GeoLytics®

GeocodeDVD®
User Guide

Your serial number is printed on your invoice. It is **very important** that your serial number be **entered exactly** as shown. Please note: **it is case sensitive**.

Installation

The disk needs to be in the CD drive to run.

1. Insert the **Disk** into your CD-ROM drive.

2. Click the **Start** button on the taskbar and choose **Run** from the Start menu.
3. Type **D:/setup.exe** (assuming D is the letter of your CD-ROM drive).

OR

2. Click on the "My Computer" Icon, choose the CD Drive (often D:\)
3. Click on the "Set Up" Icon (it looks like a blue computer)

4. Click **OK.**

5. Follow the instructions on the screen. When prompted, enter you Name, your Organization, and your Serial Number. ***Type the serial number without spaces. The serial number is case sensitive so please pay special attention to this.***

6. After the installation is complete, you can start GeocodeDVD at any time by double clicking the GeocodeDVD icon or by choosing Programs on the Start menu and selecting GeocodeDVD.

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Introduction – What is a Geocoder?

A geocoder matches addresses to a database of address sections that are correlated to other spatial information (latitude/longitude, census geographies such as Tracts, Block Groups and Blocks).

Geocoders are based on a pre-determined address dataset that either matches or doesn't match the address as it occurs in your database. The program will take your address (29 Main Street) and then match this address up with the dataset grouping that includes it (Main Street 21–35 odd). It then appends the affiliated Latitude/Longitude coordinates from this address grouping to your address. After the geocoder has determined the latitude/longitude affiliated with the street address it will then match that coordinate to the Tract or Block Group that the point falls within.

How does the GeocodeDVD work?

The GeocodeDVD converts input addresses to geographical coordinates (latitude/longitude) and then converts those to 2000 Census Block codes. Using Census Block level affiliations increases the accuracy of the geocoding (as opposed to using Block Group or Tract level affiliations which is the norm).

The affiliation to the Census Block (and other geographic levels) allows the user to spatially identify where their addresses are. Once the address is spatially located, then data can be appended. With GeoLytics' GeocodeDVD the user can choose to append 60+ major demographic variables derived from the 2000 Census and pertaining to either a Census Block Group or Tract. The data is appended at the Block Group or Tract level. The block group is the smallest level of geography for which the US Census releases many of these variables.

The Professional Version with current year estimates and 5-year projections gives users the option to append up-to-date demographic data right to their geocoded address file in one simple step. The complete variable list is available online at:
http://geolytics.com/USCensus,Geocode,Data,Variables,Products.asp

Interface (Layout of the Screen)

GeocodeDVD's interface is divided into 7 sections – see image on following page:

1. Manual/Batch window (top left)
2. Options page (middle left)
3. Data page (top right)
4. Help page (bottom right)
5. Configuration of the page (bottom left)
6. Minimize/close the window (top right corner)
7. Scroll bar to view data (along top right box)

Manual Geocoding

1. Click on "Manual" from the top left hand tabs. Enter the address you would like to geocode in "Input Address" field. The format should be Street Address, City, ST Zip (if you forget the comma it will not recognize the city name).

2. Change Options if necessary (more below) this is only necessary if you get an error on the matching when running the default setting.

3. Press the "Go" button (it is the green arrow). If successful, the results will be displayed.

4. The results gives you 5 pieces of information:

   a. Matched Address – this will include any corrections that were made to match the address (i.e. changing Road to Drive).

   b. Geographic Identifiers – Block, Longitude, Latitude, Place, MCD, and Zip+4.

c. Errors – if it matched, the program will tell you "no errors" otherwise it will indicate what is wrong (no city, no zip, etc). If there are errors you can sometimes change the "Options" to fix them (more later).

d. Accuracy – exact match vs. fuzzy matching. For example, on the street type the program may correct a Road into Drive, etc., or many other similar types of corrections.

e. Data – in the data column under "Match List" if you scroll down you will be able to view the demographic data for the Census Block Group or Tract that your address is located in. If you have the professional version, you will have more demographic data available then the standard version.

