GeoCoder Object

with Geo Points

GeoCoder Object

Quick Start Guide

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Thanks For Purchasing GeoCoder Object

Use GeoCoder Object to add geographic data to the ZIP + 4 level, improve customer relations with dealer locator lookups and enhance target marketing with links to Census data.

The GeoCoder Object enables you to access geographic data using your ZIP Code™ and optional Plus4. You will be able to obtain latitude and longitude geographic coordinates, census tract and block numbers, as well as county name and FIPS numbers.

- Use the latitude and longitude from GeoCoder Object to locate the dealers closest to the customer.

- Use the census block information to group customers by neighborhoods or county.

- Determine direction and distance between two locations using the GeoCoder Object's built-in functions.

Due to the constant addition of ZIP Codes and Plus4's, the data set is updated quarterly. The expiration date for the current data set is nine months from the database date — After this date, the Object will return an initialize error or an error code 'E' for Expired Data.

The trial version of GeoCoder Object will only geocode Nevada ZIP codes, until you purchase a license.

GeoCoder with GeoPoints

The Standard version of GeoCoder Object includes GeoPoints 11-digit (ZIP + 4 + 2) doorstop geolocation data on over 121,827,000 addresses in the United States.

GeoPoints data is multi-sourced, including interpolated points mathematically calculated for valid addresses where no GeoPoints data is found, and covers 95 percent of all U.S. delivery addresses, business and residential.

Note: If you have purchased the Basic version of GeoCoder Object, geolocation data will only be provided to the 9-digit, ZIP + 4 level.

Trial Versions

GeoCoder Object can be used in demo mode to help you get familiar with our products before purchasing a license. The trial version contains the same features found in the full version, but is limited. GeoCoder Object will only process ZIP codes in Nevada.

If you wish to purchase GeoCoder Object, simply contact your sales representative at 1-800-MELISSA (1-800-635-4772). Upon purchasing the product, you will be provided with a license string to unlock the full functionality.

WHERE TO FIND HELP

Reference Guide

The GeoCoder Object Reference Guide details the functions available. A PDF file of this guide is located on your DVD-ROM.

Many Linux versions come with a built-in reader, such as Xpdf, to view the Reference Guide.

To view using other operating systems, you must have Adobe Acrobat Reader installed on your computer. This program can be downloaded from the Adobe website (http://www.adobe.com).

Melissa Data Website

Check out the technical support section on our website at www.MelissaData.com, where you can view the current application notes and FAQs. Our website also contains the latest product information for the GeoCoder Object and other Melissa Data products.

Call Us Toll Free

If you need help using GeoCoder Object, please call Technical Support toll free at 1-800-MELISSA (1-800-635-4772). Our technical support staff is available Monday - Friday from 6 a.m. - 5 p.m. Pacific Standard Time. You can also post a question on our forums at http://forum.MelissaData.com or send an e-mail to Tech@MelissaData.com.

SYSTEM REQUIREMENTS

GeoCoder Object is shipped on a DVD. It is recommended that you copy the data files to your local or network hard drive in order to access the data faster. Because these objects are in essence programmer's tools, they should be installed on a system that has a development environment, in order to utilize the power of the objects.

The following are additional hardware and software requirements:

- 1GB hard disk space (for data files)

- Microsoft® Windows® users — 64-bit Windows Vista, Windows 7, Server 2003 or Server 2008. Most Windows-based programming languages. .NET Framework 3.5 or better required to register the COM object.

- Linux users — Red Hat 64-bit (x64) distribution. GNU C++ 3.4 or later; glibc 3.2 or later.

- Solaris users — Solaris 8,9,10, SPARC platform, 32 or 64-bit. Sun Workshop *or* Sun ONE Studio compiler. G++ 3.3 and later can also be used.

- AIX users — Version 5.2 or 5.3; POWER, rs/6000, PPC, 64-bit. gcc 3.4.6 or Visual Age.

- HP-UX users — Version 11.11, 11.23; PA-RISC or Itanium, 64-bit. gcc 3.4.6 or aCC A.03.70.

The actual deployment system does not require use of the development tools.

