WebSmart Zip Search



WebSmart ZIP Search

Reference Guide

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Dear Programmer,

I would like to take this opportunity to introduce you to Melissa Data Corp. Founded in 1985, Melissa Data provides data quality solutions, with emphasis on address and phone verification, postal encoding, and data enhancements.

We are a leading provider of cost-effective solutions for achieving the highest level of data quality for lifetime value. A powerful line of software, databases, components, and services afford our customers the flexibility to cleanse and update contact information using almost any language, platform, and media for point-of-entry or batch processing.

This online manual will guide you through the properties and methods of our easy-to-use programming tools. Your feedback is important to me, so please don't hesitate to email your comments or suggestions to ray @ MelissaData.com.

I look forward to hearing from you.

Best Wishes,

Raymond F. Melissa

President

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Welcome to WebSmart Services

The WebSmart Services are a collection of services that can be accessed by any application, allowing you to incorporate Melissa Data's technology into your programs without worrying about continually downloading and installing updates.

Melissa Data currently offers the following services:

- Address Verifier Verify and standardize one or more mailing address. This service also appends ZIP + 4[®] and Carrier Route information.
- Email Verifier Verify, correct and update, domain names from one or more email addresses.
- **GeoCoder** Returns geographic, census, and demographic data for almost any location in the United States.
- IP Locator Returns name and geographic information for the owner of a public IP address.
- **Delivery Indicator** Indicates whether an address represents a business or residential address.
- Name Parser Parses and genderizes personal names and also generates salutations for correspondence.
- **Street Search** Searches a ZIP Code[™] from street address ranges matching a specific pattern and, optionally, a street number.

- ZIP Search Matches city names with ZIP/Postal codes, ZIP/Postal codes with city names and searches for city names matching a pattern with a given state.
- **Phone Verifier** Verifies and parses phone numbers, as well as identifying phone numbers as residential, business, VOIP or wireless.
- Property Returns basic or detailed information about the size, ownership, and structures on a given parcel of land.

Both GeoCoder and Delivery Indicator work from an "address key" returned by the Address Verifier service, therefore, an address must first be submitted to the Address Verifier before you can use either of the other two services.

There are three ways to access the WebSmart Services:

- SOAP The SOAP interface allows you to add the Web Service to an application as if it were a component object or DLL. You can then access the Web Service fields and execute commands as if they were properties and methods.
- XML The Web Service can also submit a request as an XML document. It will then return the processed records as another XML document that can be parsed using whatever XML tools you utilize in your development environment.
- **REST** This interface allows you to submit a single address record as part of a URL string and returns the processed record as an XML document identical to the one returned by the XML interface.

Using the REST service may require that you encode certain characters using the proper URL entities before adding them to a URL. Characters like spaces, slashes, ampersands and others must be replaced by special codes, which usually consist of a percent sign followed by a two-digit hexadecimal number.

The following table shows the replacements for the most common characters.

Character	URL Encoded
Space	%20 or +
*	%2A
#	%23
&	%26
%	%25
\$	%28

Character	URL Encoded
+	%2B
,	%2C
/	%2F
:	%3A
;	%3B
<	%3C
=	%3D
>	%3E
?	%3F
@	%40
[%5B
]	%5D
~	%7E

Many modern programming languages have a URL encode and URL decoding function that automates these character replacements.

Special Characters

Because the WebSmart Services are XML-based, certain characters cannot be passed as data. They would be interpreted as part of the XML structure and would cause errors. The following codes must be substituted for these characters.

Character	URL Encoded
&	& (ampersand)
"	" (left/right quotes should be replaced with straight quotes)
6	' (apostrophe)
<	< (less-than)
>	> (greater-than)

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An Introduction to ZIP Search

For both the U.S. and Canada, Web Smart ZIP Search Service will:

- Finds cities tied to a given ZIP or Postal code.
- Retrieves ZIP or Postal Codes associated with a given city and state/ province.
- Find city names that match a specific pattern within a given state or province.

The ZIP Search service has three different types of searches.