To switch between tract or block group level data, click on "BG" or "Tract" on the top right hand side of the window for Match List.

To view the definitions of the variables listed, click on "View Defs".

To copy the data, use your mouse to click on "Copy", then open a MS Word document and paste into the document.

Batch Geocoding

When using the Batch mode, the address input file should be in .CSV .TXT or .DBF format.

1. **Click on the "Input" button**. A box will open called "Batch Input". Click on the "Input Type" on the far right hand side – csv, dbf, or txt. Next, click on the directory where your input file is located.

The first column is the Use Tags. The next box to the right has Column Use, Column Name, and First Line. The First Line will show you the data found in the first record. To geocode effectively, you need to assign a Use Tag to a column of data so the geocoder knows how to align and the different parts of each address.

To assign a Use Tag, simply:

a. Click on the Use Tag for the first part of the address, usually it is the Street Address. In the example below – click on Street Address on the far left hand side.

b. Click on the Column Use next to the Column Name and First line that describes the sort of data you are matching to the Use Tag. For example, click on the second row down and the Use Tag "Street Address" is now highlighted next to MAILINGSTR and 20 Hampton Avenue Suite 140 (see illustration on next page).

c. Click back on the Use Tag in column 1 that will be associated the next part of the address. In most cases, it is "City". Then click on the row under "Column Use" that has the city data in your address list. The Use Tag "City" will appear next to the row of data with the cities for the addresses in your list. And continue aligning Use Tags for the State and the ZIP. In most cases, rows of data with suites or apartment numbers, etc. can be ignored as they do not affect the geocoding output.

