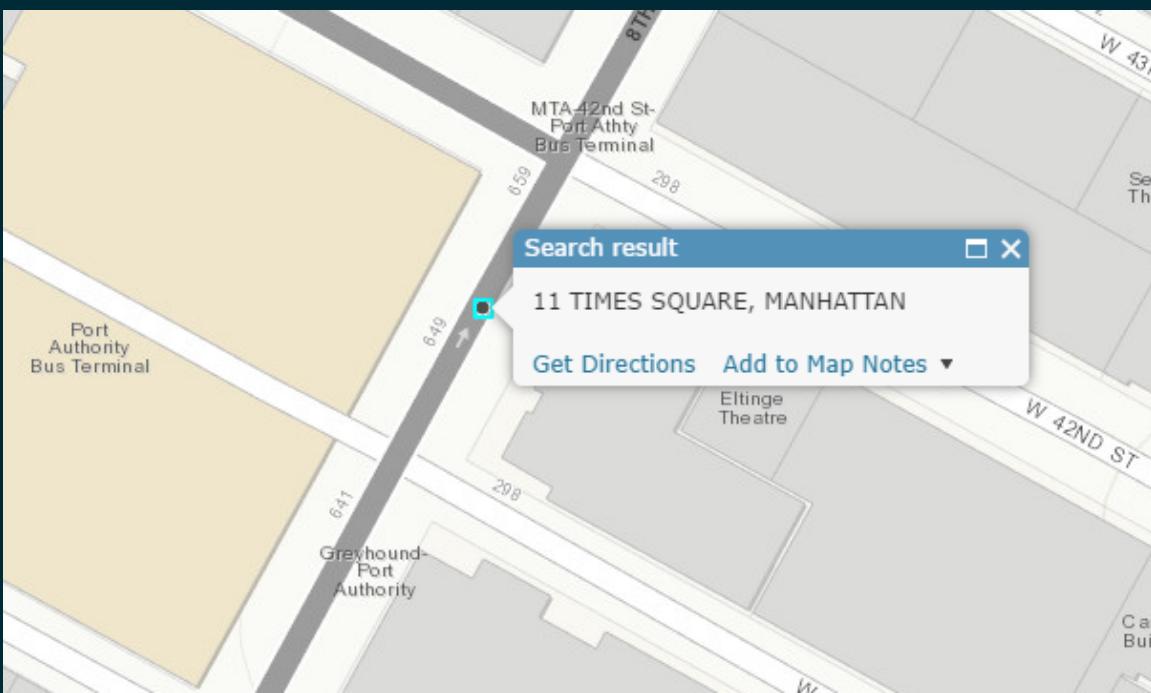


USING NYC GEOSUPPORT/ GEOCLIENT IN ESRI APPS

PRESENTED BY: [dvg] & esri

Microsoft Technology Center, 11 Times Square

3/1/2017



HI, I'M ED FARRELL

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efarrell@dvginteractive.com

<https://github.com/EdFarrell>



dvg

PURPOSE

How to integrate and extend the Geosupport system
with esri apps

OUTLINE

1. Resources for this talk & getting started
2. Brief review of Geosupport & Geoclient
3. Using NYCGeoClientGeoREST to integrate esri apps
4. Roadmap

RESOURCES

- GitHub - <https://github.com/DataVisionGroup/nyc-geosupport-esri-workshop>
- Handout

ge·o·code

A GIS operation for converting street addresses into spatial data that can be displayed as features on a map.

-esri

NYC GEOCODING: GEOSUPPORT

- Developed & maintained by NYC DoITT & NYC Dept. of City Planning (DCP) **THANK YOU!**
- Designed to run on IBM mainframe in ~1983
- Geosupport Desktop Edition for Windows/Linux desktop use. Can be downloaded at nyc.gov.
- Forward Geocoder

GEOSUPPORT FEATURES

- API access via .NET and Java
- Ships with **Geographic Online Address Translator (GOAT)** (deprecated) and Geosupport Batch Address Translator (GBAT)
- Mature support, with quarterly releases
- Advanced inputs and outputs

WHAT'S IN GEOSUPPORT?

- Addresses
- Streets (segmented networks)
- Places (addressable and non)
- Parcels
- Buildings
- Magic
- ...



THE DATA RABBIT HOLE



GEOSUPPORT INPUTS

- **Address (1B)** - Bronx, 307 East Tremont Avenue
- **Non-Addressable Place (1B)** - Manhattan, Carnegie Hall
- **Addressable Place (1B)** - Manhattan, 2 Penn Plaza
- **Intersections & Intersection Names (2) -**
 - Brooklyn, intersection of Flatbush Avenue and Atlantic Avenue
 - Manhattan, Isaac Stern Place
- **Blockface (3C)** - Manhattan, east side of Broadway between W 38th St and W 39th St
- **Street Stretch (3S)** - Manhattan, Broadway between W 38th St and W 54th St

GEO SUPPORT INPUTS

- **Tax Lot (BL)** - *Staten Island, Block 247 Lot 1*
- **Building Identification Number (BN)** - *5006708*
- **Address Point (AP)** - *Bronx, 307 East Tremont Avenue*

The list goes on, there are 16 functions...

GEOSUPPORT OUTPUTS: GOAT



Geographic Online Address Translator

Welcome to the Geographic Online Address Translator (GOAT)!

GOAT allows you to enter a New York City geographic location, such as an address, intersection, street segment, street stretch, block and lot or BIN, and returns back related geographic information, such as cross streets, side of street, tax block and lot (AKA Parcel -ID), five-digit ZIP code, census tract and block, police precinct, community district and city council district.

Information on the functions can be found in the [GOAT User Guide](#). Click on the output field label for its definition in the [Glossary](#).



GOAT is open to the public, and is found [here](#)

GEOSUPPORT OUTPUTS: GOAT

Function 1B: 231 E 10th St., Manhattan, NY 10003

ADDRESS
(Function 1B) INTERSECTION
(Function 2) STREET SEGMENT
(Function 3) STREET STRETCH
(Function 3S) BLOCK & LOT
(Function BL) BIN
(Function BN) STREET
(Name/Code)

Display Street, Property Level and Address Point Information by Address [?](#)

Select an Option Below

Display Street and Property Information ▾

Select a Borough Address Number Street or Place Name

Manhattan ▾ 231 EAST 10 STREET [Hide Search Options](#)

Roadbed Specific Information Address Range List
 TPAD Complete BIN List
 Display Both Principal Street Name
 DCP Preferred Street Name

Normalize Input Street Name as:

Input Street Name
 Primary Street Name
 Principal Street Name
 DCP Preferred Street Name

GEOSUPPORT OUTPUTS: GOAT

Geographic Info, Civil Service, Property Info, etc.

Geographic Information for 231 EAST 10 STREET in MANHATTAN

[Related Resources](#) | [Send Feedback](#) | [Create Link](#)

Orientation:
Address is on the left when facing from 2 AVENUE to 1 AVENUE

| | | | |
|---------------------------|------------------------|----------------------|-----------------|
| X,Y Coordinate: | 988336 , 204918 | From Node: | 0020809 |
| Latitude, Longitude: | 40.729129 , -73.985258 | From X,Y Coordinate: | 987906 , 205154 |
| Community District: | Manhattan 03 | To Node: | 0020901 |
| LION Face Code: | 1370 | To X,Y Coordinate: | 988565 , 204787 |
| LION Sequence Number: | 00070 | Segment From Node: | 0020809 |
| Street Code B10SC: | 11719001010 | Seg | |
| Alley/Cross Street Flag: | No Split/Change | Seg | |
| Traffic Direction: | W | Seg | |
| Coincident Segment Count: | 1 | Seg | |
| Segment Type: | Undivided | Feat | |
| 2010 Census Tract: | 40 | Roa | |
| 2010 Census Block: | 5001 | Blk | |

City Service Information

| | | | |
|-------------------------------|---------------------|------------------------------|-----------|
| Police Patrol Borough: | Manhattan South | Sanitation District/Section: | 103 / 034 |
| Police Precinct: | 9 | Sanitation Subsection: | 4B |
| Fire Division: | 1 | Regular Sanitation Pickup: | TTHS |
| Fire Battalion: | 4 | Recycling Sanitation Pickup: | ETH |
| Fire Company: | Ladder 11 | Organics Recycling Pickup: | |
| Health Area: | 62.00 | School District: | 1 |
| Health Center District: | 14 | DSNY Snow Priority: | C |
| DOT Street Light Area: | 1 | Hurricane Evac Zone | 6 |
| Neighborhood Tabulation Area: | MN22 / East Village | | |

Political Information

| | | | |
|-------------------------|----|---------------------------|----|
| City Council District: | 2 | Municipal Court District: | 2 |
| Assembly District: | 66 | Election District: | 34 |
| Congressional District: | 12 | State Senate District: | 27 |

BOE Preferred B7SC/Street Name: 11719001 / EAST 10 STREET

Property Level Information for 231 EAST 10 STREET in MANHATTAN

| | | | |
|--------------------------------|------------------------|-------------------------|-------------------|
| Tax Block: | 452 | RPAD SCC: | 5 |
| Tax Lot: | 42 | RPAD Building Class: | C6 |
| BBL: | 1004520042 | RPAD Interior Lot: | Not Interior Lot |
| Block Faces: | 1 | RPAD Irreg. Shaped Lot: | Not Irregular Lot |
| Sanborn Boro/Vol/Page: | 1/02 /027 | RPAD Condo Number: | N/A |
| X,Y Coordinate: | 988368 , 204985 | RPAD Co-op Number: | 1 |
| Latitude, Longitude: | 40.729312 , -73.985142 | Condo Lot: | Non-Condo |
| Vacant Lot: | Not Vacant | Tax Map/Section/Volume: | 1 / 02 / 05 |
| Low BBL of Condo: | N/A | High BBL of Condo: | N/A |
| BIN: | 1006458 | BIN Status: | No activity |
| TPAD BIN: | | TPAD BIN Status: | No activity |
| Corner Code: | NO | TPAD Conflict Flag: | 1 |
| Structures: | 1 | | |
| Business Improvement District: | | | |

Address Range List (Number of Addresses: 1)

| | | | | | |
|-------|---------------|----------------|----------------|---------|-----------------|
| Type: | Low Address#: | High Address#: | Street Name | BIN: | TPAD BIN Status |
| | 231 | 231 | EAST 10 STREET | 1006458 | No activity |

'Type' Field
Blank Space = Ordinary Address Range

[Related Resources](#) ▾ [Go](#)

GEOSUPPORT OUTPUTS: GOAT

231 E 10th St., Manhattan, NY 10003 (Function AP)

Address Geographic Info

Select an Option Below

Select a Borough Address Number Street or Place Name

Geographic Information for 231 EAST 10 STREET in MANHATTAN

[Related Resources](#) | [Send Feedback](#) | [Create Link](#)

| | | | |
|-------------------|-----------------|----------------------|------------------------|
| Tax Block: | 452 | Condo Lot: | Non-Condo |
| Tax Lot: | 42 | RPAD Condo Number: | N/A |
| BBL: | 1004520042 | RPAD Coop Number: | N/A |
| Low BBL of Condo: | N/A | High BBL of Condo: | N/A |
| X,Y Coordinate: | 988348 , 204949 | Latitude, Longitude: | 40.729214 , -73.985214 |
| BIN: | 1006458 | Structures: | 1 |
| Address Point ID: | 1008185 | | |