INSTALLING GEOCODER OBJECT

WINDOWS

1. Close all applications that are open, including any anti-virus and e-mail software.

2. Place the GeoCoder Object DVD in your DVD-ROM drive.

3. Click the **Start** button, and then select **Run** from the pop-up menu. The *Run* dialog box opens.

4. Type your DVD drive letter followed by :\SETUP.EXE in the *Command Line* box. (For example, D:\SETUP.EXE). After typing the path, click **OK**.

5. Read the license agreement, and then click **Yes** if you agree to the terms. (To proceed with the installation, you must accept this agreement.)

6. Select the options that you want to install by placing a check mark next to its name and clicking **Next**.

7. The installer will display a screen showing the install location and the selected options. Click **Next** again.

8. Click **Install**.

LINUX/SOLARIS/HP-UX/AIX

> **Note!** *You do not need any special privileges when installing , nor do you have to log in as* `root`.
> *During installation, nothing will be modified outside of the target directory.*

1. Place the GeoCoder Object DVD in your DVD-ROM drive.

2. From the shell prompt ($), mount the DVD and run the applicable setup.sh script to install the object(s) to the desired directory.

All of the Unix-based OS sample programs assume that they can locate the required data files and object libraries in the current directory. It is not necessary to modify your PATH or LD_LIBRARY_PATH. If you prefer, you can run the sample program straight from the DVD-ROM — there is no need to install anything.

The final deployment install has to be done manually or by using your system administration utilities. Since the deployment standards vary widely, Melissa Data does not provide any specific instructions. Remember the following:

- GeoCoder Object does not require any special privileges

- All files can be made read-only

- There is no need for a setuid or setgid, neither as file permissions nor anywhere in your application code

FILE LOCATIONS

WINDOWS

Most of the files are placed in subdirectories of C:\Program Files\Melissa Data\DQT\. During the installation process, there may be some files placed in your Windows system directory — these files are required by the Microsoft Visual C++ runtime.

UNINSTALLING GEOCODER OBJECT

To remove GeoCoder Object from your computer, do the following:

WINDOWS:
1. Click the **Start** button.
2. Select **Settings** from the pop-up menu.
3. Click **Control Panel.**
4. Double-click **Add/Remove Programs**.

LINUX/SOLARIS/HP-UX/AIX:
1. Verify that all files in the target directory can be safely deleted.
2. Type rm -rf *target-directory*.

   If the target directory contains files that cannot be deleted without impacting other software, you will need to manually erase only files from GeoCoder Object.

CONFIGURING GEOCODER OBJECT

A current license string is required to use the full functionality of GeoCoder Object. Without a license string, the object will work in demo mode.

The license string should be entered as an environment variable named MD_LICENSE. This allows you to update your license string without editing and recompiling your code.

SETTING THE LICENSE STRING ENVIRONMENT VARIABLE
WINDOWS

Windows users can set environment variables by doing the following:

1. Select *Start* > *Settings*, and then click **Control Panel**.
2. Double-click **System**, and then click the *Advanced* tab.
3. Click **Environment Variables**, and then select either *System Variables* or *Variables* for the user X.
4. Click **New**.
5. Enter the "MD_LICENSE" in the **Variable Name** box.
6. Enter the license string in the **Variable Value** box and then click **OK**.

Please remember that these settings take effect only upon start of the program. You may need to quit and restart the development environment to incorporate the changes.

Unix-based OS users can simply set their license string via the following:

```
export MD_LICENSE=A1B2C3D4E5
```

If you decide to put this setting in your .profile, remember to restart your shell.

SAMPLE IMPLEMENTATIONS

This section describes the logic behind simple applications using GeoCoder Object. The samples are written in pseudocode so they can be easily adapted into almost any language.

INITIALIZATION

Declaring and creating an instance of GeoCoder Object is followed by the initialization steps to prepare it for use. These steps only need to be performed once per instance of the object in use.

LOOKUP

The GeoCode function accepts a single ZIP Code and an optional Plus4 extension. For the GeoPoint function, you will also need the Delivery Point Code.

PROCESSING

In the processing stage, you'll display or examine the return values of the GeoCode function.

TERMINATION

This stage involves destroying the current instance of GeoCoder Object when you close the application, freeing up memory to be used by other processes.

