured address input.

For best results, use delimiters (comma, semicolon, or colon) between each address element. For example,

```
University City Road Dubai
```

طريق المدينة الجامعية دبي

```
Shaikh Khalifa Bin Mohammad Street Al Moharraq
```

شارع الشيخ خليفة بن محمد المحرق

```
Gamal Soliman Abu Soliman Street, Abou Ilghait
```

شارع جمال سليمان ابو سليمان أبو الغيط

```
Jamila Street;Baghdad
```

```
Al Ebshehi Street Amman
```

```
First Circular Road, Green Belt
```

طريق الدائري الاول الحزام الاخضر

```
Shaikh Sabah Il-Salem Il-Sabah Street, Beirut
```

بيروت;شارع الشيخ صباح السالم الصباح بيروت

```
Arab league Street, Masqat
```

شارع جامعة الدول العربية مسقط

```
Ahmed Bin Mohammad Bin Thany Street, Doha
```

شارع احمد بن محمد بن ثاني الدوحة

```
King Faisal Bin Abdel Aziz Road, Hafr Il-Batin
```

طريق الملك فيصل بن عبدالعزيز حفر الباطن

Punctuation is ignored for geocoding purposes.

Guidelines for Single Line Input

- Punctuation is generally ignored, however you may improve results and performance by using separators (commas, semicolons, etc.) between different address elements.
- The country is not required. Each country geocoder assumes that the address is in its country.
- Firm information (placename, building name, or government building) is returned if available.

Options

Geocode Address Global allows you to set default processing options through the Management Console. You can override certain settings for individual calls to Geocode Address Global using the API or Spectrum™ Technology Platform client tools, such as Enterprise Designer.

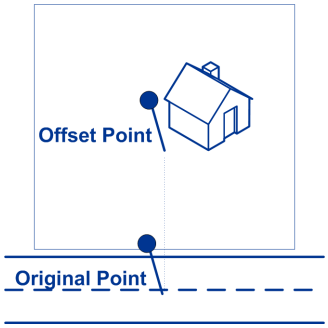
Geocoding Options

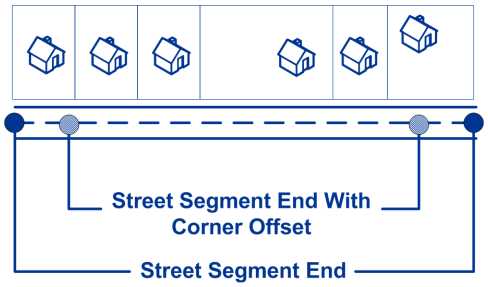
The following table lists the options that control how a location's coordinates are determined.

> **Note:** As the EGM Module transitions its administrative tasks to a web-based Management Console, labels for the options may use different wording than what you see in Enterprise Designer. There is no difference in behavior.

Table 2: Default Geocoding Options

Option Name	Description
Geocode level	Specifies how precisely you want to geocode addresses. One of the following: **Street address** — The geocoder attempts to geocode addresses to a street address, but some matches may end up at a less precise location such as a postal code centroid, intersection, or shape path. **Postal centroid** — The majority of African countries and Middle Eastern countries do not include postal code data, and therefore do not support postal centroid geocoding.If postal code data is available, the geocoder attempts to geocode addresses to the most precise postal code it finds. The advantage of postal code centroid matching is the speed of the operation. The disadvantage of postal code matching is that the geocoder only examines the PostalCode field. If you use street address precision, the geocoder looks at both the street name and the PostalCode field and attempts to return street-level coordinates and optionally fall back to postal code coordinates. **Geographic centroid** — The geocoder attempts to geocode addresses to the geographic centroid of a city or state. This option is not available for the United Kingdom (GBR).
Address point interpolation	Specifies whether to perform address point interpolation. This option only works if you have a point database, installed. This option is available for selected countries only. Address point interpolation uses point data to refine geocode results. By default, the geocoding process estimates the location of an address based on the street numbers at either end of street segment. For example, if a street segment runs from 100 Main St. to 200 Main St., then a request for 150 Main St. will return a location in the middle of the segment. With interpolation, the geocoder finds the position of 180 Main St. in the point data, and it is about two-thirds of the way down the street. Using this information, the geocoder can estimate the position of 150 Main St. based on 100 and 180 Main St. In this case, the geocoder estimates the location of the address slightly away from the center of the segment.
Geographic centroid	Specifies whether to attempt to determine a geographic region centroid when an address-level geocode cannot be determined. This option is not available for the United Kingdom (GBR).
Postal centroid	Specifies whether to attempt to determine a postal code centroid when an address-level geocode cannot be determined. The majority of African countries and Middle Eastern countries do not include postal code data, and therefore do not support postal centroid geocoding.

Option Name	Description
Offset from street	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 **Units** field. The default value varies by country. For most countries, the default is 7 meters. 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.  Street coordinates are accurate to 1/10,000 of a degree and interpolated points are accurate to the millionths of a degree.

