ESRI Geocoder
With
Tele Atlas® Data

Company location: Lebanon, NH

Web address: www.teleatlas.com

Description: ESRI's geocoder in Esri Business Analyst 10 integrates an address-based approach with more than fifty-four million residential and commercial U.S. address records from the Tele Atlas Address Points database. This database maps street addresses to a physical location so each address is a fixed point and not an interpolation from an address range. The geocoder uses address locators in a cascading fallback approach to ensure a match for as many records as possible. The primary locator utilizes the Tele Atlas *Address Points* database. The secondary locator utilizes the Tele Atlas *Street Address Range* database. Remaining records fall back to the *9-digit ZIP Code* and *5-digit ZIP Code* locators.

The following sections outline the geocoding output field definitions and the Address Locator Properties dialog box.

File Output Field Definitions

LOC_NAME
- Address_Points   Indicates a match to the Tele Atlas Address Points database. Census Block ID and latitude/longitude coordinates are accurate to the address level.
- Street_Address   Indicates a match to the street address. Census Block ID and latitude/longitude coordinates are accurate to the street level.
- Zip4   Indicates a match to the 9-digit ZIP Code. Census Block ID and latitude/longitude coordinates represent the centroid of the 9-digit ZIP Code.
- Zipcode   Indicates a match to the 5-digit ZIP Code. No Census Block ID available for this location. Latitude and longitude coordinates represent the centroid of the 5-digit ZIP Code.
- <blank>   Indicates a records that could not be matched by any of the locators.

STATUS
- M – Matched
- T – Tied (meaning that more than one match candidate has the same score)
- U – Unmatched

SCORE
- 0-100

The score is a value assigned to all potential candidates of an address match. The match score is based on how well the locations found in the reference data matches with the address data being searched. A score can range from 0-100, 100 being a perfect match.

SIDE
This field is populated if LOC_NAME is Address_Points or Street_Address.
- L – address was located on the left side (L) of the street
- R – address was located on the right side (R) of the street

X
The longitude coordinate of the record location.

Y
The latitude coordinate of the record location.

MATCH_ADDR
This field stores the matching full address (address, city, state, zip) for LOC_NAME = Street_Address or Address_Points, the 9-digit ZIP Code for LOC_NAME = Zip4, or the ZIP Code for LOC_NAME = Zipcode.

BLOCK
15 digit Census Block ID – This field is populated if LOC_NAME is Address_Points or Zip4. Use the field BLOCK as the appropriate Census Block ID.

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BLOCKL
15 digit Census Block ID – This field is populated if LOC_NAME is Street_Address. Use BLOCKL as the appropriate Census Block ID if SIDE is L.

BLOCKR
15 digit Census Block ID – This field is populated if LOC_NAME is Street_Address. Use BLOCKR as the appropriate Census Block ID if SIDE is R.

ZIP4_TYPE
This field is populated if LOC_NAME is Zip4. A value of 1 indicates that the latitude and longitude are accurate to the ZIP+4 centroid. A value of 2 indicates that the latitude and longitude are accurate to the ZIP+2 centroid.

Address Locator Properties dialog box
The properties listed below for the four address locators can be modified by clicking the Options button on the Address Input Fields dialog in the Business Analyst Customer or Store Setup Wizards. They can also be modified in Catalog by right-clicking on a locator and selecting Properties.

Matching Options
Place Name Alias Table
The formal or common name of a location, such as the name of a school, hospital, or other landmark. For example, "Memorial Hospital" is the place name for the address "893 Memorial Drive." In geocoding, the address locator can be set to accommodate the use of place name aliases in place of their addresses for matching.

Spelling Sensitivity
The spelling sensitivity setting controls how much variation the address locator will allow when it searches for likely candidates in the reference data. A low value for spelling sensitivity will allow "Mane", "Maine", and "Man" to be treated as match candidates for "Main". A higher value will restrict candidates to exact matches. The spelling sensitivity does not affect the match score of each candidate; it only controls how many candidates the address locator considers. The address locator computes the match score of each candidate and ranks the candidates by score.

