



Financial & Corporate Compliance

Wiz SaaS Suite

Wiz Geocoder API Guide

Document control

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1. Introduction

The Wiz Geocoder can easily be integrated into a Loan Origination System or client application using the Wiz Geocoder API. The Wiz Geocoder API is exposed for public consumption as an industry standard JSON based Web API.

The Wiz Geocoder API allows users to process loan application addresses with single requests. When requests are received by Wolters Kluwer's Wiz Geocoder production servers, the Wiz Geocoder will return geographic information for addresses it is able to match. The following geographic information is returned for geocoded addresses:

- MSA
- State
- County
- Census Tract
- County_5
- Tract_11
- Latitude
- Longitude

Additionally, the Wiz Geocoder returns demographic information associated with the geographic area that the loan application's address has been geocoded to, including CRA Eligibility.

Processing of this API is currently limited to single mode, but multiple records can be processed in a single request if the request file size does not exceed 32MB. Information on batch mode processing will be available later.

Any product related questions can be directed to WizSaaSProductTeam@wolterskluwer.com. Any support related questions can be directed to SaaS WizSupport@wolterskluwer.com.

2. Authentication and Authorization

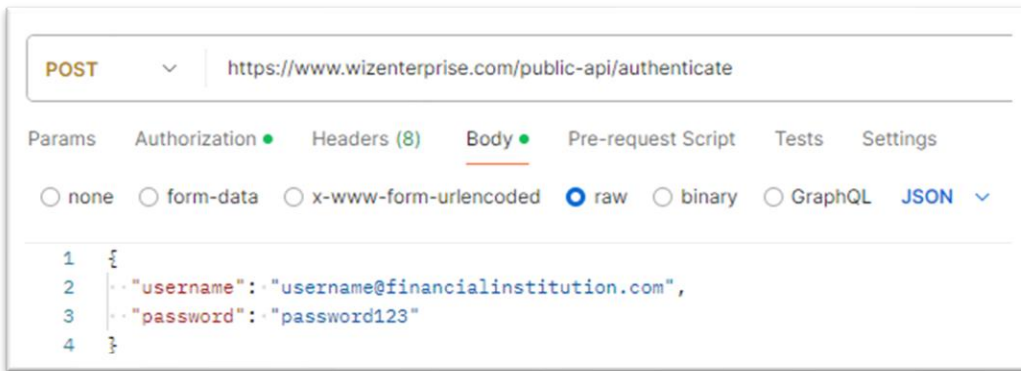
Integration partners are required to use our authenticate endpoint and provide a username and password. An administrator will need to log into the application and create API credentials to use any of the APIs. These API credentials can be created under **Admin > API credentials**.

Below is the Authentication API endpoint:

POST: <https://www.wizenterprise.com/public-api/authenticate>

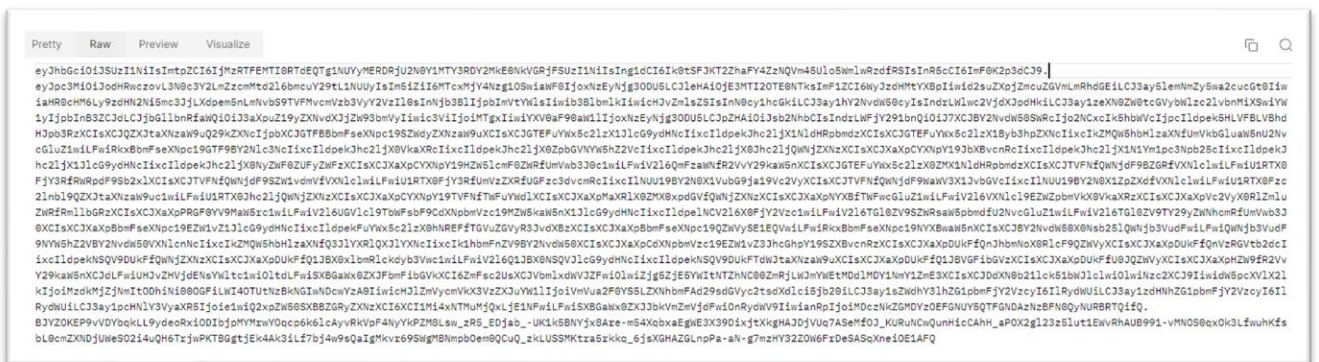
2.1 Sample request

```
{  
  "username": "username@financialinstitution.com",  
  "password": "password123"  
}
```



2.2 Sample response

Upon validating the credentials, the endpoint will return an access token which will then need be included in the header for the Geocoding API endpoint. This token expires after 1 hour.



