Geocoding

Tosia Shall
Types of Geocoding

Geosearch

Batch Geocoding

Reverse Geocoding
World Geocoding Online

- Esri World Geocoding Service
  - Easily convert addresses to locations and back

World Geocoding On-Premises

- World Geocoder for ArcGIS
  - Securely map your global addresses behind your firewall

Products

Country Geocoding On-Premises

- StreetMap Premium for ArcGIS
  - High-Quality Street Data for Display, Routing, and Geocoding

Build your own with ArcGIS
World Geocoding Service

- Address level geocoding for more than 130 countries
- Place-level coverage for other landmarks and cities
- Handles addresses in local alphabets languages, Romanized characters, transliterations, and local formats.
- We source authoritative worldwide data

World Geocoding Service

- Cascading functionality automatically matches addresses at the best level – if it doesn’t find a rooftop point it moves down to interpolating along a street segment, the down to a zip code, and so on.
World Geocoding Service

- Ready-to-use world geocoding service
- Covers:
  - the planet at Admin/Populated places level
  - > 130 countries supported at address precision
  - > 50 countries down to address point

Numbers to remember for batch geocoding:

- 40 credits for every 1,000 geocodes
- 2.4 credits per 10 MB of stored feature services/month
- 1.2 credits per 1 GB of tile and data storage (map tiles, feature attachments, scene layer packages, documents)
World Geocoding On Premises

- For organizations that need global coverage, but can’t deploy in the cloud
- On premises solution ensures privacy of your data
- Includes ArcGIS Enterprise software, data locators, and Esri Professional Services
Country Geocoding on Premises

- StreetMap Premium for ArcGIS

Coverage Areas
- Continent (North America, Latin America, Europe, Middle East/Africa, Asia Pacific, Japan)
- Country
- State/Province

Usage Options:
- Map Display with Geocoding
- Map Display with Geocoding and Routing

Most reference data provided by

HERE in numbers

200
Countries mapped

8,000+
Employees in 56 countries focused on delivering the world’s best map and location technologies

30+
Years of experience transforming location technology

700,000
3D data points per second per car

400
HERE cars collecting data for our maps

28 TB
Map data collected per day

100M
Vehicles and counting

Image

Image

Image
Building a The World’s Best Map is a big data problem, but focusing on a single data stream would be missing the point: **Map Leadership requires Big Data Orchestration**

- **Most accurate**
- **Richest**
- **Freshest**

- 5 Billion records per month by thousands of expert communities and developers
- > 50 Local GIS expert teams
- > 400.000 vehicles
- 105B Rich sensor data from
- 400+ HERE collection vehicles
- > 108 Closed loop with leading companies across all industries
- Exclusive use of proprietary, vehicle sensor data
- Unique access to expert communities
- Advanced engineering capabilities rapidly identifying real world changes & publishing near real-time

Unparalleled customer intimacy
Unmatched network of strategic partnerships
The world’s largest, highly trained cartography & sourcing teams
Leverage the industry’s broadest coverage and depth of detail with: HERE Map Data

- **Coverage**
  - Broadest automotive grade coverage

- **Accuracy**
  - Highest quality map and consistent accuracy in both urban & rural areas

- **Richness**
  - Richest suite of features and premium content

- **Freshness**
  - 100% of validated updates released weekly
The world’s most comprehensive source of traffic data

**HERE Real Time Traffic**
- The industry’s first real-time traffic information enhanced with rich sensor data from connected vehicles, to deliver up-to-the-minute traffic conditions and incidents.

**HERE Traffic Patterns**
- Deliver comprehensive average traffic speed data by using billions of multi-year vehicle speed observations on every type of road.

**HERE Traffic Analytics**
- Determine how changes in the road network impact the vehicle speed at a system-wide scale and plan routing accordingly.