d. When you have aligned the Use Tags with the correct Column Name and First Line, click on Done at the top right hand side of the window. Any other rows of data that are not part of the address should be left in the default "Ignore" Use Tag. If you inadvertently highlighted one, simple click on Ignore from the Use Tags and then click on the row with the data to ignore this row of information when the geocoder is processing the addresses.
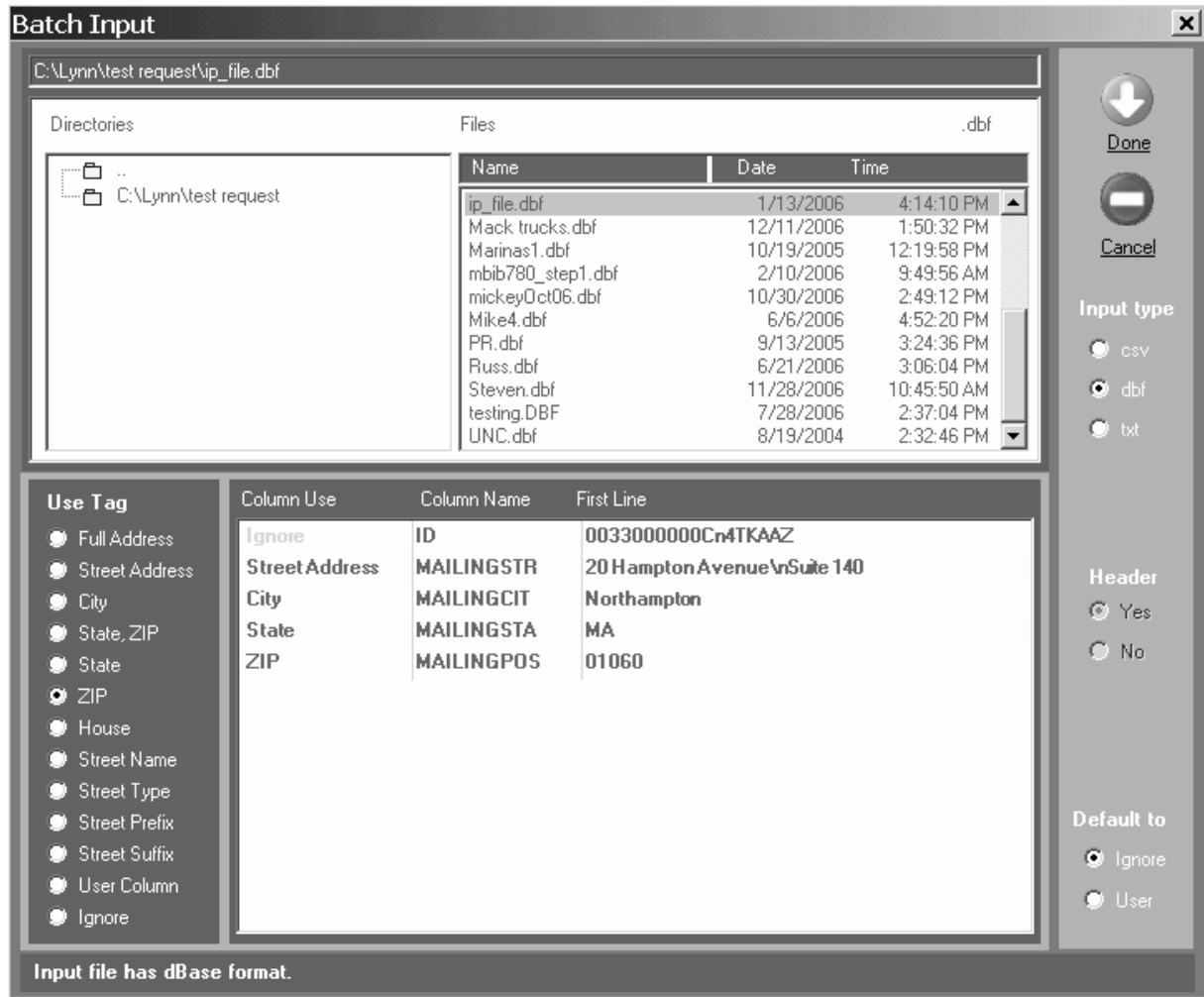
2. **Click on Output button**. Name your output file. Even though you specify only one file with the extension .TXT, at least 2 files are always created. The .txt file has the geocoding statistics. Next, click on the "Output Type" – CSV w/header, CSV w/o header, DBF, or Shape file. If you choose Shape file, the geocoder will generate a .DBF and shape files with your address points.

3. **Change Options**. If necessary (more below), this will allow you to process addresses that are less precise or require a more stringent match.

4. **Click on "Go" button**. While geocoding is in progress, the Lines Done will change. As soon as it stops, the View button will turn green. During the geocoding, you can press the "Stop" at any time. The output file will have the results accumulated up until that time.

5. **Click on View button**. The geocode statistics and result files are displayed.

Geocoding Options – Which option should you select to maximize your results?

The first decision – do you take the default settings or would you rather customize your run? You can choose to optimize the run to the allow matches using our fuzzy logic options. The default should be selected unless your list needs special consideration, either it is very large and you therefore want to optimize speed, or if you want to optimize coverage and guarantee that the every address is matched.

Our various options will allow for address corrections for phonetic errors (Maine Street vs. Main Street) as well as address type errors (Greenwood Drive vs. Greenwood Road). The following chart explains what each option is and whether or not it is available for each of the three options (all available options are marked with "X" in their column).

Option	What the logic allows	Default	Best Speed	Best Coverage
Allow phonetic match of state names	The full state name in an address (but not an abbreviation) will be matched phonetically	X		X
Allow Place-based zip code match	If a street is not found in a zip, you can allow scanning other zips associated with the place	X		X
Allow phonetic match of street names	The geocoder will use phonetic matching for street names			X
Disregard house number parity	Normally the geocoder matches even/odd addresses with even/odd address ranges. You can specify to disregard this practice			X
Allow closest address match	Finds the closest address range to match the house number (rather than an accurate one)	X		X
Allow fuzzy street types	Changes the street type if needed, for example from "Street" to "Avenue"	X		X
Geocode no matter what	Geocoder will always use the closest (rather than accurate) match			

Advanced Options

Under the Advanced Options tab, you have the option to select "Degree-Min-Sec coordinates" for your latitude and longitude data.