3. Schema definitions

Below is the Geocoding API endpoint:

- POST: <https://www.wizenterprise.com/public-api/lardata/geocode>

The request body structure for the Geocoding API requires both **attributes** and **data** elements. The attributes section is for passing the geocoding settings and the data section is for the address information. The elements are not case sensitive and do not need to be specified in a particular order.

Note: The only required Attribute is **ActivityYear**. The other elements are geocoding settings and if they are not specified in the request, the recommended setting will be used.

3.1 Attributes descriptions

Element	Description
ActivityYear	<p>The year provided should match that of the Action Date of the application. This setting has implications for geographic and demographic data associated with the geocode.</p> <ul style="list-style-type: none">• Activity years 2012-2021 will utilize Census 2010 information to geocode the record.• Activity years 2022 and later will utilize Census 2020 information to geocode the record. <p>Note: We consume all changes implemented by the FFIEC for CRA & HMDA purposes.</p>
AggressivenessMode	<p>Specifies the level of geocoding strictness. The following levels of strictness are supported:</p> <ul style="list-style-type: none">• Lenient: Returns a match when the house number and side of the street match properly to the Geocoder's reference addresses.• Moderate: Returns a match only when the house number and street direction; or house number, side of the street and street type match properly to the Geocoder's reference addresses.• Strict: Returns a match only when the house number, side of the street, street type, street direction and Zip Code match properly to the Geocoder's reference addresses. <p>Possible values are:</p> <ul style="list-style-type: none">• 0 = Lenient• 1 = Moderate (Recommended)• 2 = Strict
IsZipPercentMatchEnabled	Determines if ZIP% matches will be returned or not.

	<p>Possible values are:</p> <ul style="list-style-type: none"> • True = ZIP% matches will be returned (Recommended) • False = ZIP% matches will not be returned
ZipPercentageLevel	<p>Specifies which type of Zip Percent fallback method is used. This fallback method allows you to match records to a Zip Code only if a specified percentage of that Zip Code falls within a single census tract. You can specify that 90%, 95%, or 99% of a Zip Code must fall within a single census tract to be matched to that tract.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • 0 = If 90% of a Zip Code falls within a census tract, the address will match to that census tract • 1 = If 95% of a Zip Code falls within a census tract, the address will match to that census tract (Recommended) • 2 = 99% of a Zip Code falls within a census tract, the address will match to that census tract
IsTractMatchEnabled	<p>Determines if Tract Matches will be returned or not.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • True = Tract matches will be returned (Recommended) • False = Tract matches will not be returned
IsZipCentroidMatchEnabled	<p>Determines if ZIP (5 digits) level matches will be returned or not.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • True = ZIP level matches will be returned • False = ZIP level matches will not be returned (Recommended)
IsZip2CentroidMatchEnabled	<p>Determines if ZIP2 (7 digits) level matches will be returned or not.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • True = ZIP2 level matches will be returned • False = ZIP2 level matches will not be returned (Recommended)
IsZip4CentroidMatchEnabled	<p>Determines if ZIP4 (9 digits) level matches will be returned or not.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • True = ZIP4 level matches will be returned (Recommended)

	<ul style="list-style-type: none"> False = ZIP4 level matches will not be returned
AllowWeakParcelAndTractsMatch	<p>Determines if the system will return weak parcel and weak tract matches. When the option is enabled, the geocoder will return a B1 parcel match when the gsLocationCode is returned as AP22, AP23, or AP24 (weak parcel matches) and a B8 tract match when the gsLocationcode is returned as ZB9A, ZB9B, ZB9C, ZT9A, ZT9B, ZT9C, ZB7A, ZB7B, ZB7C, ZT7A, ZT7B, or ZT7C (weak tract matches).</p> <p>Possible values are:</p> <ul style="list-style-type: none"> True = Weak Parcel and Tract Matches are allowed False = Weak Parcel and Tract Matches are not allowed (Recommended)

3.2 Data descriptions

Element	Description
Address	Street address. Must not exceed 100 characters in length.
City	City name. Must not exceed 35 characters in length.
State_abrv	State abbreviation. Must not exceed 2 characters in length.
Zip	ZIP code. Must not exceed 5 characters in length.
Zip4	*Optional* ZIP4 code. Must not exceed 4 characters in length.
Income	<p>*Optional* The applicant's yearly income, in thousands, rounded to the nearest thousand. Examples: An income of \$52,500 would be submitted as 53, An income of \$52,499 would be submitted as 52. Leave blank or enter "NA" if the requirement to report gross annual income does not apply. Value must have no more than 12 digits before and 3 digits after the decimal point or be NA.</p> <p>Note: If Income isn't present or equals NA, the BorrowerIncomeCategory will always equal 5.</p>