Address Point Address Range

| | | | | |
|-------|---------------|----------------|----------------|---------|
| Type: | Low Address#: | High Address#: | Street Name | BIN: |
| | 231 | 231 | EAST 10 STREET | 1006458 |

'Type' Field

GEOSUPPORT OUTPUTS: GOAT

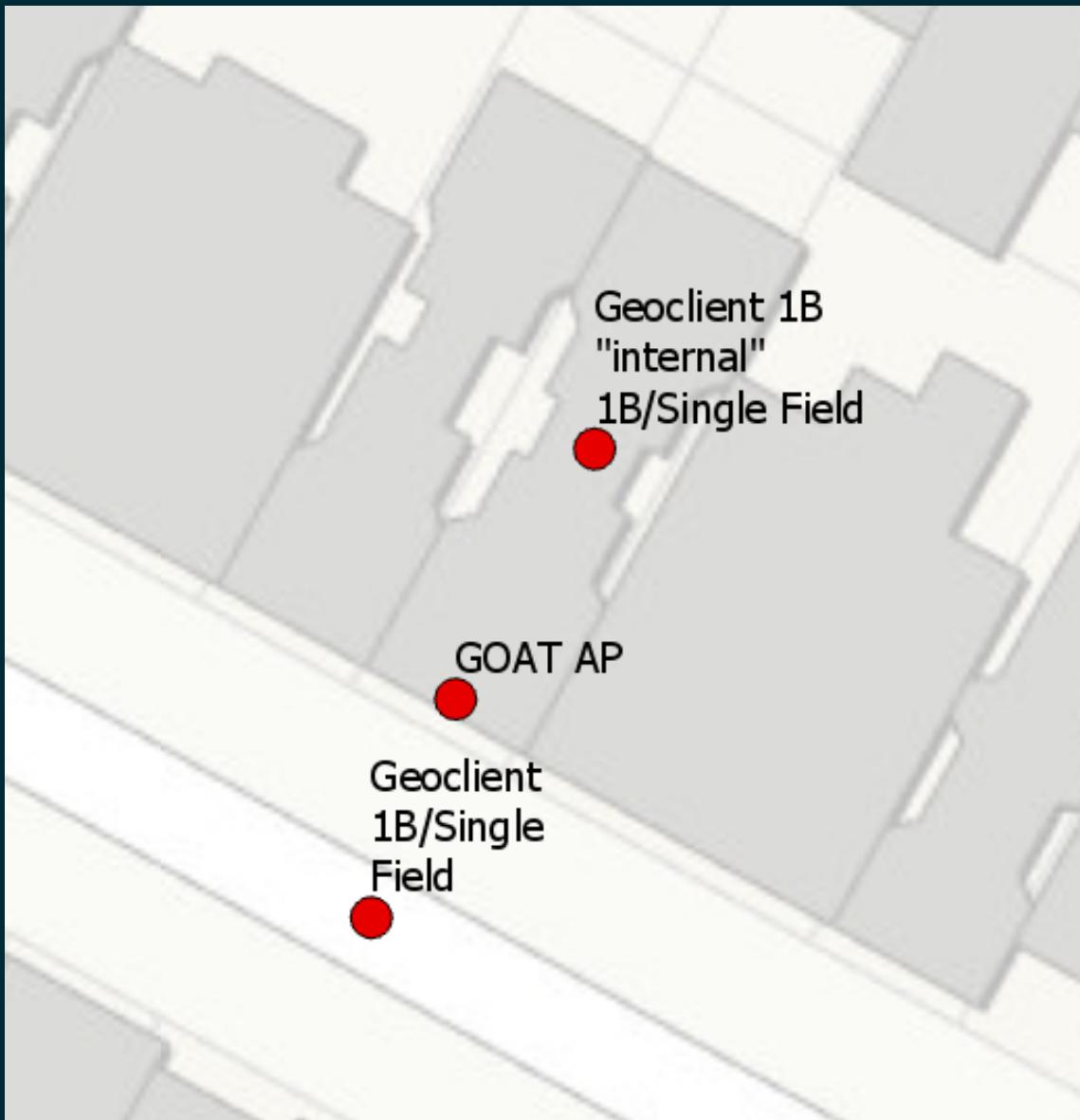
BIN: 1006458

| Property Level Information for Building Identification Number 1006458 in Manhattan | | | | | |
|---|------------------------|---------------------------|-------------------|---------|-----------------|
| Related Resources Send Feedback Create Link | | | | | |
| Tax Block: | 452 | RPAD SCC: | 5 | | |
| Tax Lot: | 42 | RPAD Building Class: | C6 | | |
| BBL: | 1004520042 | RPAD Interior Lot: | Not Interior Lot | | |
| Block Faces: | 1 | RPAD Irreg. Shaped Lot: | Not Irregular Lot | | |
| Sanborn Boro/Vol/Page: | 1/02 /027 | RPAD Condo Number: | N/A | | |
| X,Y Coordinate: | 988368 , 204985 | RPAD Co-op Number: | 1 | | |
| Latitude, Longitude: | 40.729312 , -73.985142 | Condo Lot: | Non-Condo | | |
| Vacant Lot: | Not Vacant | Tax Map /Section /Volume: | 1 / 02 / 05 | | |
| Low BBL of Condo: | N/A | High BBL of Condo: | N/A | | |
| BIN: | 1006458 | BIN Status: | No activity | | |
| TPAD BIN: | | TPAD BIN Status: | No activity | | |
| Corner Code: | NO | TPAD Conflict Flag: | 1 | | |
| Structures: | 1 | | | | |
| Business Improvement District: | | | | | |
| Address Range List (Number of Addresses: 1) | | | | | |
| Type: | Low Address#: | High Address#: | Street Name | BIN: | TPAD BIN Status |
| | 231 | 231 | EAST 10 STREET | 1006458 | No activity |

'Type' Field
Blank Space = Ordinary Address Range

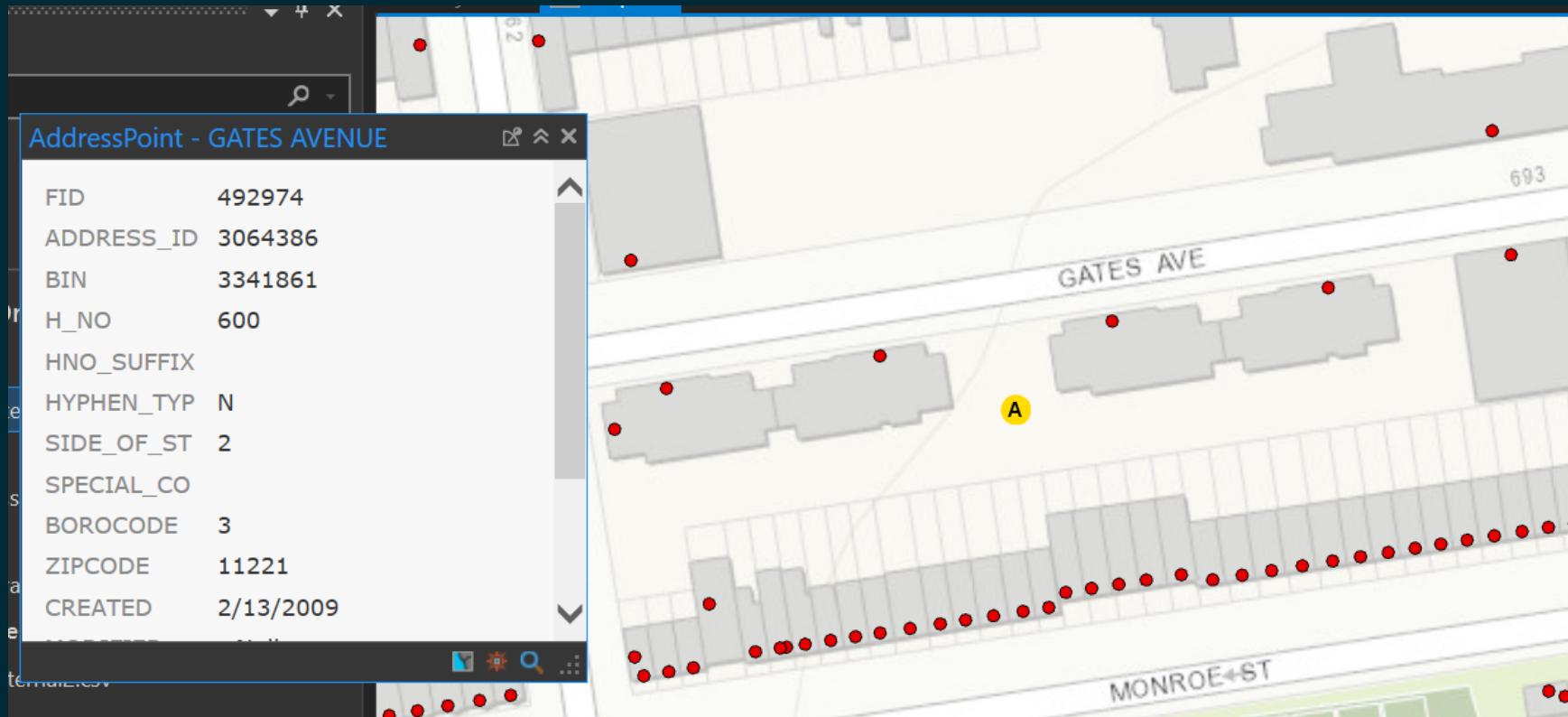
[Related Resources](#) ▾ [Go](#)