Option Name	Description
Offset from corner	Specifies the distance to offset the street end points in street-level matching. The distance is specified in the units you specify in the **Units** field.This value is used to prevent addresses at street corners from being given the same geocode as the intersection. **Note:** Offset is not supported for the United Kingdom (GBR) or Japan (JPN). The default value varies by country: • 12 meters—Australia (AUS), Austria (AUT), Germany (DEU) • 7 meters—For other supported countries, the default offset is 7 meters. The following diagram compares the end points of a street to offset end points. 
Units	Specifies the unit of measurement for the street offset and corner offset options. One of the following: **Note:** Offset is not supported for the United Kingdom (GBR) or Japan (JPN). • Feet • Miles • Meters • Kilometers The default is Meters.
Coordinate system	A coordinate system is a reference system for the unique location of a point in space. Cartesian (planar) and Geodetic (geographical) coordinates are examples of reference systems based on Euclidean geometry. Spectrum™ Technology Platform supports systems recognized by the European Petroleum Survey Group (EPSG). Each country supports different coordinate systems. Depending on the country, you have one or more of the following options:

Option Name	Description
Return Parsed Address	Specifies whether to return the formatted input street address and each input address element in a separate field. This feature can help you understand how the input address was parsed and identify specific input elements that could not be geocoded. For example, a returned HouseNumber.Input could contain an invalid house number in your input address. You can specify parsed input returns for a specific country. For example, a REST API example for Canada is: `Option.CAN.IncludeInputs=Y` **Note:** Data vintage must be 2014 Q4 or newer to get Parsed Address Input returns. Also note that Parsed Address Input elements are not returned for every country. Parsed Address Input elements are returned in separately labeled fields names with a .Input extension. For example: • FormattedInputStreet.Input • City.Input • Country.Input • HouseNumber.Input • Locality.Input • PostalCode.Base.Input • StreetName.Input • StreetSuffix.Input Other labeled fields are possible depending on the input address, country, and data source. **Note:** Parsed Address Input elements are not returned for every country. Also, because Geocode Address World geocodes to the geographic or postal level only (not street address), this does not return Parsed Address Input For many countries, if part of the input address could not be recognized as a specific address element, this content is returned in UnparsedWords.Input. For intersection addresses, the first entered street is returned in StreetName.Input and the second entered street name is returned in IntersectionIdStreet2.Input.

Matching Options

Matching options let you set match restrictions, fallback, and multiple match settings so that the matching can be as strict or relaxed as you need. The strictest matching conditions require an exact match on house number, street name, postal code and no fallback to postal code centroids. The

geocoder looks for an exact street address match within the postal code in the input address. Relaxing the conditions broadens the area in which it searches for a match. For example, by relaxing the postal code, the geocoder searches for candidates outside the postal code but within the city of your input address.

> **Note:** As the EGM Module transitions its administrative tasks to a web-based Management Console, labels for the options may use different wording than what you see in Enterprise Designer. There is no difference in behavior.

Table 3: Default Matching Options

Option Name	Description
Keep multiple matches	Specifies whether to return results when the address matches to multiple candidates in the database. If this option is not selected, an address that results in multiple candidates will fail to geocode. If you select this option, specify the maximum number of candidates to return next to the check box. Specify -1 (minus one) to return all possible candidates.
Return ranges	Specifies whether to return address range information. If you enable this option, the output field `Ranges` will be included in the output. A range is a series of addresses along a street segment. For example, 5400-5499 Main St. is an address range representing addresses in the 5400 block of Main St. A range may represent just odd or even addresses within a segment, or both odd and even addresses. A range may also represent a single building with multiple units, such as an apartment building.
Maximum ranges per candidate	If you choose to return ranges, this option specifies the maximum number of ranges to return for each candidate. Since the geocoder returns one candidate per segment, and since a segment may contain multiple ranges, this option allows you to see the other ranges in a candidate's segment.
Maximum units per range	If you choose to return ranges, this option specifies the maximum number of units (for example, apartments or suites) to return for each range. For example, if you were to geocode an office building at 65 Main St. containing four suites, there would be a maximum of four units returned for the building's range (65 Suite 1, 65 Suite 2, 65 Suite 3, and 65 Suite 4. If you were to specify a maximum number of units as 2, then only two units would be returned instead of all four.

Option Name	Description
Close matches only	Specifies whether to return only those geocoded results that are close match candidates. For example, if there are 10 candidates and two of them are close candidates, and you enable this option, only the two close matching candidates would be returned instead of all 10. To specify what is considered a close match, use the **Close match criteria** options. Address candidates are ranked according to how closely the input address matches these preferences.
Match mode	Specifies how to determine whether a candidate is a close match. One of the following: **Custom** This option allows you to specify which parts of a candidate address must match the input address to be considered a close match. Use the **Close match criteria** check boxes to specify the address elements you want. This is the default value for most countries. **Exact** All of a candidate address's elements must match in order for the candidate to be considered a close match. **Close** Only the candidate address's house number must match in order for the candidate to be considered a close match. For Chile, China, Great Britain, Estonia, India, Indonesia, Latvia, Lithuania, Slovakia, Slovenia, Taiwan, and South Africa, only the street name and town must match. **Relaxed** All candidate addresses are considered a close match.
All input	Specifies whether candidates must match all non-blank input fields to be considered a close match. For example, if an input address contains a city and postal code, then candidates for this address must match the city and postal code to be considered a close match.
House number	Specifies whether candidates must match the house number to be considered a close match. The Africa and Middle East countries do not generally have house numbers in the data source. If you select this option you should also require an exact match on street name. This option does not significantly affect performance. It does, however, affect the type of match if the candidate address corresponds to a segment that does not contain any ranges. The type of match can also be affected when the house number range for a candidate does not contain the input house number. If you relax the house number, you should set the maximum ranges to be returned to a value higher than 0.