4. Response definitions

Element	Description
TotalRecords	Number of records processed.
MatchedRecords	Number of records that returned a match.
UnmatchedRecords	Number of records that did not return a match.
Address	Address from the request.
City	City from the request.
State_Abrv	State abbreviation from the request.
Zip	Zip code from the request.
Zip4	Zip4 code from the request (if provided).
Income	Applicant's annual income from the request (if provided).
State	The two-digit State code to which the address was matched.
MSA	The five-digit MSA code to which the address was matched.
County	The three-digit County code to which the address was matched.
CensusTrac	The Census Tract to which the address was matched.
MmwAddress	The standardized address the geocoder used to match the record.
MmwCity	The standardized city the geocoder used to match the record.
MmwState	The standardized state the geocoder used to match the record.
MmwZip	The standardized ZIP code the geocoder used to match the record.
MmwZip4	The standardized ZIP4 code the geocoder used to match the record.
Latitude	The Latitude to which the address was matched.

Longitude	The Longitude to which the address was matched.
MmwStat	The match status code. Please refer to the Match Status definitions section for the definitions of these codes.
GsLocationCode	The location code which indicates the accuracy of the assigned geocode. Note: These codes are defined by our geocoding data provider.
BlockGrp	The Block Group to which the address was matched.
BlockCode	The Block Code to which the address was matched.
GsMatchCode	The match code which indicates the portions of the address that matched or did not match. Note: These codes are defined by our geocoding data provider.
CountyName	The County Name to which the address was matched.
IsGeocodeMatched	Indicates whether the geocoder found a match or not.
MatchDescription	Description of the match returned by the geocoder.
Trct_incm_Catg	Tract Income Category of the census tract based on the tract income level. Possible values are: <ul style="list-style-type: none"> • 1 = Low • 2 = Moderate • 3 = Middle • 4 = Upper • 5 = NA
County_5	The 5-digit county code returned by the geocoder.
Tract_11	The 11-digit census tract code returned by the geocoder.
Distressed_Underserved	Indicates whether the census tract returned by the geocoder is considered distressed or underserved. Possible values are: <ul style="list-style-type: none"> • 0 = False • 1 = True
CRA_Eligible	Indicates whether the census tract returned by the geocoder is considered CRA Eligible or not. A record is considered CRA Eligible if the

	<p>BorrowerIncomeCategory is 1 (Low) or 2 (Moderate), the Trct_Incm_Catg is 1 (Low) or 2 (Moderate), or Distressed_Underserved is 1 (True).</p> <p>Possible values are:</p> <ul style="list-style-type: none"> • 0 = Not CRA Eligible • 1 = CRA Eligible
Asian_Perc	Percent of Asian persons living in the census tract to which the address was matched.
Black_Perc	Percent of Black persons living in the census tract to which the address was matched.
Hispanic_Perc	Percent of Hispanic persons living in the census tract to which the address was matched.
MedianFamilyIncomeProjected	<p>The FFIEC's Updated Median Family Income number for the census tract to which the address was matched.</p> <p>Note: This field is expected to be removed in a future release.</p>
MedianFamilyIncome	The US Census Bureau Median Family Income number for the census tract to which the address was matched.
MedianHouseholdIncome	The US Census Bureau Median Household Income for the census tract to which the address was matched.
HUDMedian	The MSA/Non-MSA HUD/FFIEC updated median income.
MsaMedian	The MSA/Non-MSA US Census Bureau median income.
MsaName	The MSA Name to which the address was matched.
FamiliesBelowPovertyLevel	Count of families below poverty level living in the census tract to which the address was matched.
LowIncomeFamilies	Count of low-income families per total families living in the census tract to which the address was matched.
ModerateIncomeFamilies	Count of moderate-income families per total families living in the census tract to which the address was matched.
MiddleIncomeFamilies	Count of middle-income families per total families living in the census tract to which the address was matched.