GEOSUPPORT RETURN LOCATIONS: 231 E 10 ST



GEOSUPPORT RETURN LOCATIONS: 600 GATES AVE, BROOKLYN

BBL == BIN Location



BIN: 3051253, 3341861, 341863, 3341864

BBL: 3018160001

GEO SUPPORT SUMMARY

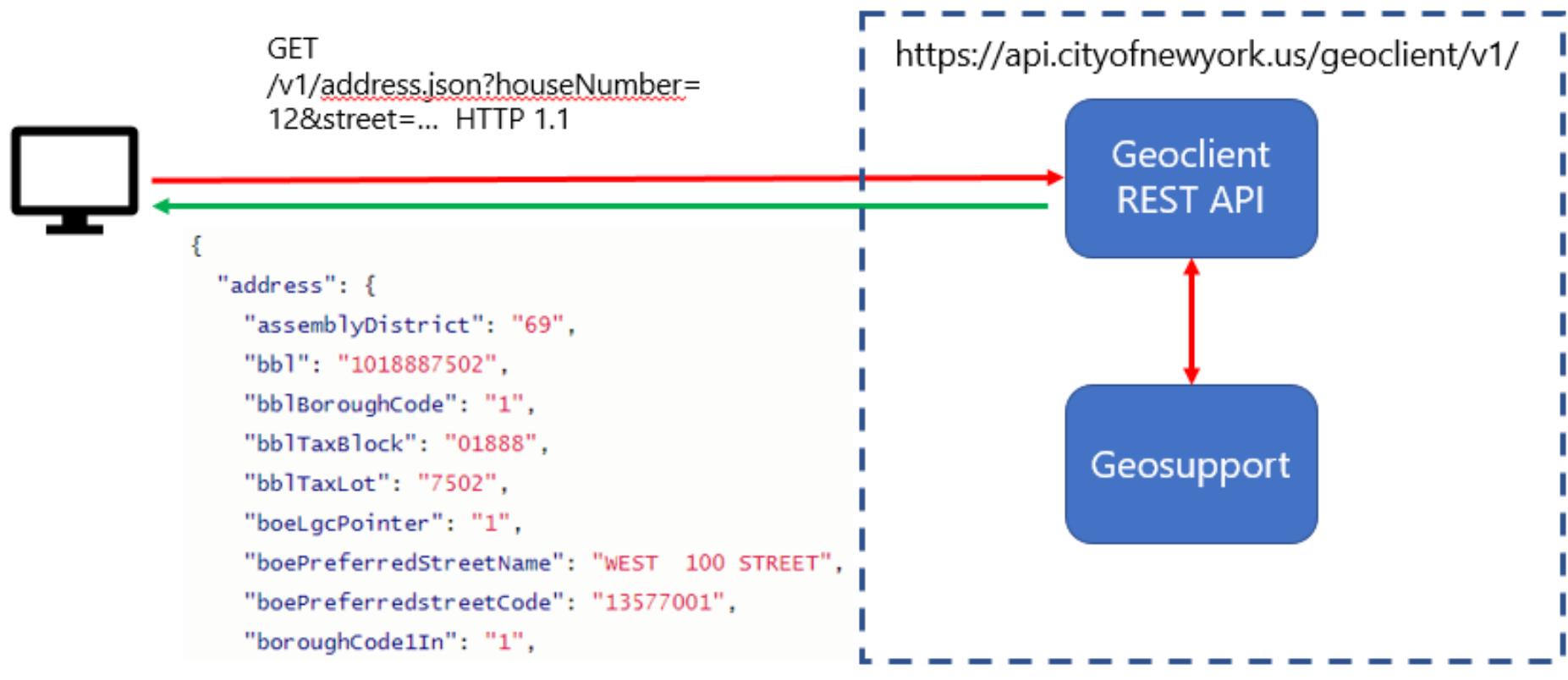
- Forward geocoder
- Variety of inputs, specialized for NYC
- Robust set of outputs, specific to the input options

...but how to do this over the web?

NYC GEOCLIENT API

- RESTful web service backed by the Geosupport system.
- Developed/supported by DoITT & DCP
again...Thanks!
- Service available through the [NYC Developer Portal](#)
- Source available at [Github](#)
- API docs available at [Geoclient Docs](#)

NYC GEOCLIENT API: ARCHITECTURE



NYC GEOCLIENT API: FUNCTIONS

| Type | Description | Geosupport Function |
|--------------|---|---------------------|
| Address | Given a valid address, provides blockface-level, property-level, and political information. | 1B |
| BBL | Given a valid borough, block, and lot provides property-level information. | BL |
| BIN | Given a valid building identification number provides property-level information. | BN |
| Blockface | Given a valid borough, "on street" and cross streets provides blockface-level information. | 3 |
| Intersection | Given a valid borough and cross streets returns information for the point defined by the two streets. | 2 |
| Place | Same as 'Address' above using well-known NYC place name for input. | 1B |

NYC GEOCLIENT API: SINGLE-FIELD

Single-field search enables access to all 6 request types. As long as the request has enough information, Geoclient can recognize which function to call

1. A ten-digit number where the first digit is 1, 2, 3, 4 or 5 is recognized as a BBL request:

1000670001

2. A seven-digit number where the first digit is 1, 2, 3, 4 or 5 is recognized as a BIN request:

1079043

3. If the input string ends with a United States-related country identifier it is recognized and removed:

314 W 100 ST, NY, NY 10025 [USA]

NYC GEOCLIENT API: OUTPUT

231 E 10th St., Manhattan, NY 10003

142 fields returned

GET STARTED WITH GEOCLIENT →

NYC GEOCLIENT API: GETTING STARTED

1. Register with the NYC Developer Portal
2. Create a project & get API keys. **Keys are required for deploying NYCGeoclientGeoREST**
3. Use the Developer Portal to create requests
4. Discuss other request methods: Python SDK

REGISTER

Open a browser and go to the NYC Developer Portal at
<https://developer.cityofnewyork.us/>

[Home](#)[App Showcase](#)[API Showcase](#)[Site Feedback](#)

HOME / USER / Create new account

Create new account

Register for a NYC Portal Developer account to submit feedback and get keys to use our APIs.

Username *

[More information?](#)

E-mail address *

[More information?](#)

Organization *

CREATE A PROJECT

1. Log in to the Developer Portal
2. Click "My Account"
3. Click "View or Create a New Project"
4. Click "Click here to create a new project"
5. Create a project
 1. **Project Name:** workshopstest
 2. **Description:** type anything you like
 3. **Available APIs:** Choose "Geoclient v1"
 4. Click "Create Project"

CREATE A PROJECT

Create Project

Project Name *

Description *

B *I*

test project for workshop

Path: p

*Maximum number of characters allowed is 1000.

▼ Available APIs

This fieldset contains the APIs available for use.

- Open311 Inquiry v1
- DOT Data Feeds v1
- Comptroller's Checkbook v1
- HPD Data Feeds v1
- City Hall Data Feeds v1
- Events Calendar v1
- Geoclient v1

CREATE A PROJECT

workshoptest Edit

Description
test project for workshop

Geoclient v1
[See Documentation](#)

Project App ID:
e9f52046

Project App Key:
647dd72ec886b23f78317751653ddff3

Only alphanumeric characters [0-9,a-z, A-Z], between 6 and 256 characters long. No spaces allowed.
[Create New Key](#)

Copy the App ID and Project App Key to Notepad.

CREATE REQUESTS

1. Go to the Geoclient API page

<https://developer.cityofnewyork.us/api/geoclient-api>

2. Click the Try It: Active Docs link.

Operations

Geoclient v1

- Returns block and property level information about an address
`/geoclient/v1/address.{content_type}` **GET**
- Returns property level information about a tax lot
`/geoclient/v1/bbl.{content_type}` **GET**
- Returns property level information about a building
`/geoclient/v1/bin.{content_type}` **GET**
- Returns information about a segment defined by an on street between two cross-streets
`/geoclient/v1/blockface.{content_type}` **GET**
- Returns information about a point defined by two cross streets
`/geoclient/v1/intersection.{content_type}` **GET**
- Returns address information using a well-known place name as input
`/geoclient/v1/place.{content_type}` **GET**

CREATE REQUESTS

Make an address request, click on the first function.

Geoclient v1

Returns block and property level information about an address /geoclient/v1/address.{content_type} **GET**

Description

Given a valid house number, street and borough, this operation returns block and property level information about an address. Results will include X/Y coordinates, political, city service and property information as well as normalized street names and codes.

| PARAMETER | VALUE | DESCRIPTION |
|--------------|------------------------|---|
| content_type | json ▾ | Specifies the desired content type of the returned data |
| houseNumber | 231 | The house number portion of the address |
| street | East 10th street | The street portion of the address |
| borough | Manhattan ▾ | The borough in which the address is located |
| app_id | 08195637 | Your access application id |
| app_key | 54fb22868f1e31d37dbb50 | Your access application key |

Send Request [HIDE RESPONSE](#)

Request

```
curl -v -X GET "https://api.cityofnewyork.us/geoclient/v1/address.json?
houseNumber=231&street=East+10th+street&borough=Manhattan&app_id=08195637&app_key=54fb22868f1e31d37dbb50747
fce2220"
```

Response Body

```
{
  "address": {
    "assemblydistrict": "66",
    "bb1": "1004520042",
    "bb2": "1004520042"
  }
}
```


CREATE REQUESTS

Explore the other ways to make requests.

USE PROGRAMMING LANGUAGES TO MAKE REQUESTS: PYTHON, NODE.JS, ETC.

- Python - "nyc-geoclient" available at
<https://github.com/talos/nyc-geoclient>
- Python - "NYCParkingGeocode" available at
<https://github.com/tswanson/NYCParkingGeocode>
- node.js - "nyc-geoclient" available at
<https://github.com/akilism/nyc-geoclient>

NYC GEOCLIENT SUMMARY

- Available over the web via REST
- Continuously updated
- Limits
 - Maximum of 2,500 requests/minute
 - Maximum of 500,000 requests per day
- Ability to easily develop against API
- Subset of 6 Geosupport functions + single field
- Geoclient access is FREE!
- Returns roadbed address & internal parcel location

INTEGRATE WITH ESRI →

Geosupport & Geoclient are great, so how do I use them in esri products like ArcGIS Online or ArcGIS Pro?



NYCGEOCLIENTGOREST

- "NYCGeoclientGeoREST" - ASP.NET web application developed by esri engineers Sam Berg and Ping Jiang
- Creates a standard ArcGIS Server geocoding RESTful endpoint that can be used by esri products
- dvg Github repo hosted at <https://github.com/DataVisionGroup/geoclient-esri>
- esri version hosted at <https://github.com/Patterns-Practices/NYCGeoClientGeoREST>, which is unsupported.

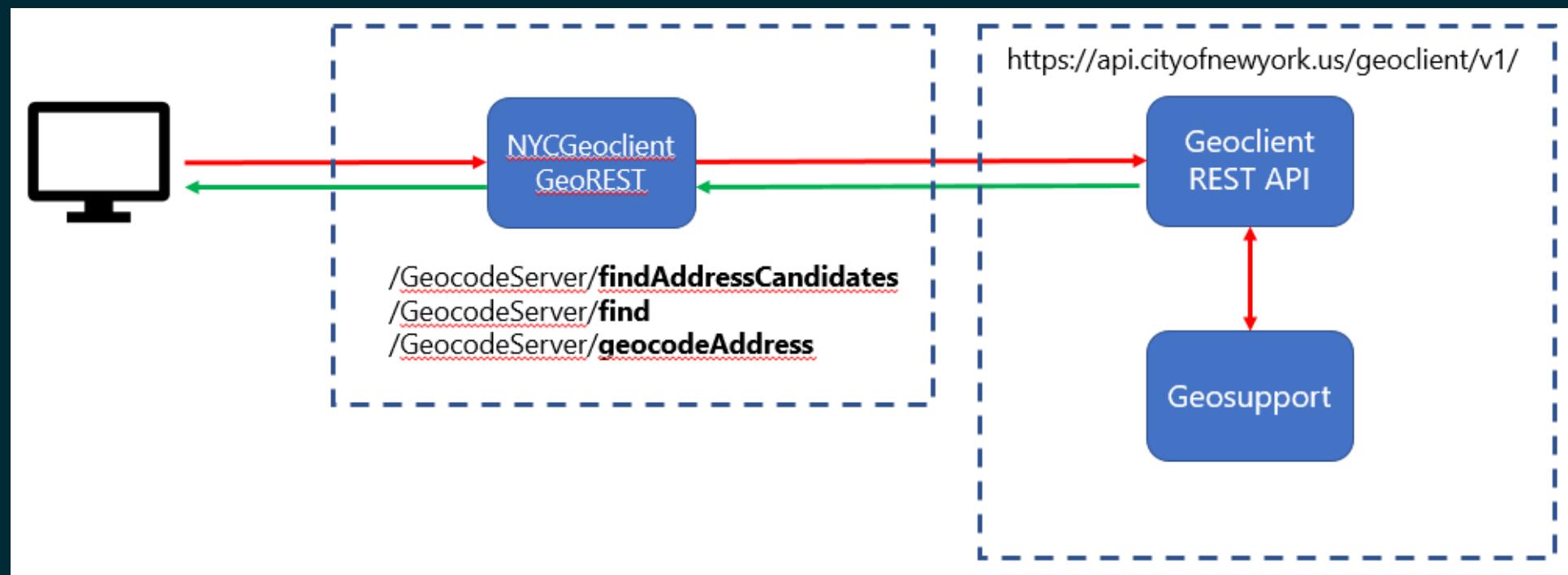
WHAT ARE THE STEPS TO USE THIS?