You also have the option to "Offset the coordinates to street side" which places the address point off the actual road segment. You choose the distance from the street side in feet or meters.

Under "More batch Options", the "Presort addresses" option tells the geocoder to always sort the address before geocoding the input file. This may affect the performance of the geocoder but not the output. If it is not checked, the geocoder will decide whether sorting is necessary.

The "Clean addresses" option will create an additional file – "report-name_clean.(csv or dbf)". This additional file will include only the successfully geocoded addresses.

Appended Census Data

This function allows you to append the demographics of the neighborhood for each of your customers or subjects. You will be able to ascertain the basic profile for who your customer or research subject is based on the kind of area they live in (racial composition, average income, owners versus renters, etc).

You have the option of appending Block Group or Tract level data. Block Groups are smaller than tracts with about 1300 persons per block group. Tracts have generally about 4,000 people, though these will vary. Choose a database by selecting BG (block group) or Tract from the top right hand box.

These data sets are available for both the batch and single address geocoding process. When you do a single address the data will appear in window for Match List. You will need to use the scroll bar on the side and scroll down to view all the data.

The default will be to include all of the available fields in the output file. If you know that you only want a few of the available fields, you can manually select the variables you want by pressing the Ctrl key and clicking on a field. It will be highlighted dark blue and only those variables you select will be included in your output file.

The GeocodeDVD Standard Version has a selection of variables derived from the 2000 Census. The Professional Version has additional variables from GeoLytics current year estimates and 5 year projections. For a complete list of variables available, go to:

http://geolytics.com/USCensus,Geocode,Data,Variables,Products.asp

Gecoding Completion Codes and Messages

Geocoding processing can fail due to a number of reasons, such as setup or programmatic errors, a missing database entry, or an invalid input address. Failed geocoding results are indicated by error messages and codes. Error messages are used in the Manual mode. Error codes are used in Batch mode.

Some successful geocode results may generate accuracy messages and codes. It happens if an address could be geocoded only with using some fallback rules.

All error and accuracy codes and messages are listed below.

Syntax and lookup errors

Error Code	Detailed Error Message
eIHN	Invalid house number.
eISt	Invalid street name.
eINa	Invalid city name.
eISN	Invalid state name.
eIZi	Invalid ZIP code.
eIAd	Invalid address.
eIZ5	Invalid ZIP5 code.
eIZ4	Invalid ZIP4 code.
eIZ9	Invalid ZIP+4 code
eHNF	House not found.
eSNF	Street not found.
eNZS	ZIP not found in state database.
eNSD	State database not found.

Accuracy codes and messages

Accuracy Code	Detailed Accuracy Message
aNPl	Place not found
aNPa	Address match with no parity
aCAd	Closest address match
aFTy	Fuzzy street type match
aPhM	Phonetic match
aNMa	No match found
aNMP	No match performed
aPBZ	Place based ZIP match
aSpC	Spelling corrected

aStC	State centroid used
aSEn	Street end used
aZIC	Zip centroid used
aInD	Inaccurate direction
aDCr	Direction corrected

Programmatic and Setup errors

If you see any other error code, please report to GeoLytics, Inc.

Database Sources

The data for GeocodeDVD are based on the US Census Bureau (USCB) TIGER/Lines spatial database. The demographic data has been pulled from CensusCD 2000 Long Form, which is based on the USCB SF3 file. The Professional Version with Estimates and Projections are from GeoLytics current year estimates and 5-year projections data sets.

Help

The "Help" section in the bottom right hand side of the opening window will have most of the same information that is listed in this Users Guide, as well as the License Agreement and a few other features. It will also give you a link to our website (www.geolytics.com) if your computer is hooked up to the Internet.

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