Option Name	Description
Street	Specifies whether candidates must match the street name to be considered a close match. If a close match is found, the geocoder attempts expanded street name manipulation, which looks for candidates with names that sound like the input address or that are spelled improperly. This slows down performance but increases the match rate . If the geocoding database is indexed, the performance impact is reduced.
Locality	Specifies whether candidates must match the locality (or equivalent) to be considered a close match. The meaning of Locality varies for different countries. If you do not require exact matches on locality, the geocoder searches on the street address matched to the particular postal code, and considers other localities that do not match the name, but do match the postal code. The majority of African and Middle East countries do not use locality or equivalent as part of an address. If a locality is matched it can contribute to a higher candidate ranking, but there is no penalty if locality is omitted or unmatched. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used
City	Specifies whether candidates must match the city to be considered a close match. If you do not require exact matches on city, the geocoder searches on the street address matched to the particular postal code, and considers other cities that do not match the name, but do match the postal code.

Option Name	Description
County	Specifies whether candidates must match the county (or equivalent) to be considered a close match. The meaning of county varies for different countries. The majority of countries in the Middle East database (XM1) do not use a county or equivalent as part of an address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used
State/Province	Specifies whether candidates must match the state or province (or equivalent) to be considered a close match. The majority of African and Middle East countries do not use a state/province or equivalent as part of an address. If a state/province is matched it can contribute to a higher candidate ranking, but there is no penalty if state/province is omitted or unmatched. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used
Postal code	Specifies whether candidates must match the postal code to be considered a close match. If you do not require exact match on postal codes, the geocoder searches a wider area for a match. While this results in slower performance, the match rate is higher because the request does not need to match exactly when it compares match candidates. Specifies whether candidates must match the postal code to be considered a close match. If you do not require exact match on postal codes, the geocoder searches a wider area for a match. While this results in slower performance, the match rate is higher because the request does not need to match exactly when it compares match candidates. The majority of African countries and Middle Eastern countries do not include postal code data, and therefore do not support postal centroid geocoding.

Option Name	Description
Postal district	Specifies whether the postal district portion of the postcode must match in order for the match to be considered a close match. UK postcodes are divided into two sections: the outward code, which is to the left of the space, and the inward code, which is to the right. The outward code represents the postal district. For example, in the postcode CB3 OHH, the postal district is CB3, which is Cambridge.
Sort candidates using locale	This is a Reverse geocoding option that applies to Greece, Russia, Ukraine, and any other country that supports dual character sets (such as the Middle East countries). Specifies whether candidates are sorted and returned based on the input language. That is, if the input was in Russian, the Russian character candidate is returned first followed by the English language candidate. This will override the dictionary order.

You may want to use a balanced strategy between match rate and geographic precision. That is, you may want to geocode as many records as possible automatically, but at the same time want to minimize the number of weaker matches (false positives). For example, false positives can occur when the geocoder:

- finds a street that sounds like the input street.
- finds the same street in another city (if postal code match is not required).
- finds the street but with a different house number (if house number is not required).

The following settings may achieve a good balance between match rate and precision:

- **Close matches only**—Select this option.
- **Close match criteria**—Select **House number** and **Street** only.
- **Postal centroid**—Do not select this fallback level.

Data Options

The Data tab allows you to specify which databases to use in geocoding. Databases contain the address and geocode data necessary to determine the geocode for a given address. There are two kinds of databases: standard databases and custom databases. Standard databases are those supplied by Pitney Bowes and based on address and geocoding data from postal authorities and suppliers of geographical data. Custom databases are databases you create to enhance or augment standard databases for your particular needs.

The following table lists the options available for specifying which databases to use and the search order of databases.

Table 4: Default Data Options

Option Name	Description
Database	Specifies the database to be used for geocoding. Only databases that have been defined in the Management Console are available.
Database preference	Specifies which geocoding databases to use. One of the following: **Prefer custom database** — Use both standard databases and custom databases, but give preference to candidates from custom databases. Use this option if you feel your custom database is superior to the standard database. **Prefer standard database** — Use both standard databases and custom databases, but give preference to candidates from standard databases. **Use custom databases only** — Use only custom databases. Ignore standard databases. **Use standard databases only** — Use only standard databases. Ignore custom databases. **Use both custom and standard databases** — Use both standard databases and custom databases. In cases where candidates are returned from both, the standard database is preferred. Default. The results from a custom database have a "U" at the end of the result code. Results from an address database have an "A" at the end of the match score. For example: S5HPNTSCZA is a match score that comes from an address database, while S5HPNTSCZU comes from a custom database. For more information, see **Result Codes for International Geocoding** on page 50.
Override the default database search list	Specifies whether to use the database search list specified in the Management Console. If you choose to override the default database search list you may change the search order of the databases in the **Database search list** field. You may also remove databases from the search list. If you override the default database search list, changes to the database resources will not be reflected in the database search list, which may cause geocoding to fail. However, if you do not override the default database search order, any changes to the database resources will be automatically reflected by the geocoder.

Option Name	Description
Database search list	The name of one or more database resources to use in the search process. Use the database name specified in the Management Console. You can specify multiple database resources. If you specify more than one database, list them in order of preference. The order of the databases has an effect when there are close match candidates from different databases. The close matches that are returned come from the database that is first in the search list. Close matches from lower ranked databases are demoted to non-close matches. You can also use the order of the databases to perform fallback processing if you have an both an address point database and a street-level database installed for the country. List the address point database first and the street database second. If the address cannot be geocoded to the address point level, the geocoder will attempt to geocode it to the street level.