1. Deploy NYCGeoClientGeoREST (GCSR) **more on this later...**
2. Register the GCSR endpoint with ArcGIS Online (AGO)
3. Use it in AGO maps/apps
4. Use it in ArcGIS Pro

WHAT FUNCTIONS DOES GCGR SUPPORT?

- All 6 functions of Geoclient
- Single field address lookup
- + Batch geocoding (in development)

GCGR ARCHITECTURE



GCGR STANDARDS

- Standard esri REST endpoints for Geocoder services.
- Any customization should/will adhere
- Doc
 - ArcGIS Resources -
<http://resources.arcgis.com/en/help/arcgis-rest-api/>
 - Whitepaper -
<http://www.esri.com/library/whitepapers/pdfs/geosrest-spec.pdf>

WHAT ARE THE RESTRICTIONS?

- Same as Geoclient (2,500/min 500,000/day)
- Open Source license

LET'S GET STARTED!

NYCGEOCLIENTGEOREST: GETTING STARTED

1. Register GCGR with your AGO Organization
2. Use GCGR in AGO
3. Use GCGR in ArcGIS Pro
4. Use GCGR in ArcGIS Explorer
5. Can I deploy it myself? Yes, we'll get to that...

NYCGEOCLIENTGEOREST: REGISTER WITH ARCGIS ONLINE

1. Sign in to AGO Organization or Account

- If you don't have an AGO account, please register for an ArcGIS for Developers account here
<https://developers.arcgis.com/>
- This will enable an AGO account, and provide 50 free credits

REGISTER GCGR WITH ARCGIS ONLINE

1. Go to My Organization
2. Click on EDIT SETTINGS
3. Click on the Utility Services Tab
4. Click ADD GEOCODER

[SAVE](#)[CANCEL](#)

- [General](#)
- [Home Page](#)
- [Gallery](#)
- [Map](#)
- [Item Details](#)
- [Groups](#)
- [Utility Services](#)
- [Roles](#)
- [Marketplace](#)
- [Credits](#)
- [Security](#)
- [Open Data](#)

Utility Services

Configure the utility services for your organization.

Printing

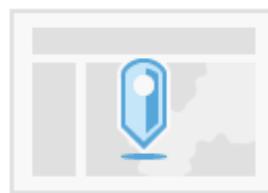


Configure your print service. Enter the URL of your print service, or leave blank to use Esri's default.

Esri Default

Example: <https://webadaptor.domain.com/arcgis/rest/services/Utilities/PrintingTools/GPServer>

Geocoding



Establish the geocoders that members of your organization will have access to. Click the pencil icon to edit a geocoder's name, and set other properties. You can also reorder, configure, or delete your geocoders.

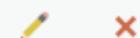
[ADD GEOCODER](#)

Name

↓ NJ Geocoder



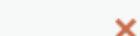
↑ ↓ NYC GeoSupport



↑ ↓ NYStreetAddress



↑ Esri World Geocoder

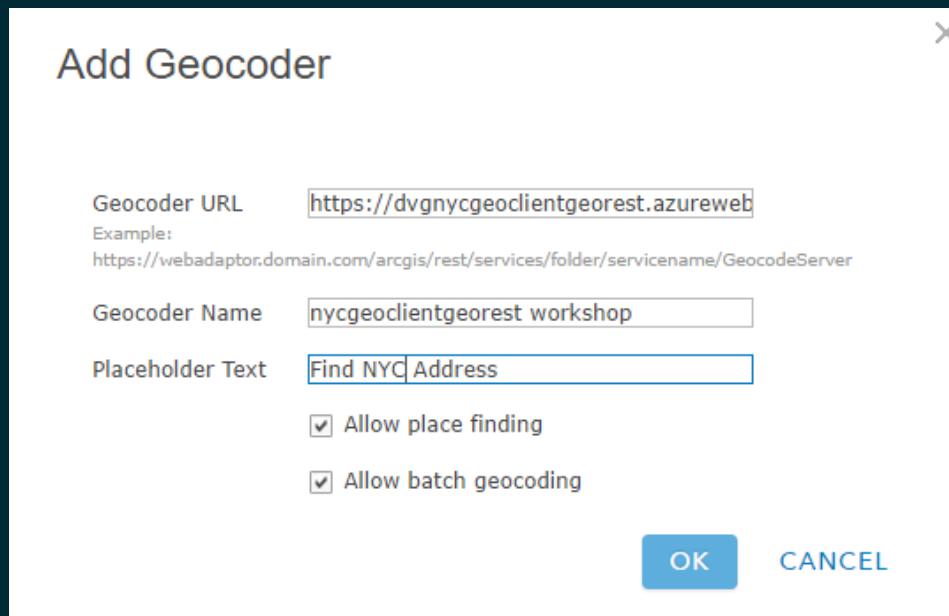


1 - 4 of 4 results

dvg endpoint:

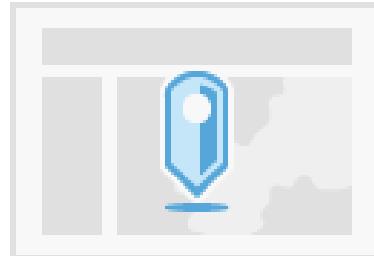
<https://dvgnycgeoclientgeorest.azurewebsites.net/GeocodeServer>

esri endpoint: <https://nycgeocode.bd.esri.com/GeocodeServer>



- Click OK
- Use the arrows to move the GCGR geocoder to the top of the list
- Click SAVE!

Geocoding



Establish the [geocoders](#) that members of your organization will have access to. Click name, and set other properties. You can also reorder, configure, or delete your geocoders.

[ADD GEOCODER](#)

Name



nycgeoclientgeorest workshop



NOW WE ARE READY TO GEOCODE IN AGO,
PRO, ETC.

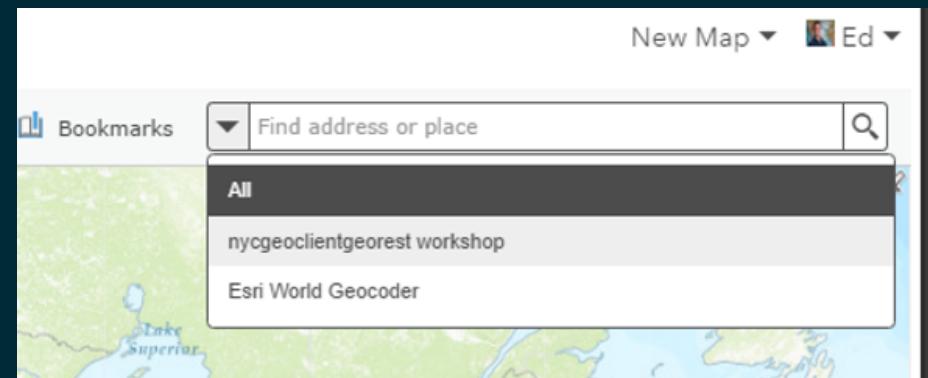


AGO: MAKE A MAP & GEOCODE

1. Click on Map on the top
Menu

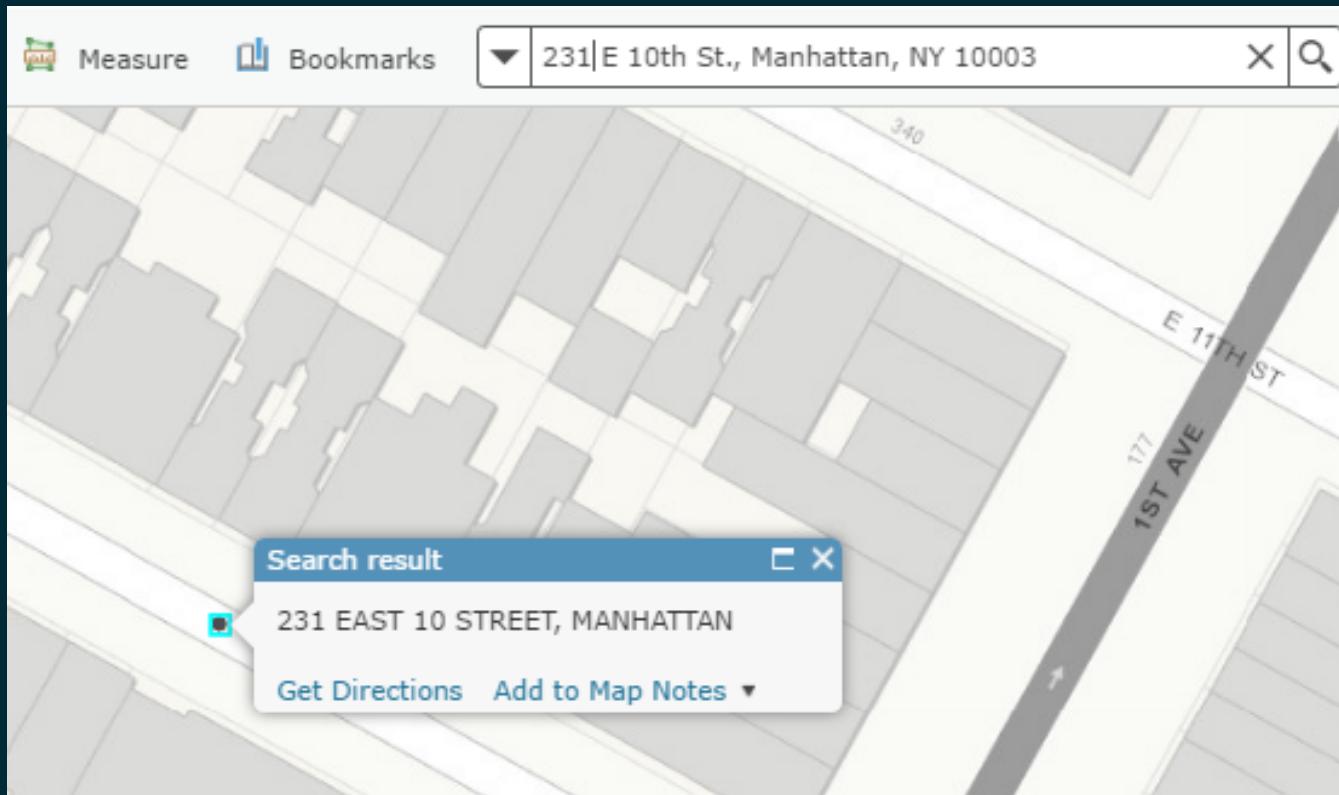
2. Set the geocoder as
"nycgeoclientgeorest
workshop"