The spelling sensitivity setting for an address locator is a value between 0 and 100. By default, the spelling sensitivity is 80. If you are sure your addresses are spelled correctly, you can set a higher spelling sensitivity. If you think your addresses may contain spelling errors, you should use a lower setting. The geocoding process takes longer when you use a lower setting because the address locator has to process and compute scores for more candidates.

Minimum Candidate Score
When an address locator searches for likely candidates in the reference data, it uses this threshold to filter the results presented. Locations that yield a score lower than this threshold are not presented.

The minimum candidate score for an address locator is a value between 0 and 100. By default, this is set to 10 in Business Analyst. If the address locator seems unable to find any likely candidates for an address that you want to geocode, you can lower this setting so candidates with low scores are presented.

The minimum candidate score determines which candidates are presented in the Interactive Review and Find dialog boxes.

Minimum Match Score
The minimum match score setting lets you control how closely addresses have to match their most likely candidate in the reference data to be considered a match for the address. A perfect match yields a score of 100. A match score between 80 and 99 can generally be considered a good match. An address below the minimum match score is considered to have no match.
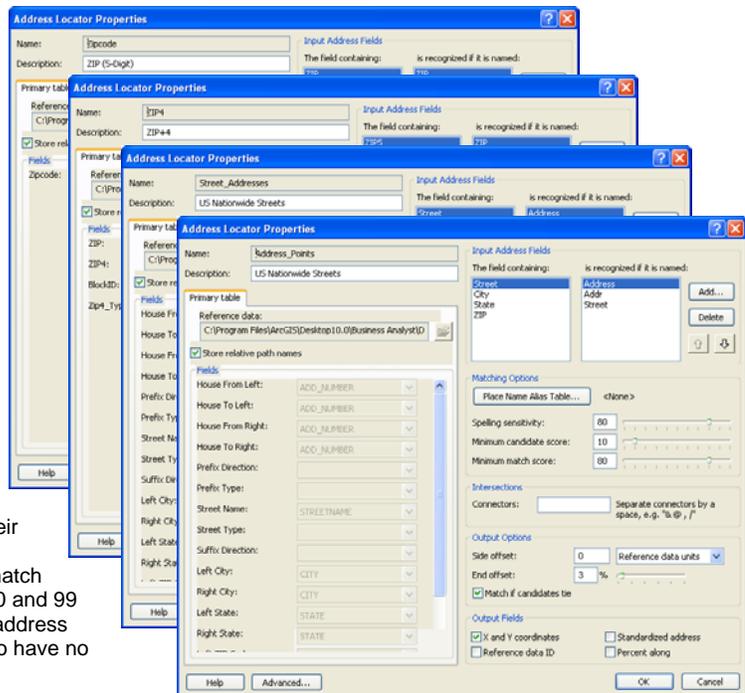
The minimum match score for a locator is a value between 0 and 100. By default, this setting is 80 for the Address_Points locator and 72 for the Street_Address locator. If your application demands that addresses be located with a high level of confidence, you should set a higher minimum match score. If you want to maximize the number of addresses that can be matched and don't mind if some addresses are potentially matched incorrectly, you can use a lower setting.

When batch geocoding, the minimum match score must be met or exceeded to be considered a match. If more than one match is found, the candidate with the highest match score is assigned. The minimum match score is also used in the Find dialog box if you have unchecked the Show all candidates check box. In this case, only candidates that meet or exceed the minimum match score will be presented.

Intersections

Connectors

Address locators that are based on the US One Range, US Streets, and StreetMap address locator styles can geocode street intersections in addition to street addresses. In ArcGIS, intersections are designated as two streets delimited by an intersection connector string. Some examples of intersection address are "Hollywood Blvd. & Vine St." and "Yonge St. | Bloor St."