Output

The geocoder returns the latitude/longitude, standardized address, and result indicators. Result indicators describe how well the geocoder matched the input address to a known address and assigned a location; they also describe the overall status of a match attempt. The information is returned in upper case.

Geocode Output

Table 5: Geocode Output

Field Name	Description
CoordinateSystem	The coordinate system used to determine the latitude and longitude coordinates. A coordinate system specifies a map projection, coordinate units, etc. An example is EPSG:4326. EPSG stands for European Petroleum Survey Group.
Latitude	Seven-digit number in degrees and calculated to four decimal places (in the format specified).

Field Name	Description
Longitude	Seven-digit number in degrees and calculated to four decimal places (in the format specified).

Address Output

The address may be identical to the input address if the input address was accurate, or it may be a standardized version of the input address, or it may be a candidate address when multiple matches are found.

> **Note:** The output casing for fields for Great Britain has changed to upper case, as of the Q1 2016 Data update.

Table 6: Address Output

Field Name	Description
AddressLine1	First line of the address.
AddressLine2	Second line of the address.
ApartmentLabel	The type of unit, such as apartment, suite, or lot.
ApartmentLabel.Input	The type of unit, such as apartment, suite, or lot as it was input.
ApartmentNumber	Unit number.
ApartmentNumber.Input	Unit number as it was input
City	The municipality name. For Japan, the municipality subdivision (sub-city)

Field Name	Description
City.Input	The municipality name as it was input. For Japan, the municipality subdivision (sub-city) For Japan, the municipality subdivision (sub-city)
Country	The three-letter ISO 3166-1 Alpha 3 country code. For the United Arab Emirates, the country code is ARE. For Bahrain, the country code is BHR. For Egypt, the country code is EGY. For Iraq, the country code is IRQ. For Jordan, the country code is JOR. For Kuwait, the country code is KWT. For Lebanon, the country code is LBN. For Oman, the country code is OMN. For Qatar, the country code is QAT. For Saudi Arabia, the country code is SAU. For Yemen, the country code is YEM. Addresses for countries that do not have a dedicated geocoding stage return the country code associated with the input address. For example, Vatican City addresses return VAT in the Country field, regardless of whether VAT or ITA (Italy) was passed as the country code. Similarly, addresses in Martinique return MTQ (rather than FRA) in the Country field.

Field Name	Description
Country.Input	The three-letter ISO 3166-1 Alpha 3 country code as it was input. For the United Arab Emirates, the country code is ARE. For Bahrain, the country code is BHR. For Egypt, the country code is EGY. For Iraq, the country code is IRQ. For Jordan, the country code is JOR. For Kuwait, the country code is KWT. For Lebanon, the country code is LBN. For Oman, the country code is OMN. For Qatar, the country code is QAT. For Saudi Arabia, the country code is SAU. For Yemen, the country code is YEM. Addresses for countries that do not have a dedicated geocoding stage return the country code associated with the input address. For example, Vatican City addresses return VAT in the Country field, regardless of whether VAT or ITA (Italy) was passed as the country code. Similarly, addresses in Martinique return MTQ (rather than FRA) in the Country field.
County	The meaning of county varies by country. The majority of countries in the Middle East database (XM1) do not use a county or equivalent as part of an address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • IRQ (Iraq)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used • VNM (Vietnam)—District This field is not used with countries included with the Middle East bundle (Product Code XM1). These African countries generally have less comprehensive address coverage.
FirmName	Name of the company or a place name.

Field Name	Description
FirmName.Input	Name of the company or a place name as it was input.
FormattedInputStreet.Input	The street as it was input.
Geocoder.MatchCode	
HouseNumber	The building number for the matched location. For Japan, this field contains the lot number.
HouseNumber.Input	The building number for the matched location as it was input For Japan, this field contains the lot number.
HouseNumberHigh	The highest house number of the range in which the address resides.
HouseNumberLow	The lowest house number of the range in which the address resides.
HouseNumberParity	Indicates if the house number range contains even or odd numbers or both. **E** Even **O** Odd **B** Both **U** Unknown
IntersectionIdStreet2.Input	The second street in an intersection address as it was input.
IsCloseMatch	Indicates whether candidate is a close match.
Language	For reverse geocoded candidates, the two-character language code is returned.
LastLine	Complete last address line (city, state/province, and postal code).

Field Name	Description
Latitude	Latitude of the candidate.
LeadingDirectional	Street directional that precedes the street name. For example, the N in 138 N Main Street.
LeadingDirectional.Input	Street directional that precedes the street name as it was input.
Locality	The meaning of locality varies by country. Generally a locality is a village in rural areas or it may be a suburb in urban areas. When used, a locality typically appears on the last line of the address with the postcode. African and Middle East countries do not use a locality or equivalent as part of an address. However there is no penalty if state/province is used in input address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • IRQ (Iraq)—Not used • JOR (Jordan)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used • VNM (Vietnam)—Not used. • YEM (Yemen)—Not used
Locality.Input	The locality as it was input. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used
Longitude	Longitude of the candidate.