3. It should say "Find NYC
Address" in the
geocoder.



AGO: MAKE A MAP & GEOCODE

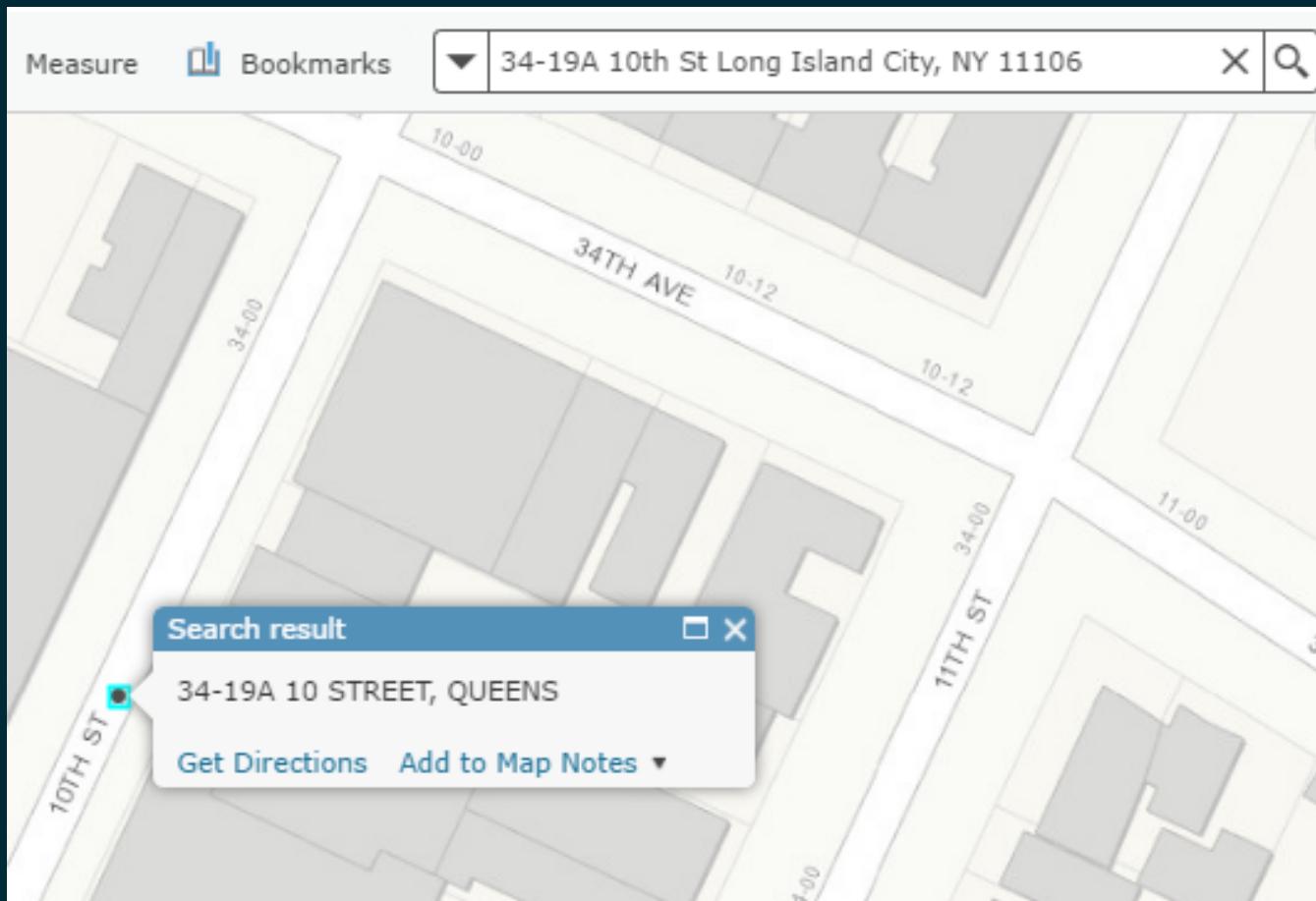
Address: 231 E 10th St., Manhattan, NY 10003