SAMPLE CODE

Step 1 — Instantiation: Declaring and Creating an Instance

Begin by declaring the Object variable.

```
Create geoObj As New Instance of GeoCoder
```

Step 2 — Initialization: Set Paths and Initialize

The next step is to tell the GeoCoder Object where it can find its data files. The initialization will either be successful, or an error message will display stating why the error occurred.

```
CALL SetPathToGeoCodeDataFiles WITH DataPath
CALL InitializeDataFiles RETURNING RESULT
CALL GetInitializeErrorString RETURNING ErrorStr
```

The initialization error code is available both as a member of an enumerated type, as well as a text string in plain English.

Step 3 — Lookup: Calling the GeoCode function

The minimum required input is the five-digit ZIP code. With the optional Plus4, the output information will be more precise. Note that census information is available only if GeoCoder Object gets at least the first two digits of the Plus4.

```
CALL GeoCode With Zip, Plus4 RETURNING Result
```

When doing a lookup, the returned value should always be true. If it returns false, this indicates that a grave system error occurred, possibly a process or system memory corruption.

Step 4 — Processing: Checking the Result Codes

If the GeoCode function returns a false value, an error has occurred. Check the GetResults function to determine the cause.

This function returns a comma-delimited string of codes which reveal the level of address matching found by the GeoCode function, as well as the cause for any errors.

```
CALL GetResults RETURNING Results
Process Results
```

Step 5 — Processing: Retrieving the Results

In Visual Basic, the following functions return as Variant values. Therefore, Visual Basic will do an appropriate conversion implicitly. In C++ and other languages, they are all declared as const char *. You will have to recast numbers explicitly to numeric values if you need to use them in any calculations.

```
CALL GetLatitude RETURNING Latitude
CALL GetLongitude RETURNING Longitude
CALL GetCensusTract RETURNING CensusTract
CALL GetCensusBlock RETURNING CensusBlock
CALL GetCountyFIPS RETURNING CountyFIPS
CALL GetCountyName RETURNING CountyName
CALL GetPlaceCode RETURNING PlaceCode
CALL GetPlaceName RETURNING PlaceName
```

Step 6 — Termination: Destroying the Instance

Be sure to recycle your memory bits. We do not believe the GeoCoder Object leaks allocated resources, however, you must properly destroy the GeoCoder Object to force the release of memory.

GEOPOINTS

If you purchased the Standard version of GeoCoder, your license includes the GeoPoints functionality and can return results with delivery-point accuracy for more than 121,827,000 addresses.

Interpolated GeoPoints are mathematically calculated based on nearby addresses when no GeoPoints data exists for a valid address. These are slightly less precise but extend the GeoPoints to million of additional addresses.

To initialize the GeoPoints function, specify the file path:

```
CALL SetPathToGeoPointDataFiles WITH DataPath
```

Then call the GeoPoint function instead of GeoCode.

```
CALL GeoPoint WITH Zip, Plus4, DeliveryPoint
```

The third parameter is the delivery point.

GeoCoder Object returns a Result Code of "GS05" after a successful GeoPoint lookup ("GS06" for interpolated).

ParseFielded is faster and more accurate, but requires that the data is consistently delimited.

IMPORTANT INFORMATION

DOES GEOCODER OBJECT EXPIRE?

Your License String is good for the length of your subscription. When you renew your subscription for GeoCoder Object, you will be issued a new license string.

The data on the GeoCoder Object DVD is valid for nine months.

The GeoCoder Object is updated every six months, so subscribers will receive an updated DVD before your current data expires, based on the terms of your subscription. If you are not a subscriber, you should order the latest updated version of the GeoCoder Object, or consider upgrading your single purchase to a subscription.

HOW TO PURCHASE

To place an order for GeoCoder Object, just call 1-800-MELISSA (1-800-635-4772).

TROUBLESHOOTING

If you need help using the GeoCoder Object, please call us toll free at 1-800-MELISSA (1-800-635-4772). Our technical support staff is available Monday through Friday from 6 a.m. to 5 p.m. Pacific Standard Time.

To read about current known issues, visit: http://www.MelissaData.com/tech/tech.htm.

For our online support, visit: http://forum.MelissaData.com

You can also send an e-mail to Tech@MelissaData.com.