UpperIncomeFamilies	Count of upper-income families per total families living in the census tract to which the address was matched.
OwnerOccupiedIncome	Count of owner-occupied units in the census tract to which the address was matched.
OwnerOccupiedIncome14	Count of 1-4 family units in the census tract to which the address was matched.
RentalOccupiedIncome	Count of rental-occupied units in the census tract to which the address was matched.
MinorityCount	Count of minority persons living in the census tract to which the address was matched.
PercentFamiliesBelowPovertyLevel	Percent of families below poverty level per total families living in the census tract to which the address was matched.
PercentLowIncomeFamilies	Percent of low-income families per total families living in the census tract to which the address was matched.
PercentModerateIncomeFamilies	Percent of moderate-income families per total families living in the census tract to which the address was matched.
PercentMiddleIncomeFamilies	Percent of middle-income families per total families living in the census tract to which the address was matched.
PercentUpperIncomeFamilies	Percent of upper-income families per total families living in the census tract to which the address was matched.
PercentMinority	Percent of minority persons living in the census tract to which the address was matched.
FamiliesPercentTotalHouseholds	Percent of families per total households living in the census tract to which the address was matched.
TractIncomeLevel	Tract median family income as a percent of the MSA median family income.
BorrowerIncomeLevel	Applicant income as a percent of the MSA Median Income.
BorrowerIncomeCategory	Applicant Income Category based on the BorrowerIncomeLevel Possible values are: <ul style="list-style-type: none"> • 1 = Low • 2 = Moderate • 3 = Middle • 4 = Upper • 5 = NA

5.Match Status definitions

Code	Description
B1	The address entered received a best match from parcel database.
B2	The address entered received a best match from address database.
B3	The address entered received an intersection match.
B5	The address entered matched to an alternate name for the street.
B6	The location of this address is known but has not been added to the parcel database. The address entered matched to a temporary placeholder from parcel database.
B7	The location of this address is known but has not been added to the address database. The address entered matched to a temporary placeholder from address database.
B8	The street name entered is correct, but the street number is not listed within the list of available ranges for this street. Because the entire street is contained within a single census tract, the address entered was matched to that tract.
B9	The street name entered is correct (to an alternate name), but the street number is not listed within the list of available ranges for this street. Because the entire street is contained within a single census tract, the address entered was matched to that tract.
10	The state abbreviation entered is incorrect. This address cannot be geocoded.
11	The city name entered does not exist in the state that you entered. This address cannot be geocoded.
12	The street address entered is incomplete or incorrectly formatted. This address cannot be geocoded.
13	You are not licensed to geocode in the state that you entered. Please review your license agreement to determine which geographies your institution is licensed for.
14	The street name entered does not exist in the city that you entered. This address cannot be geocoded.
15	The street name entered is correct, but the street number is not within the correct range for this street. This address cannot be geocoded.
16	There is more than one street segment with the given address number. This address cannot be geocoded

17	The address contains two valid streets that do not intersect. This address cannot be geocoded
18	The city name entered is not covered by Wolters Kluwer's databases
99	The record was Manually geocoded
Z4	ZIP +4 Match
Z2	Zip +2 Match
Z5	ZIP Match
ZA	99% of the ZIP Code is within a single Census Tract
ZB	95% of the ZIP Code is within a single Census Tract
ZC	90% of the ZIP Code is within a single Census Tract

6. Sample request

```
{
  "Data": [
    {
      "Address": "1600 Pennsylvania Avenue NW",
      "City": "Washington",
      "STATE_ABRV": "DC",
      "Zip": "20500",
      "Income": "125"
    }, {
      "Address": "4 Jersey St",
      "City": "Boston",
      "STATE_ABRV": "MA",
      "Zip": "02215",
      "Zip4": "0"
    }
  ],
  "Attributes": {
    "ActivityYear": "2024",
    "AggressivenessMode": "1",
    "ZipPercentageLevel": "1",
    "IsZipPercentMatchEnabled": "true",
    "IsTractMatchEnabled": "true",
    "IsZipCentroidMatchEnabled": "false",
    "IsZip2CentroidMatchEnabled": "false",
    "IsZip4CentroidMatchEnabled": "true",
    "AllowWeakParcelAndTractsMatch": "false"
  }
}
```