Returns standardized address

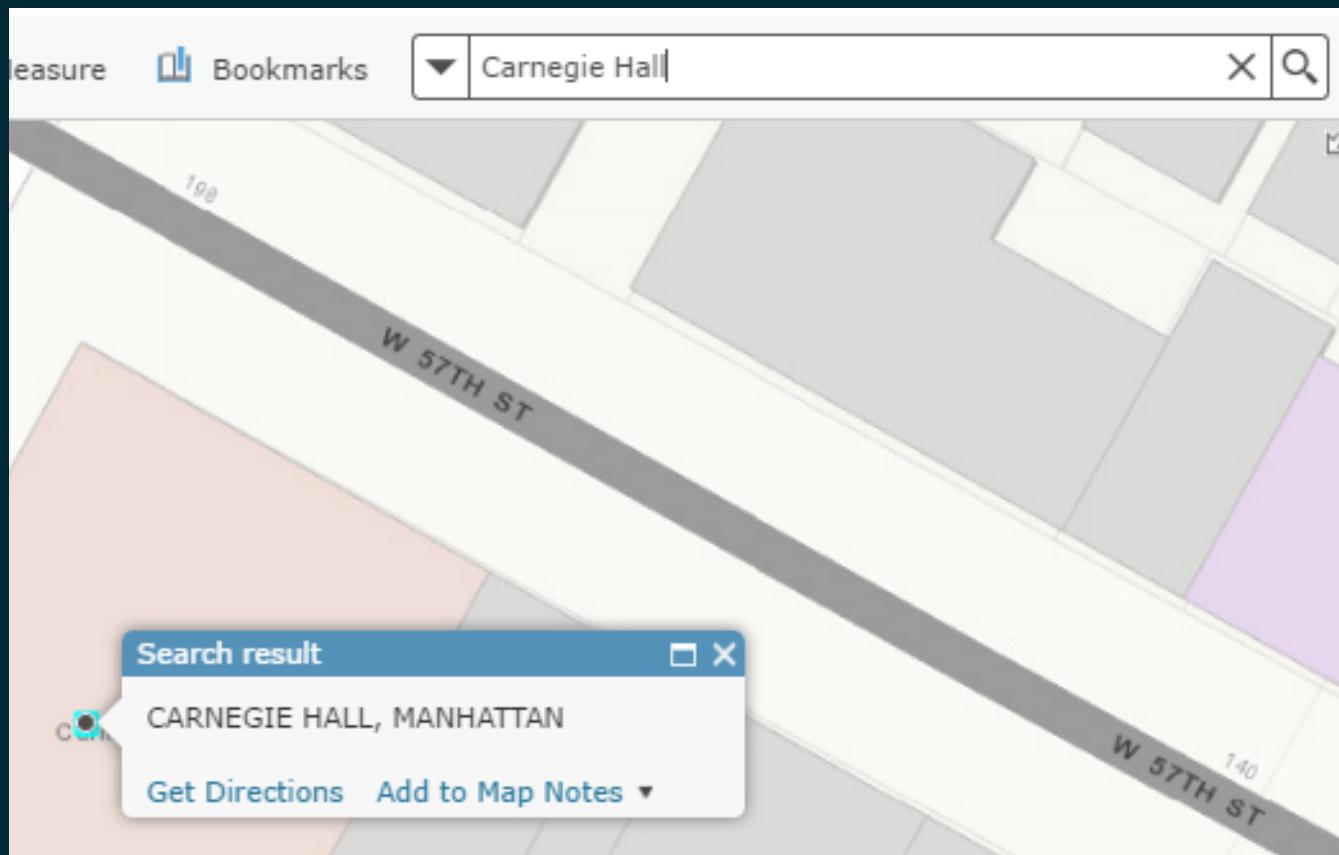
AGO: MAKE A MAP & GEOCODE

Queens Address: 34-19A 10th St Long Island City, NY 11106



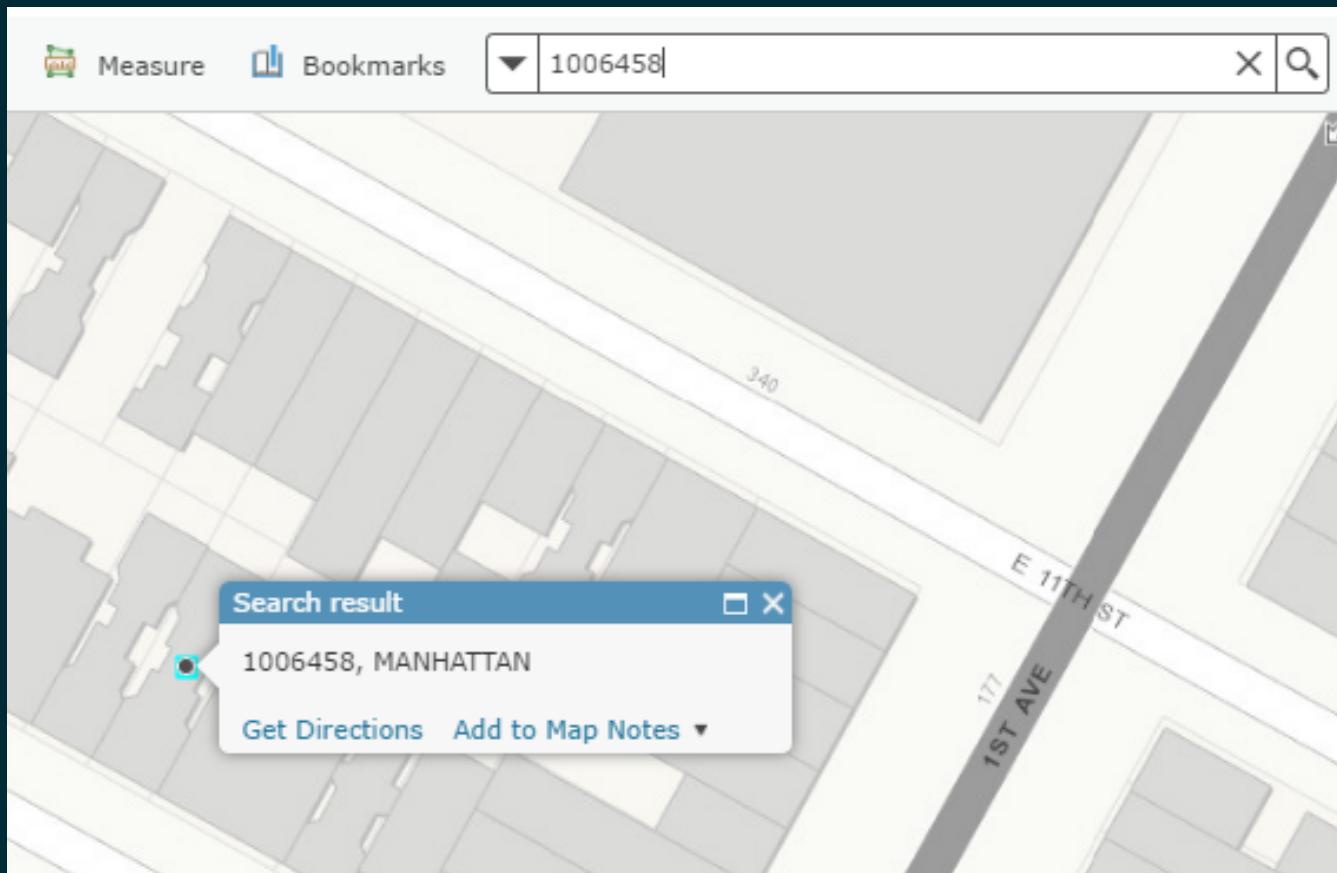
AGO: MAKE A MAP & GEOFENCE

Place Name: Carnegie Hall



AGO: MAKE A MAP & GEOCODE

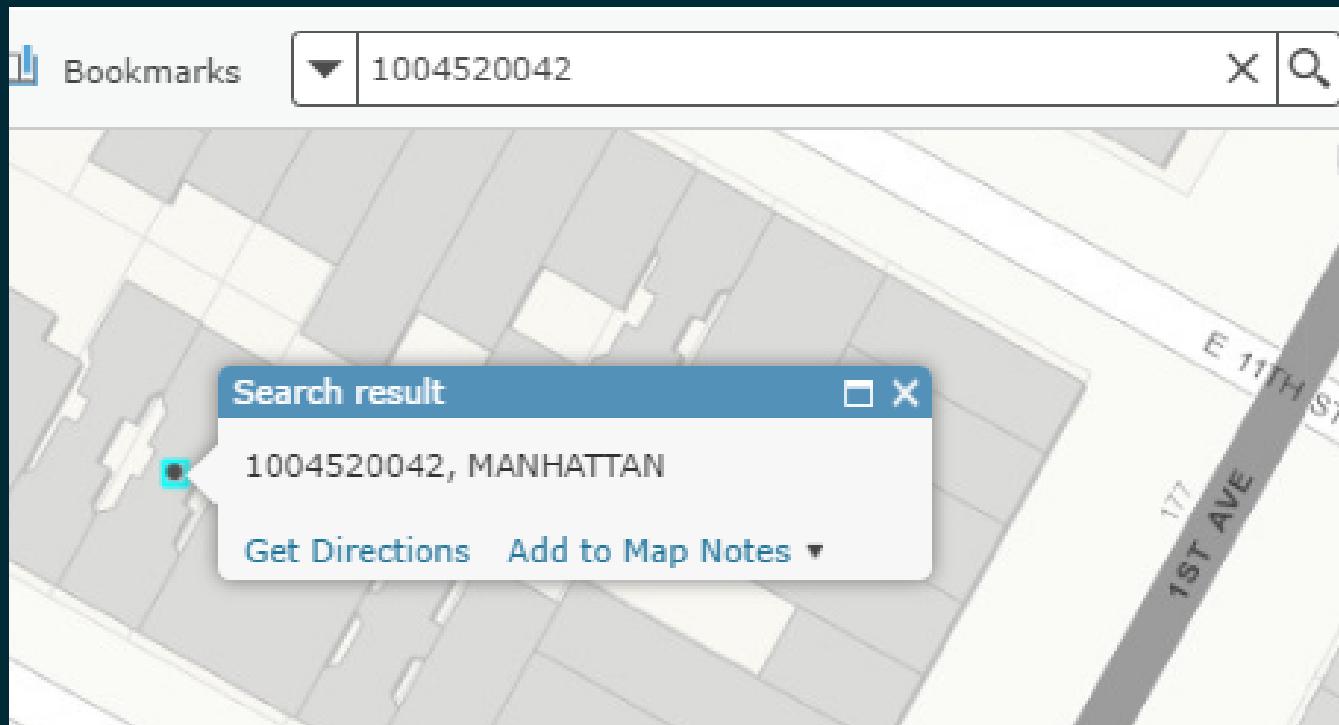
BIN: 1006458



AGO: MAKE A MAP & GEOCODE

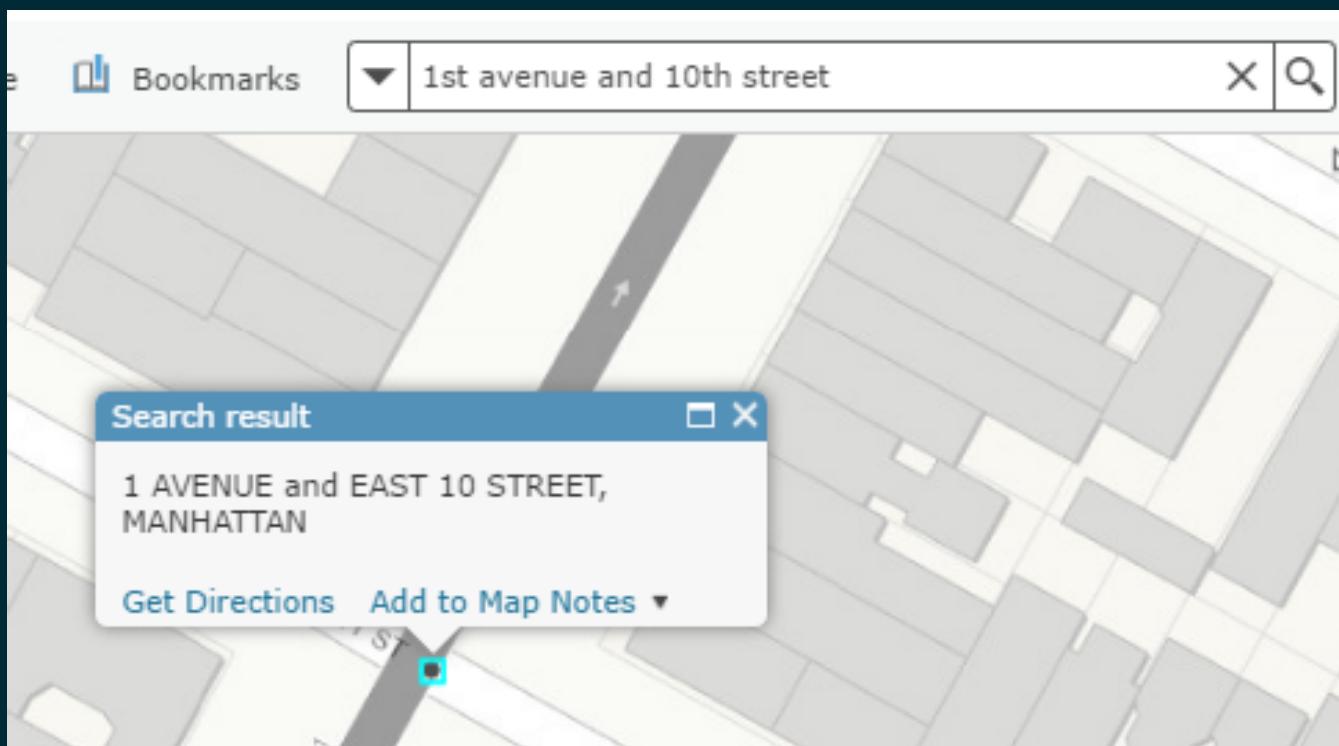
BBL: 1004520042 (10 digits)

Borough = 1 (1 digit), Block = 452 (5 digits), Lot = 42 (4 digits)