Field Name	Description
NumberOfCandidateRanges	Indicates the number of ranges of which the candidate is a member. A candidate may be a part of multiple ranges if the candidate is a street instead of a building. To specify the number of ranges to return for each candidate, use the **Maximum ranges per candidate** option.
NumberOfRangeUnits	Indicates the number of units included in the range. A unit is an address within a building, such as an apartment or office suite. To specify the number of units to return for each range, use the **Maximum units per range** option.
PostalCode	The postal code for the address. The format of the postcode varies by country. Postcode data is not available for every country.
PostalCode.Addon	The second part of a postcode. This field is not used by most countries.
PostalCode.Addon.Input	The second part of a postcode as it was input. This field is not used by most countries.
PostalCode.Base	The first part of a postcode. For Canadian addresses this will be the FSA. This field is not used by most countries.
PostalCode.Base.Input	The first part of a postcode. For Canadian addresses this will be the FSA. This field is not used by most countries.
PreAddress	Miscellaneous information that appears before the street name.
PrivateMailbox	This field is not currently used.

Field Name	Description
Ranges	

Field Name	Description
	This is a list field containing the address ranges that exist on the street segment where the candidate address is located. A range is a series of addresses along a street segment. For example, 5400-5499 Main St. is an address range representing addresses in the 5400 block of Main St. A range may represent just odd or even addresses within a segment, or both odd and even addresses. A range may also represent a single building with multiple units, such as an apartment building. The Ranges field contains the following sub-fields: **Address** This is a list filed that contains sub-fields for any address elements (AddressLine1, City, and so on) that are different from the candidate's address. **AdditionalFields** A listing of country-specific information related to the address. The information contained in AdditionalFields varies by country. **HouseNumberHigh** The highest address number for the range. **HouseNumberLow** The lowest address number for the range. **SegmentParity** Indicates the side of the street where the range is located. One of the following: **0** It is not known which side of the street the range is located on. **1** The range is on the left side of the street. **2** The range is on the right side of the street. **HouseNumberParity** Indicates whether the range contains odd or even address numbers. One of the following: **0** The range contains both odd and even address numbers. **1** The range contains odd address numbers **2** The range contains even address numbers. **-1** It is not known whether the range contains odd or even house numbers. **TotalRangeUnitsReturned** The number of unit ranges returned for the address. A unit is an address within a building, such as an apartment or suite. **RangeUnits** A list of the ranges of units within the building. An example of units are apartments or suites. **Address** This is a list filed that contains sub-fields for any address elements (AddressLine1, City,

Field Name	Description
	and so on) that are different from the candidate's address. **UnitNumberHigh** The highest unit number. **UnitNumberLow** The lowest unit number.
SegmentCode	A unique ID that identifies a street segment. In Japan, this is the Jusho code. A Jusho Code is a point ID that represents a unique address.
SegmentParity	Indicates which side of the street has odd numbers. **L** Left side of the street **R** Right side of the street **B** Both sides of the street **U** Undetermined
StateProvince	The meaning of State/Province varies by country. Countries in the Africa, Middle East, and Latin America databases do not use a state/province or equivalent as part of an address. However there is no penalty if state/province is used in input address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • IRQ (Iraq)—Not used • JOR (Jordan)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used • YEM (Yemen)—Not used • YEM (Yemen)—Not used
StreetDataType	The default search order rank of the database used to geocode the address. A value of "1" indicates that the database is first in the default search order, "2" indicates that the database is second in the default search order, and so on. The default database search order is specified in the Management Console.

Field Name	Description
StreetName	For most countries, this contains the street name. In Japan, this contains the block. Japanese addresses typically do not have street names.
StreetPrefix	The type of street when the street type appears before the base street name.
StreetSuffix	The type of street when the street type appears after the base street name.
TrailingDirectional	Street directional that follows the street name.
UnitNumberHigh	The highest unit number of the range in which the unit resides.
UnitNumberLow	The lowest unit number of the range in which the unit resides.
Return Parsed Address	The formatted input address can be returned along with a separate returned field for each input address element. Parsed Address Input elements are returned in separately labeled fields names with a .Input extension. See **Result Codes** on page 34

Output Data Options

The following table lists the options that control which data is returned in the output.

Table 7: Output Data Options

Option Name	Description
Return only similar firm names	This option applies to the U.K. only. Specifies whether to return firm names only when the input firm name is similar to the firm name in the geocoding database. For example, if the input firm name is "Pitney Bowes" but the geocoding database returns "Pitney Bowes Software, Inc.", these two firm names are not similar. In most cases the input firm name must match the firm name in the database exactly. Some differences in abbreviations are considered similar enough to result in the firm name being returned.

Result Codes

Result codes contain information about the success or failure of the geocoding attempt, as well as information about the accuracy of the geocode.

> **Note:** As the EGM Module transitions its administrative tasks to a web-based Management Console, labels for the options may use different wording than what you see in Enterprise Designer. There is no difference in behavior.

Table 8: Result Code Output

Field Name	Description
Geocoder.MatchCode	Indicates how closely the input address matches the candidate address.
IsCloseMatch	Indicates whether or not the address is considered a close match. An address is considered close based on the "Close match criteria" options on the Matching tab. **Y** Yes, the address is a close match. **N** No, the address is not a close match.
MultiMatchCount	For street address geocoding, the number of matching address positions found for the specified address. For intersection geocoding, the number of matching street intersection positions found for the specified addresses.