Find Cities in ZIP Code

This search returns all of the matching city name records associated with a submitted ZIP/Postal Code. This may include unincorporated communities adjoining a city and alternative names and spellings for a given city.

If the OfficialCityNamesOnly option is enabled, this search will only return the record that matches the official USPS city name associated with the ZIP Code.

Find ZIP In Cities Search

This search returns all of the ZIP/Postal code records associated with a submitted combination of city name and state.

Find Cities in State Search

This search returns all of city names that match a submitted city name pattern and state/province. The city name can employ a wildcard character. For example, the search strings "Rancho S*" and "CA" will return records for all cities in California that begin with the letters "Rancho S."

Adding ZIP Search to a Project

If you are using the SOAP service with Visual Studio .NET, you need to add a web reference to the service to your project. Click on the **Project** menu and select *Add Web Reference...* Enter the following URL on the Add Web Reference dialog box:

https://zipsearch.melissadata.net/v2/SOAP/Service.svc

If you are not using Visual Studio .NET, see the documentation for your SOAP interface for the procedure for adding the service to your project.

Submitting an XML Request

After building your XML string from your data, an XML request to the web service is submitted using an HTTP POST operation to the following URL:

https://zipsearch.melissadata.net/v2/XML/Service.svc/doZipSearch

Building a REST Request

Query strings are sent to the web service as part of the URL using an HTTP Get operation appended to following URL:

https://zipsearch.melissadata.net/v2/REST/Service.svc/doZipSearch

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ZIP Search Request Object

At the minimum, a request to the WebSmart ZIP Search Service will consist of either a ZIP/Postal Code or a City and State combination, depending on the type of search selected. Only one record is allowed per request.

SOAP Request

The following Visual Basic Code shows a simple order of operations for building and submitting a Request object, submitting it to the Web Service and retrieving a response object.

Step 1 - Create the Request and Response Objects

```
Dim ReqZipSearch As New dqwsZipSearch.Request Dim ResZipSearch As New dqwsZipSearch.Response
```

Step 2 – Assign the General Field Values

There are three properties of the Request object that apply to the request as a whole. CustomerID is required.

```
ReqZipSearch.CustomerID = strCustID
ReqZipSearch.TransmissionReference = strTranRef
ReqZipSearch.SearchType = "1"
ReqZipSearch.OptOfficialCityNameOnly = True
```

The Transmission Reference is a unique string value that identifies this request. The OptOfficialCityNameOnly option applies only to Search Type 1 (Cities in ZIP Code).

Step 3 – Build the Record

The exact method for building the array will depend on the exact database software in use, but you will need to assign the required values to the corresponding fields in the Request.

Find Cities In ZIP Code

```
ReqZipSearch.Zip = "92688"
```

Find ZIP Codes in City

```
ReqZipSearch.City = "Rancho Santa Margarita"
ReqZipSearch.State = "CA"
```

Find Cities in State

```
ReqZipSearch.City = "Rancho S*"
ReqZipSearch.State = "CA"
```

Step 4 - Submit the Request

The final step is to create the Service Client Object and then submit the Request object doZipSearch method. This sends the data to the web service and retrieves the Response object.

```
ZipSearchClient = New dqwsZipSearch.Service
ResZipSearch = ZipSearchClient.doZipSearch(ReqZipSearch)
```

XML Request

The raw XML request is built using whatever XML tools are available via your development tools and submitted to the following URL using an HTTP POST request:

```
https://zipsearch.melissadata.net/v2/XML/Service.svc/doZipSearch
```

The following XML Code contains the same request as the SOAP example above.

Find Cities in ZIP Code

```
<Request>
    <TransmissionReference>Web Service Test 2008/12/31
    </TransmissionReference>
    <CustomerID>123456789</CustomerID>
    <SearchType>1</SearchType>
```

```
<OptOfficialCityNameOnly>True
      </OptOfficialCityNameOnly>
      <Zip>92688</Zip>
      <Country />
   </Request>
Find ZIP Codes in City
   <Request>
      <TransmissionReference>Web Service Test 2010/01/31
      </TransmissionReference>
      <CustomerID>123456789/CustomerID>
      <SearchType>2</SearchType>
      <City>Rancho Santa Margarita</City>
      <State>CA</State>
   </Request>
Find Cities in State
   <Request>
      <TransmissionReference>Web Service Test 2010/01/31
      </TransmissionReference>
      <CustomerID>123456789/CustomerID>
      <SearchType>3</SearchType>
```

REST Request

</Request>

A REST request can submit a single address record via an HTTP GET. The following example uses the same address as the SOAP and XML samples.