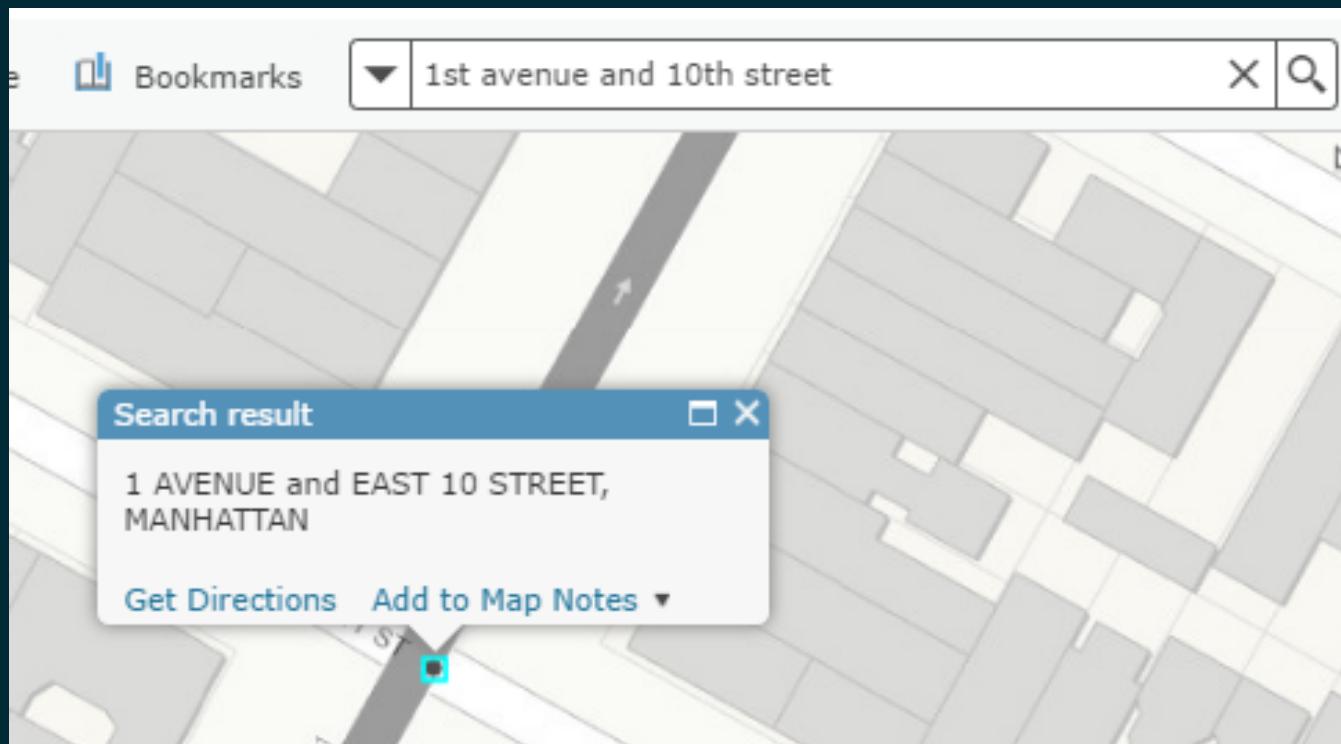
AGO: MAKE A MAP & GEOCODE

Intersection: 1st Avenue & East 10th St., Manhattan



AGO: MAKE A MAP & GEOCODE

Blockface: 1st Avenue between E 10 ST and E 11 ST



ARCGIS PRO: USE AGO GEOCODER

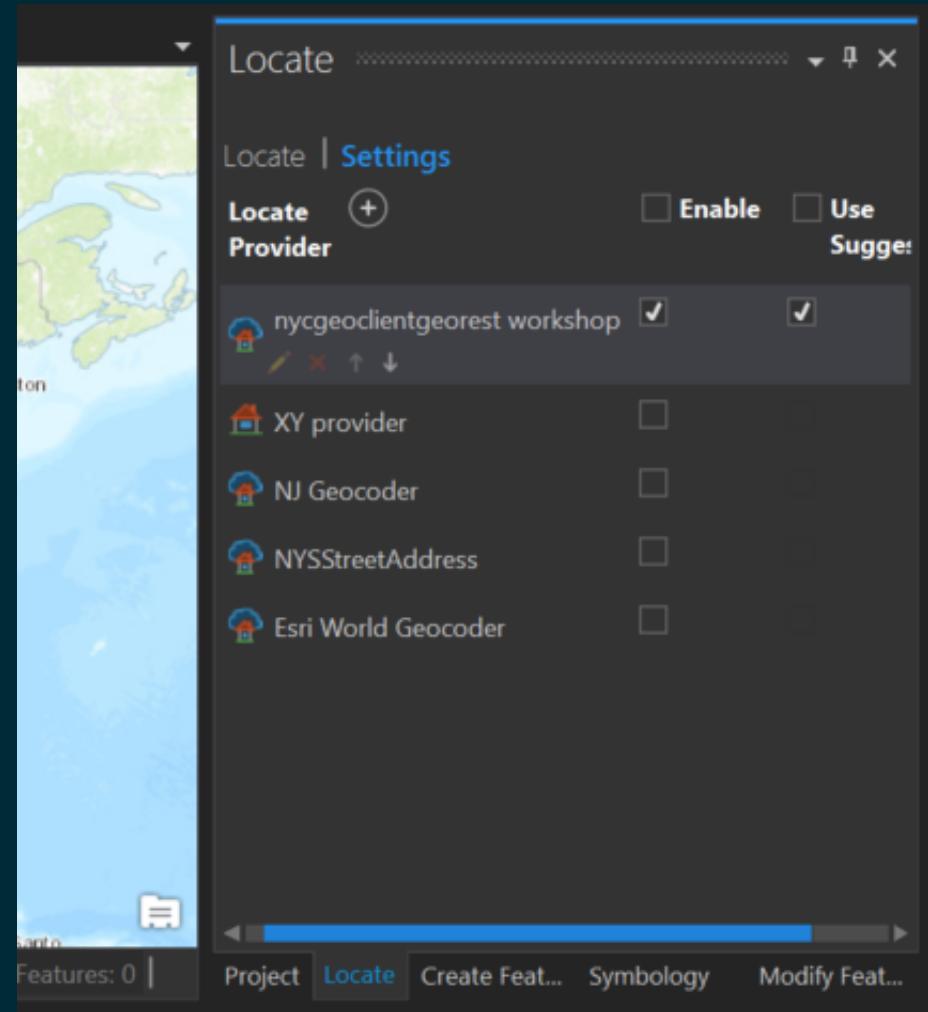


ABOUT ARCGIS PRO

- If your Department has ArcGIS Desktop Licences, you have access to Pro
- Pro is tightly integrated with AGO
- Features: 64bit, 3d, Portal/AGO integration, Vector Tiles, etc.
- I'm not saying that ArcMap is going away, but...

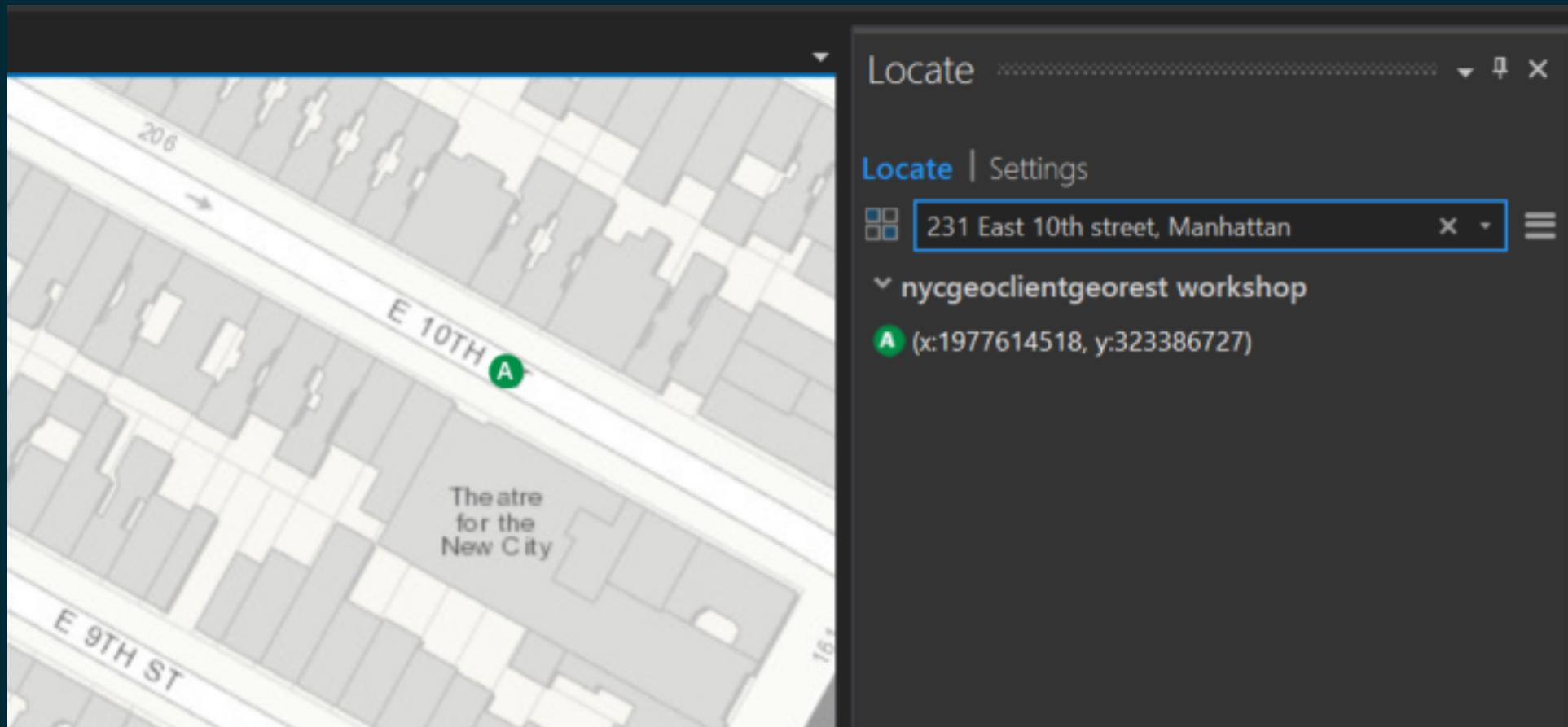
PRO: MAKE A MAP & GEOCODE

1. Open ArcGIS Pro
2. Create a new project
3. Select the "Locate Tab",
this will load AGO/Portal
locators
4. Click "Settings"
5. Move the CGGR locator
to the top, enable it,
disable the others if you
don't want to cascade



PRO: MAKE A MAP & GEOFENCE

1. In the "Locate" tab, click "Locate"
2. Search for an address



OTHER WAYS TO USE NYCGEOCLIENTGEOREST

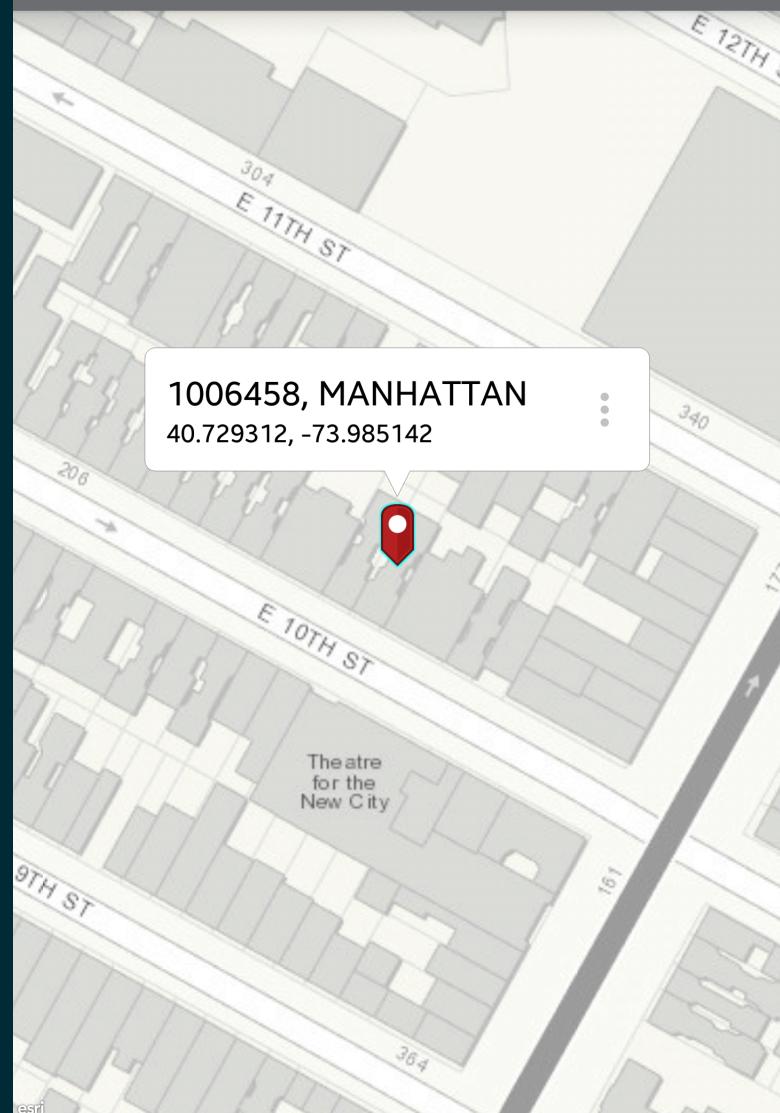
- ArcGIS Explorer
- ArcGIS SDKs/APIs
- Portal & AGO Maps & Apps (e.g. Collector, etc.)



89% 2:58 PM



NYC Workshop



DEPLOYMENT SCENARIOS: SIMPLE TO ADVANCED

DEPLOYMENT SCENARIOS: SIMPLEST, DON'T DEPLOY, USE OURS.

Feel free to use the dvg endpoint

<https://dvgnycgeoclientgeorest.azurewebsites.net/Geoc>

It's a small instance and there's no SLA. If you need
more juice, submit a GitHub issue here

<https://github.com/DataVisionGroup/geoclient-esri/issues>

FIRST, HOW TO DEPLOY GCGR TO IIS

1. Clone the repo

<https://github.com/DataVisionGroup/geoclient-esri>,
or download as a .zip file and unzip.

2. Build the solution in Visual Studio 2015 (or above).

This will install package dependencies.