Field Name	Description
Status	Reports the success or failure of the match attempt **null** Success **F** Failure
Status.Code	If the geocoder could not process the address, this field will show the reason. • Internal System Error • No Geocode Found • Insufficient Input Data • Multiple Matches Found • Exception occurred • Unable to initialize Geocoder • No Match Found
Status.Description	If the geocoder could not process the address, this field will show a description of the failure. **Problem + explanation** Returned when Status.Code = Internal System Error. **Geocoding Failed** Returned when Status.Code = No Geocode Found. **No location returned** Returned when Status.Code = No Geocode Found. **No Candidates Returned** The geocoder could not identify any candidate matches for the address. **Multiple Candidates Returned and Keep Multiple Matches not selected** The address resulted in multiple candidates. In order for the candidate address to be returned, you must select the **Keep multiple matches** option.

Field Name	Description	
LocationPrecision	A code describing the precision of the geocode. One of the following:	
	0	No coordinate information is available for this candidate address.
	1	Interpolated street address.
	2	Street segment midpoint.
	3	Postal code 1 centroid.
	4	Partial postal code 2 centroid.
	5	Postal code 2 centroid.
	6	Intersection.
	7	Point of interest. This is a placeholder value. Spectrum databases do not have POI data, so it is not possible to get this return.
	8	State/province centroid.
	9	County centroid.
	10	City centroid.
	11	Locality centroid.
	12 - 15 (LocationPrecision codes)	For AUS, 12 indicates a single close match to a postal (PO Box) location. This can be generated from the standard Street Range database only (not the G-NAF database).For IND, 12 indicates a sub locality (block or sector) match. This is more specific than other geographic matches (city, district, or state). For most countries, LocationPrecision codes 12 through 15 are reserved for unspecified custom items.
	13	Additional point precision for unspecified custom item.
	14	Additional point precision for unspecified custom item.
	15	Additional point precision for unspecified custom item.
	16	The result is an address point.
	17	The result was generated by using address point data to modify the candidates segment data.
	18	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, and thereby return LocationPrecision 18.

Field Name	Description
StreetDataType	The default search order rank of the database used to geocode the address. A value of "1" indicates that the database is first in the default search order, "2" indicates that the database is second in the default search order, and so on. The default database search order is specified in the Management Console.

2 - Reverse Geocode Address Global

Reverse Geocode Address Global determines the address for a given latitude/longitude point. Reverse Geocode Address Global can determine addresses in many countries. The countries available to you depends on which country databases you have installed. For example, if you have databases for Canada, Italy, and Australia installed, Reverse Geocode Address Global would be able to geocode addresses in these countries in a single stage.

> **Note:** Reverse Geocode Address Global does not support U.S. addresses. To geocode U.S. addresses, you must use Reverse Geocode US Location. That performs reverese geocoding specifically for USA addresses.

Before you can work with Reverse Geocode Address Global, you must define a global database resource containing a database for one or more countries. Once you create the database resource, Reverse Geocode Address Global will be available.

In this section

Input

Reverse Geocode Address Global takes longitude and latitude as input.

For GRC, RUS, and JPN, the user's locale determines the language of the returned candidates for reverse geocoding. This can be Greek, Russian, or Japanese for GRC, RUS, and JPN respectively. English is the default locale.

Table 9: Reverse Geocode Global Input

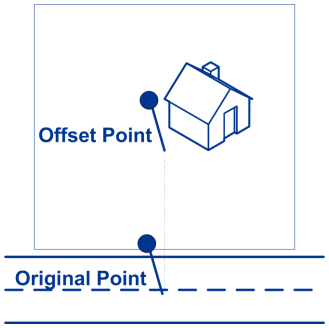
Field Name	Format	Description
Latitude	String	The latitude of the point for which you want address information.
Longitude	String	The longitude of the point for which you want address information.
Country	String	One of the following: • The name of the country in English. • The two-character ISO 3116-1 alpha-2 country code. • The three-character ISO 3116-1 alpha-3 country code.

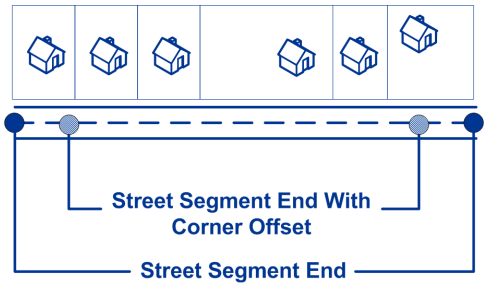
Options

Geocoding Options

Table 10: Default Geocoding Options

Option Name	Description
Search distance	The radius from the input coordinates in which to search for an address. Street segments and points within the radius are considered. The default search radius is 150 meters and the maximum search radius is 1600 meters.
Units	The units in which the search distance is specified. One of the following: • Feet • Miles • Meters • Kilometers

Option Name	Description
Offset from street	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 **Units** field. The default value varies by country. For most countries, the default is 7 meters. 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.  Street coordinates are accurate to 1/10,000 of a degree and interpolated points are accurate to the millionths of a degree.