The intersection connectors setting lets you specify all the strings that the address locator will recognize as intersection connectors. By default, the symbols &, |, and @ are recognized as intersection connectors. You can add additional symbols or words to indicate intersection connectors.

Symbols or words listed as intersection connectors will be used exclusively for intersection addresses. For example, "123 A and B St" will always be considered as an intersection address if "AND" is added as an intersection connector.

Output Options

The Output Options section allows you to specify the precise location on the map where a feature will be drawn.

Side offset

Some address locator styles, including US Streets and StreetMap, use reference data containing address range information for each side of the street. Address locators based on these styles can determine on which side of the street an address is located. For cartographic purposes, you can specify a side offset for geocoded features when using these styles of address locators. When you specify a side offset, the address locator locates geocoded features at the specified distance, based on map units, from the street centerline on the correct side of the street.

End offset

Address locators that use reference data with line geometry, such as those based on the US One Range, US Streets, or StreetMap address locator styles, can interpolate a position along reference features for a geocoded address. To prevent features that are located at the end of a reference feature from falling on top of other features (for example, a cross street), the address locator can apply a squeeze factor, or end offset, to the location of a geocoded address. The end offset setting of an address locator is expressed as a percentage of the length of the reference feature, between 0 and 50 percent. An end offset setting of 0 percent will not offset features from the end of the reference feature. An end offset of 50 percent will locate all features at the middle of the reference feature. By default, the end offset setting for an address locator is 3 percent.

In the illustration below, the address, 100 MAIN ST, has been offset from the street feature by the side offset distance of 25 feet. This address falls at the end of the street feature and is, therefore, in line with the end of the street feature.

When streets intersect at odd angles, specifying an offset distance can have the undesirable effect of placing the address so it appears that the address does not belong to MAIN ST, but rather to OAK AV. This is shown in the illustration below.

An end offset can be specified that adjusts the location of the address toward the center of the street feature. Using an end offset will often rectify the condition shown in the previous diagram. In this example, a squeeze factor of 10 percent was used to move the address toward the center of the street feature by a distance equal to 10 percent of the length of the street feature.
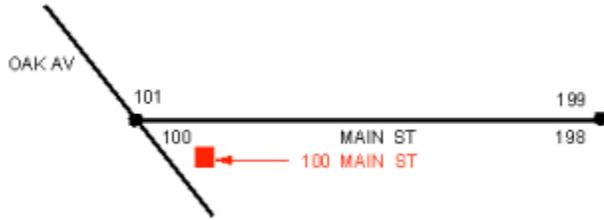
Match if candidates tie
If an address locator finds two or more reference features that have the same highest match score, you can specify whether to match an address arbitrarily to one of these features. Use this setting to specify whether to arbitrarily match these addresses or leave them unmatched. In either case, you can review addresses with tied candidates whether or not they are matched during the interactive review process.

Output fields

X and Y coordinates
Use this setting to create attributes in geocoded feature classes that contain the x,y coordinates of the geocoded features. With this setting, an address locator will create two attribute fields in the output feature class, one for the x-coordinate and one for the y-coordinate of the geocoded features. These attributes are not valid for an address if the address is not matched.

Standardized address
This setting allows you to create an attribute in a geocoded feature class that contains the standardized address. The contents of this field for each address are the address components used by the address locator, separated by the pipe (|) character. This attribute is useful for displaying how the address locator standardized the addresses.

Reference data ID
Use this setting to create an attribute in a geocoded feature class that contains the ID of the reference feature to which an address was matched. This attribute is not valid for an address if the address is not matched.

Percent Along
Address locators based on the US One Range, US Streets, or StreetMap address locator styles can interpolate a position along the reference feature for a geocoded address. Use this setting to create an attribute in a geocoded feature class that contains the position along the reference feature to which the address was matched. The value of this attribute is a number between 0 and 100, with 0 indicating the starting node of the reference feature and 100 indicating the ending node of the reference feature. This attribute is not valid for an address if the address is not matched.