Find Cities in ZIP Code

<City>Rancho S*</City>
<State>CA</State>

```
https://zipsearch.melissadata.net/v2/REST/Service.svc/doZipSearch?id=12345678&opt=true&stype=1&zip=92688
```

Find ZIP Codes in City

```
https://zipsearch.melissadata.net/v2/REST/Service.svc/doZipSearch?id=12345678&stype=2&city=Rancho%20Santa%20Margarita&state=CA
```

Find Cities in State

https://zipsearch.melissadata.net/v2/REST/Service.svc/doZipSearch?id=12345678&stype=3&city=Rancho%20S%2A&state=CA

Request Fields

The following section lists the fields that set the basic options for each and identify the user to the Web Service.

Customer ID

This is a required string value containing the identifier number issued to the customer when signing up for Melissa Data Web Services.

Remarks

You need a customer ID to access any Melissa Data Web Service. If this field is not populated, the web service will return an error. To receive a customer ID, call your Melissa Data sale representative at 1-800-MELISSA.

Transmission Reference

This is an optional string value that may be passed with each Request to serve as a unique identifier for this set of records.

Remarks

This value is returned as sent by the Response Array, allowing you to match the Response to the Request.

SearchType

This field selects which search method the ZIP Search web service will use with the current request.

Remarks

The valid values are:

```
"1" - Find Cities in ZIP Code (Default)
```

"2" - Find ZIP Codes in City

"3" - Find City Names in State

Any values not matching one of these values will be ignored and the Default value of "1" will be used.

Syntax

```
SOAP
```

```
Request.SearchType = string
```

XML

```
<Request>
    <SearchType>String</SearchType>
</Request>
```

REST

stype={SearchType}

OptOfficialCityNameOnly

This Boolean value instructs the web service to return all cities associated with a ZIP/Postal Code during a Find Cities in ZIP Code Search or to return just the official city.

Remarks

This value will be ignored during a Find ZIP Codes in City Search and Find City Names in State Search.

True – Will only return one search record, the official city.

False – Will return all cities found in the input ZIP/Postal code (Default)

If a invalid value is entered or this field is omitted altogether, the Default value of False will be used.

Syntax

SOAP

Request.OptOfficialCityNameOnly = string

XML

```
<Request>
    <OptOfficialCityNameOnly>String</OptOfficialCityNameOnly>
</Request>
```

REST

opt={OptOfficialCityNameOnly}

City

This field passes the city name to the ZIP Search service for the ZIP/Postal Codes in City and Cities in State Search Types.

Remarks

The City Field is required for both the ZIP/Postal Codes in City and Cities in State Search Types.

For the cities in State search, the City field can contain a trailing wildcard character — "*" — for multiple matches. Note that the asterisk character must be encoded ("%2A") when using with the REST interface.

State

This field passes the state abbreviation to the ZIP Search service for the ZIP/ Postal Codes in City and Cities in State.

Remarks

The State Field is required for both the ZIP/Postal Codes in City and Cities in State Search Types.

Zip

This field passes a five-digit ZIP Code or a six-digit Postal Code to the ZIP Search service for the Cities in ZIP Code Search Type.

Remarks

The ZIP field is required for the Cities in ZIP Code Search Type.

Country

This field passes a two-character country code to the ZIP Search service.

Remarks

Currently, ZIP Search only works on addresses within the United States, so this field is optional and has no effect. It is included for future compatibility.

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Zip Search Response Object

The SOAP interface for the Zip Search service returns a Response Object. The primary component of this object is a record array of ZIP/Postal Code and City information, one for each ZIP record returned.

The XML and REST interfaces return XML documents containing a number of <ZipRecord> elements, one for each zip record returned.