Option Name	Description
Offset from corner	Specifies the distance to offset the street end points in street-level matching. The distance is specified in the units you specify in the **Units** field.This value is used to prevent addresses at street corners from being given the same geocode as the intersection. **Note:** Offset is not supported for the United Kingdom (GBR) or Japan (JPN). The default value varies by country: • 12 meters—Australia (AUS), Austria (AUT), Germany (DEU) • 7 meters—For other supported countries, the default offset is 7 meters. The following diagram compares the end points of a street to offset end points. 
Units	Specifies the unit of measurement for the street offset and corner offset options. One of the following: **Note:** Offset is not supported for the United Kingdom (GBR) or Japan (JPN). • Feet • Miles • Meters • Kilometers The default is Meters.
Coordinate system	A coordinate system is a reference system for the unique location of a point in space. Cartesian (planar) and Geodetic (geographical) coordinates are examples of reference systems based on Euclidean geometry. Spectrum™ Technology Platform supports systems recognized by the European Petroleum Survey Group (EPSG). Each country supports different coordinate systems. Depending on the country, you have one or more of the following options:

Matching Options

Table 11: Default Matching Options

Option Name	Description
Keep multiple matches	Specifies whether to return results when the coordinates match to multiple candidate addresses in the database. If this option is not selected, coordinates that results in multiple address candidates will fail to geocode. If you select this option, specify the maximum number of candidates to return next to the check box.
Sort candidates using locale	This is a Reverse geocoding option that applies to Greece, Russia, Ukraine, and any other country that supports dual character sets (such as the Middle East countries). Specifies whether candidates are sorted and returned based on the input language. That is, if the input was in Russian, the Russian character candidate is returned first followed by the English language candidate. This will override the dictionary order.

Data Options

The Data tab allows you to specify which databases to use in reverse geocoding. Databases contain the address and geocode data necessary to determine the address for a given point. The following table lists the options available for specifying the search order of databases.

Table 12: Default Data Options

Option Name	Description
Override the default database search list	Specifies whether to use the database search list specified in the Management Console. If you choose to override the default database search list you may change the search order of the databases in the **Database search list** field. You may also remove databases from the search list. If you override the default database search list, changes to the database resources will not be reflected in the database search list, which may cause geocoding to fail. However, if you do not override the default database search order, any changes to the database resources will be automatically reflected by the geocoder.
Database search list	The name of one or more database resources to use in the search process. Use the database name specified in the Management Console. You can specify multiple database resources. If you specify more than one database, list them in order of preference. The order of the databases has an effect when there are close match candidates from different databases. The close matches that are returned come from the database that is first in the search list. Close matches from lower ranked databases are demoted to non-close matches. You can also use the order of the databases to perform fallback processing if you have an both an address point database and a street-level database installed for the country. List the address point database first and the street database second. If the address cannot be geocoded to the address point level, the geocoder will attempt to geocode it to the street level.

Output

Table 13: Reverse Geocode Address Global Output Fields

Field Name	Description
AddressLine1	First line of the address.

Field Name	Description
AddressLine2	Second line of the address.
ApartmentLabel	The type of unit, such as apartment, suite, or lot.
ApartmentNumber	Unit number.
City	The municipality name. For Japan, the municipality subdivision (sub-city)
County	The meaning of county varies by country. The majority of countries in the Middle East database (XM1) do not use a county or equivalent as part of an address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • IRQ (Iraq)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used • VNM (Vietnam)—District This field is not used with countries included with the Middle East bundle (Product Code XM1). These African countries generally have less comprehensive address coverage.
Distance	The distance from input location in meters. If the input coordinates are an exact match for the address, the value is 0.
FirmName	Name of the company or a place name.
Geocoder.MatchCode	Indicates how closely the input coordinates match the candidate address. For more information, see **Reverse Geocoding Codes (R Codes)** on page 55.

Field Name	Description
HouseNumber	The building number for the matched location. For Japan, this field contains the lot number.
HouseNumberHigh	The highest house number of the range in which the address resides.
HouseNumberLow	The lowest house number of the range in which the address resides.
HouseNumberParity	Indicates if the house number range contains even or odd numbers or both. **E** Even **O** Odd **B** Both **U** Unknown
Language	For reverse geocoded candidates, the two-character language code is returned.
LastLine	Complete last address line (city, state/province, and postal code).
LeadingDirectional	Street directional that precedes the street name. For example, the N in 138 N Main Street.

Field Name	Description
Locality	The meaning of locality varies by country. Generally a locality is a village in rural areas or it may be a suburb in urban areas. When used, a locality typically appears on the last line of the address with the postcode. African and Middle East countries do not use a locality or equivalent as part of an address. However there is no penalty if state/province is used in input address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • IRQ (Iraq)—Not used • JOR (Jordan)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used • VNM (Vietnam)—Not used. • YEM (Yemen)—Not used
NumberOfCandidateRanges	Indicates the number of ranges of which the candidate is a member. A candidate may be a part of multiple ranges if the candidate is a street instead of a building. To specify the number of ranges to return for each candidate, use the **Maximum ranges per candidate** option.
NumberOfRangeUnits	Indicates the number of units included in the range. A unit is an address within a building, such as an apartment or office suite. To specify the number of units to return for each range, use the **Maximum units per range** option.
PostalCode	The postal code for the address. The format of the postcode varies by country. Postcode data is not available for every country.
PostalCode.Addon	The second part of a postcode. This field is not used by most countries.
PreAddress	Miscellaneous information that appears before the street name.