**HERE Predictive Traffic**
- Predict traffic up to 12 hours in advance with more than one trillion GPS data points, historical traffic flow data and other factors like seasonal conditions and holidays.
Build Your Own Locator

- Use your own Reference Data
- Use locally or as a service

Locators should be stored in a file folder so you take advantage of new features that are not supported for locators stored in geodatabases, such as performance improvements, multithreading capabilities, and suggestions support. ArcGIS 10.4 is the last release to support storing locators in geodatabases.
What’s New in Geocoding

- [Link](https://blogs.esri.com/esri/arcgis/2017/06/28/big-enhancements-geocoding/)
- [Link](https://blogs.esri.com/esri/arcgis/2017/10/02/customize-your-geocoding-experience-with-locator-views/)

Enhanced Address and Place Matching
The Geocoding Algorithm is better at locating addresses and places

Algorithm is better at resolving poor quality addresses

Re: 30853 Loma Linda Rd (NA), Temecula, CA, 92592
10408 S 198th West Ave, Bill Jones, Sapulpa, OK

Suggestions match only valid house numbers as you type

Batch Geocode POIs

- Esri New York St
- Esri Vienna VA
- Prospect Park Redlands
- Marina Park San Diego
Multiple Address Input Fields
House Number, Street Name, Unit and Name can be entered in separate input fields.
Enhanced World Geocoding Coverage
25 additional countries where street addresses can be located

Plus:
Australia (G-NAF)
New Zealand (LINZ)
China (English)

Now 135 Countries with Street Addresses
Enhanced Intersection Matching
Intersection geocoding finds more types of intersections

- Roads that are close to each other
- Roads that pass over but don’t intersect
- Roads entering roundabouts
Enhanced Reverse Geocoding
Results now include POI, Postal, Admin Areas as well as Countries – where the data is available

<table>
<thead>
<tr>
<th>Feature Type</th>
<th>Search Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Intersection</td>
<td>10 meters</td>
</tr>
<tr>
<td>Street Address (near)</td>
<td>7 meters</td>
</tr>
<tr>
<td>POI centroid</td>
<td>25 meters</td>
</tr>
<tr>
<td>Point Address</td>
<td>25 meters</td>
</tr>
<tr>
<td>Street Address (distant)</td>
<td>100 meters</td>
</tr>
<tr>
<td>POI area</td>
<td>within boundary</td>
</tr>
<tr>
<td>Postal or Locality area</td>
<td>within boundary</td>
</tr>
</tbody>
</table>

Developer API - more control over the features that are returned with the new featureTypes parameter
Enhanced Coordinate Geocoding
MGRS, USNG and DMS Geosearch is built in….

GeoSearch coordinates
MGRS: 07VEH3258214688

DMS: 147° 52' 23" E, 14° 21' 19" N
Locator Views

- Configure a view of the Esri World Geocoding service that only returns *specific types of locations* or *only within a specific country or area*.
- Views can be configured and used by any apps that support GeoSearch, such as Map Viewer, Configurable apps, ArcGIS Explorer, etc.
- Views can be used for Batch Geocoding
- Limiting the search results in more accurate returns

Search only US Airports  
Search world-wide Postal Codes  
Search US National Parks
Locator View Demo
What’s New in Geocoding – On Premises
Batch Geocoding Analysis Tool for On-Premises

- A new Map Viewer Analysis tool for geocoding large tables located on your Portal
  - Recommended way to geocode large tables quickly
  - Returns all output fields from the geocoding service

- Works using geocoding services that are federated with your portal
  - Including Esri’s’ World Geocoding Service and Locator Services hosted by your organization

- Allows your administrator to optimize geocoding
- Administrators can configure the system to deliver performance and manage load
Geocode Locations from Table

1. Choose the Table from Portal
2. Choose the Locator
3. Select Single or Multi Line Fields
4. Review and adjust the input fields
5. Set the Output format (XLS, CSV or feature service)
6. Set the Output name and location
Questions?
Print Your Certificate of Attendance
Print stations located in the 140 Concourse

**Tuesday**
12:30 pm - 6:30 pm  
GIS Solutions Expo  
Hall B

5:00 pm - 6:30 pm  
GIS Solutions Expo Social  
Hall B

**Wednesday**
10:30 am - 5:15 pm  
GIS Solutions Expo  
Hall B

6:30 pm - 9:00 pm  
Networking Reception  
Smithsonian National Portrait Gallery
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Select the session you attended

Scroll down to find the feedback section

Complete answers and select “Submit”