3. Debug the solution to make sure it works

4. Deploy to IIS (8 or above).

DEPLOYMENT SCENARIOS: SIMPLE

- Deploy NYCGeoClientGeoREST on your PC, req's:
 - Visual Studio Community 2015+ (free)
 - Internet Information Services (IIS) (free)
 - NYC Developer keys
 - Internet connection



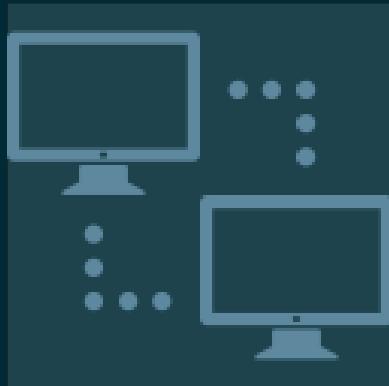
DEPLOYMENT SCENARIOS: INTERMEDIATE

- Deploy NYCGeoClientGeoREST to cloud, req's:
 - Visual Studio Community 2015+ (free)
 - Windows Server VM with IIS (internal or external)
 - NYC Developer keys
 - Azure Web App, Amazon Elastic Beanstalk, etc.



DEPLOYMENT SCENARIOS: ADVANCED

- Deploy Geosupport + Geoclient + **NYCGeoClientGeoREST** to cloud (internal or external), req's:
 - Visual Studio Community 2015+ (free)
 - Windows Server VM with IIS (internal or external)
 - Linux Server for Geosupport/Geoclient
 - Strategy for HA



NYCGEOCLIENTGEOREST: 2 NOTABLE ENHANCEMENTS

- Reproject - GCGR reprojects to any requested SR
- Batch Geocode (in development)

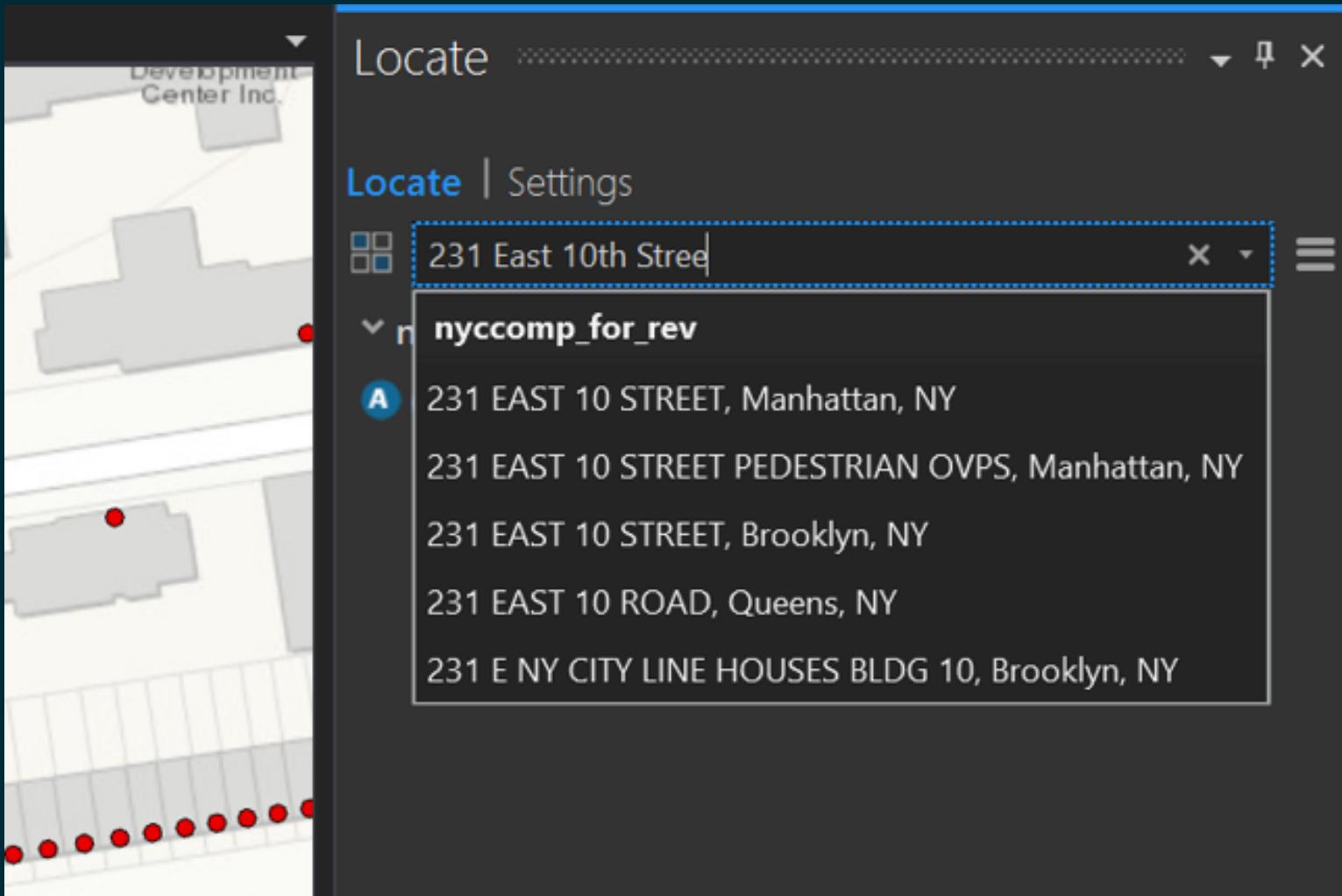
ROADMAP: WHAT [dvg] IS DOING

- Composite/cascading using Geosupport, addresses, subways, park features, etc.
- Adding a reverse geocoder
- Adding suggest
- Function AP Support
- Building local and highly available environments

ROADMAP: WHAT [dvg] IS DOING: SUGGEST

[http://dvgags.eastus.cloudapp.azure.com:8080/arcgis/
rest/services/Geocoding/locateNYCcomp/GeocodeServer](http://dvgags.eastus.cloudapp.azure.com:8080/arcgis/rest/services/Geocoding/locateNYCcomp/GeocodeServer)

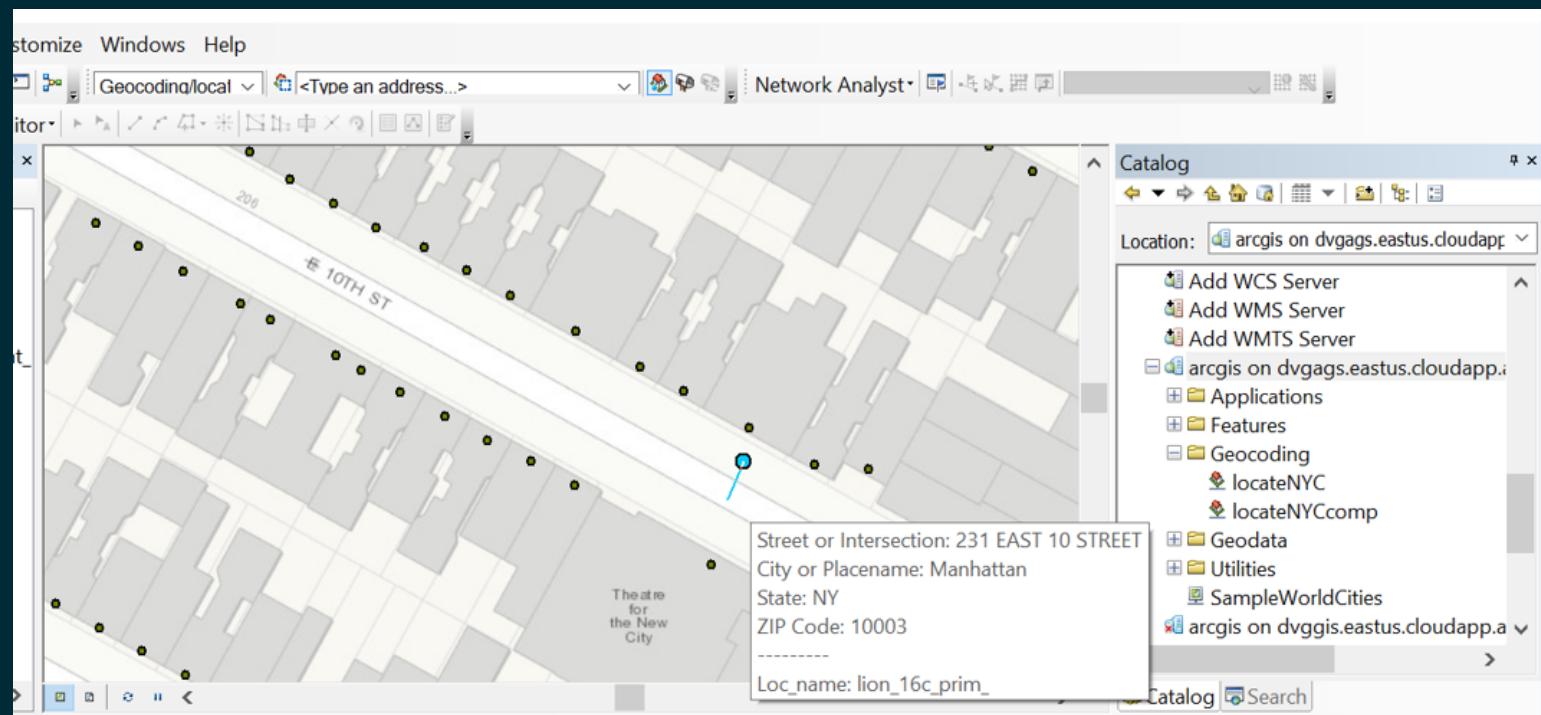
Register this endpoint with AGO, I called mine "nyccomp_for_rev"



ROADMAP: WHAT [dvg] IS DOING: REVERSE

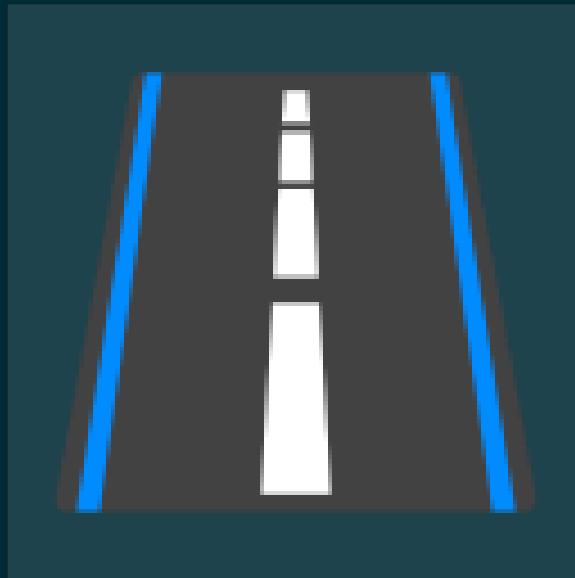
<http://dvgags.eastus.cloudapp.azure.com:8080/arcgis/rest/services/Geocoding/locateNYCcomp/GeocodeServer>

Add endpoint in ArcMap, and add the "locateNYCcomp" locator



ROADMAP

- DolIT long term support for Geosupport & Geoclient
- Customize for your own environment
- Collaborate...



COLLABORATE & EXTEND

We can use the dvg GitHub repo to collaborate using Issue Tracker.

<https://github.com/DataVisionGroup/geoclient-esri/issues>

THANK YOU!

Ed Farrell efarrell@dvginteractive.com

<https://github.com/DataVisionGroup/nyc-geosupport-esri-workshop>