7. Sample response

```
{
  "statistics": {
    "totalRecords": 2,
    "matchedRecords": 2,
    "unmatchedRecords": 0
  },
  "validationErrors": {},
  "data": [
    {
      "Address": "1600 Pennsylvania Avenue NW",
      "City": "Washington",
      "STATE_ABRV": "DC",
      "Zip": "20500",
      "Income": "125",
      "State": "11",
      "MSA": "47764",
      "County": "001",
      "CensusTrac": "9800.00",
      "MmwAddress": "",
      "mmwCity": "WASHINGTON",
      "mmwState": "DC",
      "mmwZip": "20500",
      "mmwZip4": "",
      "latitude": "38.895682",
      "longitude": "-77.036476",
      "mmwStat": "ZA",
      "gsLocationCode": "",
      "BlockGrp": "0",
      "BlockCode": "0",
      "gsMatchCode": "",
      "CountyName": "DISTRICT OF COLUMBIA",
      "IsGeocodeMatched": "True",
      "MatchDescription": "ZIP 99% match.",
      "Trct_incm_Catg": "5",
      "County_5": "11001",
      "Tract_11": "11001980000",
      "Distressed_Underserved": "0",
      "CRA_Eligible": "0",
      "Asian_Perc": "1.14",
      "Black_Perc": "64.77",
      "Hispanic_Perc": "2.84",
      "MedianFamilyIncome": "0",
      "MedianHouseholdIncome": "0",
      "HUDMedian": "106818",
      "MsaMedian": "106818",
    }
  ]
}
```



```

    "MsaName": "Washington, DC-MD",
    "FamiliesBelowPovertyLevel": "0",
    "LowIncomeFamilies": "0",
    "ModerateIncomeFamilies": "0",
    "MiddleIncomeFamilies": "0",
    "UpperIncomeFamilies": "3",
    "OwnerOccupiedIncome": "0",
    "OwnerOccupiedIncome14": "0",
    "RentalOccupiedIncome": "3",
    "RentalUnits": "3",
    "MinorityCount": "130",
    "PercentFamiliesBelowPovertyLevel": "0",
    "PercentLowIncomeFamilies": "0",
    "PercentModerateIncomeFamilies": "0",
    "PercentMiddleIncomeFamilies": "0",
    "PercentUpperIncomeFamilies": "100",
    "PercentMinority": "73.86",
    "FamiliesPercentTotalHouseholds": "100",
    "TractIncomeLevel": "0",
    "BorrowerIncomeLevel": "117.02",
    "BorrowerIncomeCategory": "3"
  },
  {
    "Address": "4 Jersey St",
    "City": "Boston",
    "STATE_ABRV": "MA",
    "Zip": "02215",
    "Zip4": "0",
    "State": "25",
    "MSA": "14454",
    "County": "025",
    "CensusTrac": "0102.06",
    "MmwAddress": "4 JERSEY ST",
    "mmwCity": "BOSTON",
    "mmwState": "MA",
    "mmwZip": "02215",
    "mmwZip4": "4148",
    "latitude": "42.346893",
    "longitude": "-71.098494",
    "mmwStat": "B1",
    "gsLocationCode": "AP05",
    "BlockGrp": "1",
    "BlockCode": "0",
    "gsMatchCode": "S80",
    "CountyName": "SUFFOLK COUNTY",
    "IsGeocodeMatched": "True",
    "MatchDescription": "Parcel match.",
    "Trct_incm_Catg": "5",
  }
}

```

```
"County_5": "25025",
"Tract_11": "25025010206",
"Distressed_Underserved": "0",
"CRA_Eligible": "0",
"Asian_Perc": "34.77",
"Black_Perc": "2.32",
"Hispanic_Perc": "10.35",
"Income": "0",
"MedianFamilyIncome": "0",
"MedianHouseholdIncome": "57331",
"HUDMedian": "112607",
"MsaMedian": "112607",
"MsaName": "Boston, MA",
"FamiliesBelowPovertyLevel": "23",
"LowIncomeFamilies": "155",
"ModerateIncomeFamilies": "6",
"MiddleIncomeFamilies": "19",
"UpperIncomeFamilies": "38",
"OwnerOccupiedIncome": "69",
"OwnerOccupiedIncome14": "31",
"RentalOccupiedIncome": "1078",
"RentalUnits": "1153",
"MinorityCount": "1114",
"PercentFamiliesBelowPovertyLevel": "10.55",
"PercentLowIncomeFamilies": "71.10",
"PercentModerateIncomeFamilies": "2.75",
"PercentMiddleIncomeFamilies": "8.72",
"PercentUpperIncomeFamilies": "17.43",
"PercentMinority": "51.72",
"FamiliesPercentTotalHouseholds": "19.01",
"TractIncomeLevel": "0",
"BorrowerIncomeLevel": "0",
"BorrowerIncomeCategory": "5"
}
]
}
```

8. Response codes

Below are the possible response codes for the Geocoder API:

- 200 – Success
- 400 – Bad Request
- 401 – Unauthorized
- 500 – Server Error

9. Testing

We recommend utilizing our Client Test (CT) environment for testing purposes.

The Geocoding API endpoints for the CT environment are as follows:

- Authorization: <https://ct.wizenterprise.com/public-api/authenticate>
- Geocoding: <https://ct.wizenterprise.com/public-api/lardata/geocode>

Note: If you have not been provisioned with access to our CT environment and would like to have access to please contact the Wiz SaaS Product Management team at WizSaaSProductTeam@wolterskluwer.com and someone on the team can assist.

For additional information on accessing the CT environment and reporting issues please refer to the following document; [Wiz SaaS Suite Client Test Procedures.pdf](#).

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