TransmissionReference

Returns a string value containing the contents of the TransmissionReference field from the original Request.

Remarks

If you passed any value to the TransmissionReference field when building your request, it is returned here. You can use this property to match the response to the request.

Syntax

SOAP

string = Response.TransmissionReference

```
<ResponseArray>
    <TransmissionReference>
        String
     </TransmissionReference>
</ResponseArray>
```

Total Records

Returns a string value containing the number of ZIP/Postal Code or City records returned with the current response.

Remarks

This property returns the number of ZipSearch Records processed and returned by the response as a string value.

Syntax

SOAP

string = Response.TotalRecords

Results

Returns a string value containing the general error, system error, and search error messages from the most recent request sent to the service.

Remarks

The following codes can be returned:

Code	Description
SE01	Web Service internal error.
GE01	General Error — Empty XML request structure.
GE04	General Error — CustomerID is empty.
GE05	General Error — CustomerID is invalid.
GE06	General Error — CustomerID is disabled.
GE07	General Error — XML request is invalid.
ZS01	Find Cities in ZIP Code Search was successful.
ZS02	Find ZIP Code in City Search was successful.
ZS03	Find Cities in State Search was successful.
DE01	Search Error — Required Input Missing.
DE02	Search Error — No Records Found

Syntax

SOAP

```
string = Response.Results
```

```
<ResponseArray>
     <Results>String</Results>
</ResponseArray>
```

Version

Returns a string value containing the current version number of the Zip Search service.

Syntax

SOAP

string = Response.Version

```
<ResponseArray>
     <Version>String</Version>
</ResponseArray>
```

ZipRecord Fields

The SOAP version of the Response object returns a property called ZipRecord which is an array of ZipRecord objects matching the input submitted with the Request with the original.

The XML and REST services may return one or more <ZipRecord> elements that match the original request.

The maximum number of records returned in both cases in 1,000.

The following section describes the fields returned by each record in the Response Object.

Record ID

For each record in the Response, this field returns a string value containing the sequential identifier for the current ZipRecord.

Remarks

The RecordID is sequential number to aid in organizing the ZipRecords returned by the Zip Search service.

Zip

This field returns a string value with the zip code for the current ZIP record.

Remarks

ZipType

This field returns a one-character string value with the code for the ZIP Code type for the current ZIP record.

Remarks

The possible values are:

Code	Explanation
Р	A ZIP Code used only for PO Boxes.
U	Unique: A ZIP Code assigned to an organization or government institution such as the IRS.
М	Military: A ZIP Code assigned to an APO/FPO.
Empty	A standard ZIP Code or a Canadian Postal Code.

This field returns values for the Find Cities in ZIP Code and Find ZIP Codes in City search types. It returns a blank for Find City Names in State.

Syntax

SOAP

```
string = Response.ZipRecord().ZipType
```

```
<Response>
     <ZipRecord>
          <ZipType>String</ZipType>
     </ZipRecord>
</Response>
```

City

These fields return string values with the city name and city abbreviation for the current ZIP record.

Remarks

If the return value of the GetCity function is longer than 13 letters, the GetCityAbbreviation function will return the official abbreviation the post office has associated with that city or municipality name. For example, for "Rancho Santa Margarita," the CityAbbreviation function will return the abbreviation "Rcho Sta Marg."

If the return value of the GetCity function is 13 letters long or shorter, the GetCityAbbreviation function will return the full city or municipality name.

This field is returned by all three search types.

County

These fields return string values with the county name and five-digit county FIPS code of the current ZIP record

Remarks

This field returns values for the Find Cities in ZIP Code and Find ZIP Codes in City search types. It returns a blank for Find City Names in State.

The FIPS Code is only returned for U.S. records.

State

This field returns a string value with the two-letter state abbreviation of the current ZIP record

Remarks

This field is returned by all three search types.

Area Code

This field returns a three-character string value with the area code of the current ZIP record.

Remarks

If a ZIP/Postal Code has more than one area code assigned to it, the dominant area code will be returned.

Time Zone

These fields return string values containing the time zone name and time zone code of the current zip record.