Field Name	Description
PrivateMailbox	This field is not currently used.
SegmentCode	A unique ID that identifies a street segment. In Japan, this is the Jusho code. A Jusho Code is a point ID that represents a unique address.
SegmentParity	Indicates which side of the street has odd numbers. **L** Left side of the street **R** Right side of the street **B** Both sides of the street **U** Undetermined
StateProvince	The meaning of State/Province varies by country. Countries in the Africa, Middle East, and Latin America databases do not use a state/province or equivalent as part of an address. However there is no penalty if state/province is used in input address. • ARE (United Arab Emirates)—Not used • BHR (Bahrain)—Not used • EGY (Egypt)—Not used • IRQ (Iraq)—Not used • JOR (Jordan)—Not used • KWT (Kuwait)—Not used • LBN (Lebanon)—Not used • OMN (Oman)—Not used • QAT (Qatar)—Not used • SAU (Saudi Arabia)—Not used • YEM (Yemen)—Not used • YEM (Yemen)—Not used
StreetDataType	The default search order rank of the database used to geocode the address. A value of "1" indicates that the database is first in the default search order, "2" indicates that the database is second in the default search order, and so on. The default database search order is specified in the Management Console.

Field Name	Description
StreetName	For most countries, this contains the street name. In Japan, this contains the block. Japanese addresses typically do not have street names.
StreetPrefix	The type of street when the street type appears before the base street name.
StreetSuffix	The type of street when the street type appears after the base street name.
TrailingDirectional	Street directional that follows the street name.
UnitNumberHigh	The highest unit number of the range in which the unit resides.
UnitNumberLow	The lowest unit number of the range in which the unit resides.

3 - Result Codes for International Geocoding

Candidates returned by Spectrum geocoders return another class of return codes that are referred to as International Geocoding Result Codes. Each attempted match returns a result code in the Geocoder.MatchCode output field.

In this section

International Street Geocoding Result Codes (S Codes)

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.

Table 14: Street (S) Result Codes

S Result Code	Description
S1	Single close match with the point located at postal code centroid.
S3	Single close match with the point located at postal code centroid.
S4	Single close match with the point located at the street centroid. For databases vintage 2014 Q4 or newer, the input house number is returned with the candidate even if no such house number was found. The S4 code is followed by letters and dashes indicating match precision. See **Interpreting S Result Codes** on page 52
S5	Single close match with the point located at a street address position. The S5 code is followed by letters and dashes indicating match precision. For information about these letters, see **Interpreting S Result Codes** on page 52.
S7	Single match with the point 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. The point is interpolated according to the next highest or lowest address point candidate that both intersects the segment and whose house number is contained within the range of houses of the original candidate. By using known address reference points on the street segment, the S7 point can be adjusted to a more accurate position.
S8	Single close 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. S8 returns are possible with point databases only.
SX	Single close match with the point located at street intersection.

Interpreting S Result Codes

For S (street geocoded) international 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 address elements are represented by a dash.

For example, the result code S5--N-SCZA represents a single close 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.

Category	Description	Example
H	House number	18
P	Street prefix direction P is present if any of these conditions are satisfied: • The candidate pre-directional matches the input pre-directional. • The candidate post-directional matches the input pre-directional after pre- and post-directionals are swapped. • The input does not have a pre-directional.	North
N	Street name	Merivale
T	Street type	St

Category	Description	Example
S	Street suffix direction S in result code is present if any of these conditions are satisfied: • The candidate post-directional matches the input post-directional. • The candidate pre-directional matches the input post-directional after pre- and post-directionals are swapped. • The input does not have a post-directional.	W
C	City name	South Brisbane
Z	Postal code	4101
A, G, or U	Database type used to obtain the match. • A—Street Range Address database. • U—Customer (user-defined) database.	A

International Postal Geocoding Result Codes (Z Codes)

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 close match and you specified to fall back to postal code centroid.

Table 15: Postal (Z) Result Codes

Z Result Code	Description
Z1	Postal Code centroid match.

Z Result Code	Description
Z3	Full postal code centroid match. For Canada, this is an FSALDU centroid.

Postal level geocoded candidates return a result code beginning with the letter Z. Middle East can generate a Z1 result code. Country-specific geocoders can often generate more accurate postcode results (with Z2 or Z3 result codes).

If the postal candidate comes from a user dictionary, the letter U is appended to the result. For example, Z1U indicates a postal centroid match from a custom user dictionary.

International Geographic Geocoding Result Codes (G Codes)

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 about the accuracy of the candidate.

Table 16: Geographic (G) Result Codes

G Result Code	Description
G1	State or province centroid. match.
G2	County (district or region) centroid match.
G3	City or town (municipality) centroid match.
G4	Locality (village, suburb, or neighborhood) centroid match.

If the geographic candidate comes from a user dictionary, the letter U is appended to the result code. For example, G4U indicates a locality centroid match from a custom user dictionary.

Reverse Geocoding Codes (R Codes)

Matches in the R category indicate that the record was matched by reverse geocoding. The second two 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.

Example reverse geocoding codes:

Table 17: Reverse Geocoding (R) Result Codes

Reverse Geocoding Code	Description
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.
RS4A	Street centroid candidate for reverse geocoding. Candidate returned from address dictionary.

If the reverse geocoded candidate comes from a user dictionary, the letter U is appended to the result. For example, RS8U indicates a point/parcel level reverse geocode match from a custom user dictionary.

Non-match Codes

The following result codes indicate no match was made:

- **N**—No close match.
- **NX**—No close match for street intersections.
- **ND**—Spectrum™ Technology Platform could not find the geocoding database for the given postal code or municipality/state/province.

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