Remarks

Possible values are:

</Response>

Code	Zone	Code	Zone
0	Military (APO or FPO)	9	Alaska Time
4	Atlantic Time	10	Hawaii Time
5	Eastern Time	11	Samoa Time
6	Central Time	12	Marshall Island Time
7	Mountain Time	14	Guam Time
8	Pacific Time	15	Palau Time

Latitude

This field returns a string value with the latitude of the current ZIP record.

Remarks

The latitude is a 9 character number accurate to 6 decimal places.

Longitude

This field returns a string value with the longitude of the current ZIP record.

Remarks

The longitude is a 9 character number accurate to 6 decimal places.

LastLineIndicator

</Response>

This field returns a one character string value with the LastLineIndicator of the current ZIP record.

Remarks

An "L" in this field indicates that the city name is the official U. S. Postal Service name for the ZIP Code (Only one record per ZIP Code is coded with an "L").

This field returns values for the Find Cities in ZIP Code and Find ZIP Codes in City search types. It returns a blank for Find City Names in State.

This property does not return a value for Canadian records.

LastLineNumber

This field returns a string value with the LastLineNumber of the current ZIP record.

Remarks

The LastLineNumber is a 6 digit number used to break ties on certain records using city names.

This field returns values for the Find Cities in ZIP Code and Find ZIP Codes in City search types. It returns a blank for Find City Names in State.

This property does not return a value for Canadian records.

Syntax

SOAP

```
string = Response.ZipRecord().LastLineNumber
```

```
<Response>
     <ZipRecord>
          <LastLineNumber>String</LastLineNumber>
          </ZipRecord>
</Response>
```

PreferredLastLineNumber

This field returns a string value with the Preferred LastLine Number of the current zip record.

Remarks

The PreferredLastLineNumber property is a 6-character string value containing the preferred last line number for the city name.

This is similar to the "LastLineNumber" field mentioned earlier. If the preferred last line number is the same as the last line number, this city name is the one the Post Office will recognize as the official name for that ZIP Code.

FacilityCode

This field returns a string value with the facility code of the current ZIP record.

Remarks

This field returns values for the Find Cities in ZIP Code and Find ZIP Codes in City search types. It returns a blank for Find City Names in State.

This property does not return a value for Canadian records.

Code	Туре	Code	Туре
Α	Airport Mail Facility	K	Bulk Mail Facility
В	Branch	М	Money Order Unit
С	Community Post Office	N	Community or Place name
D	Area Distribution Center	Р	Post Office
Е	Sectional Center Facility	S	Station
F	Delivery Distribution Center	U	Urbanization (Used in Puerto Rico)
G	General Mail Facility	X	Vanity name (Should not be used)

Syntax

SOAP

```
string = Response.ZipRecord().FacilityCode
```

```
<Response>
     <ZipRecord>
          <FacilityCode>String</FacilityCode>
          </ZipRecord>
</Response>
```

Response Object XML Format

The following shows the structure of the XML document returned by the WebSmart ZipSearch Service.

```
<?xml version="1.0" encoding="UTF-8"?>
<Response>
   <Version>String</Version>
   <TransmissionReference>String</TransmissionReference>
   <Results>String</Results>
   <TotalRecords>String</TotalRecords>
   <ZipRecord>
      <RecordID>String</RecordID>
      <Zip>String</Zip>
      <ZipType>String</ZipType>
      <City>
         <Name>String</Name>
         <a href="#"><Abbreviation>String</abbreviation></a>
      </City>
      <County>
         <Name>String</Name>
         <FIPS>String</FIPS>
      </County>
      <State>String</State>
      <AreaCode>String</AreaCode>
      <TimeZone>
         <Name>String</Name>
         <Code>String</Code>
      </TimeZone>
      <Latitude>String</Latitude>
      <Longitude>String</Longitude>
      <LastLineIndicator>String</LastLineIndicator>
      <LastLineNumber>String</LastLineNumber>
      <Pre><PreferredLastLineNumber>String</
   PreferredLastLineNumber>
      <FacilityCode>String</FacilityCode>
   </ZipRecord>
</Response>
```