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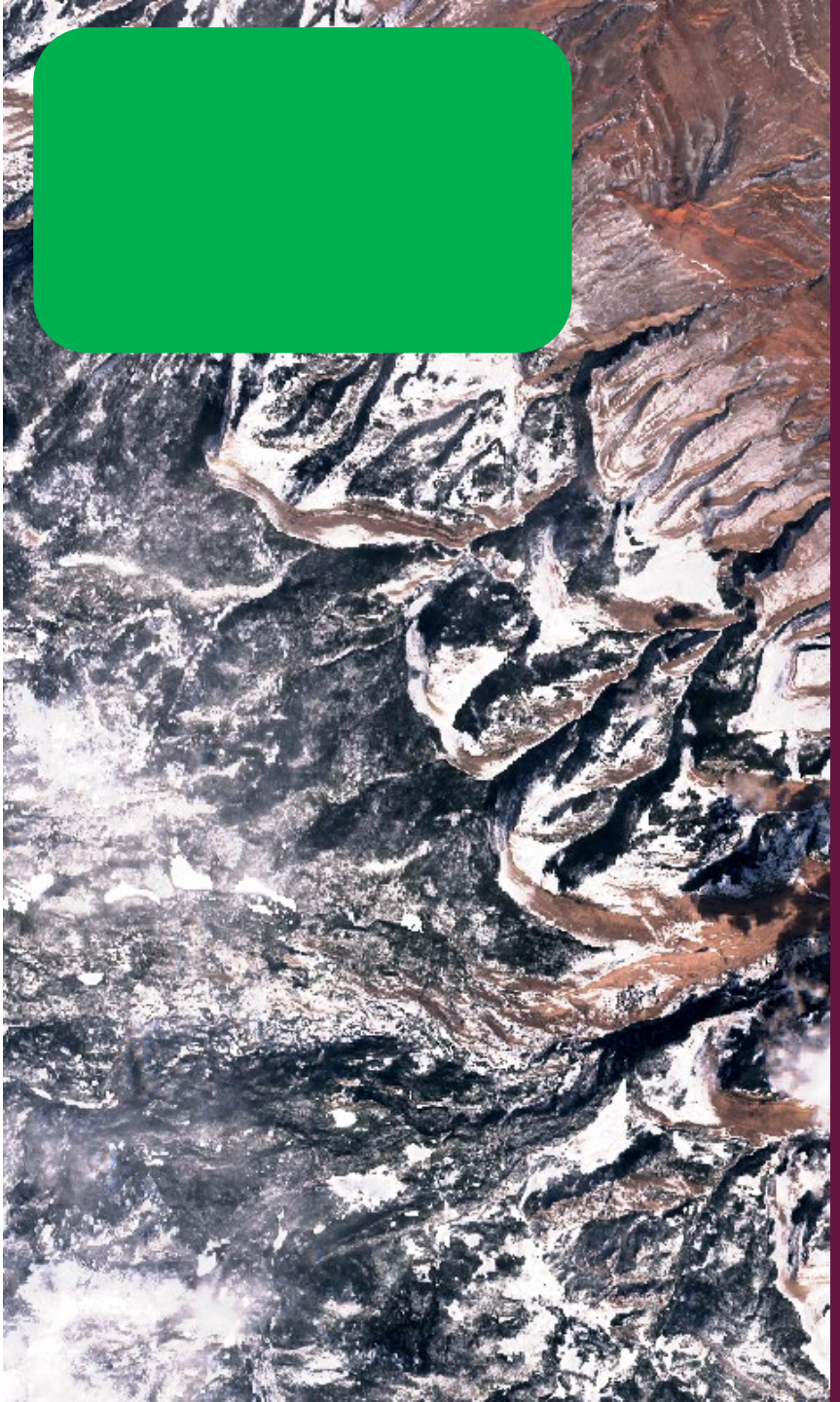
A Sealaska Company

Salesforce GIS Integration with Geoprocessing workflows



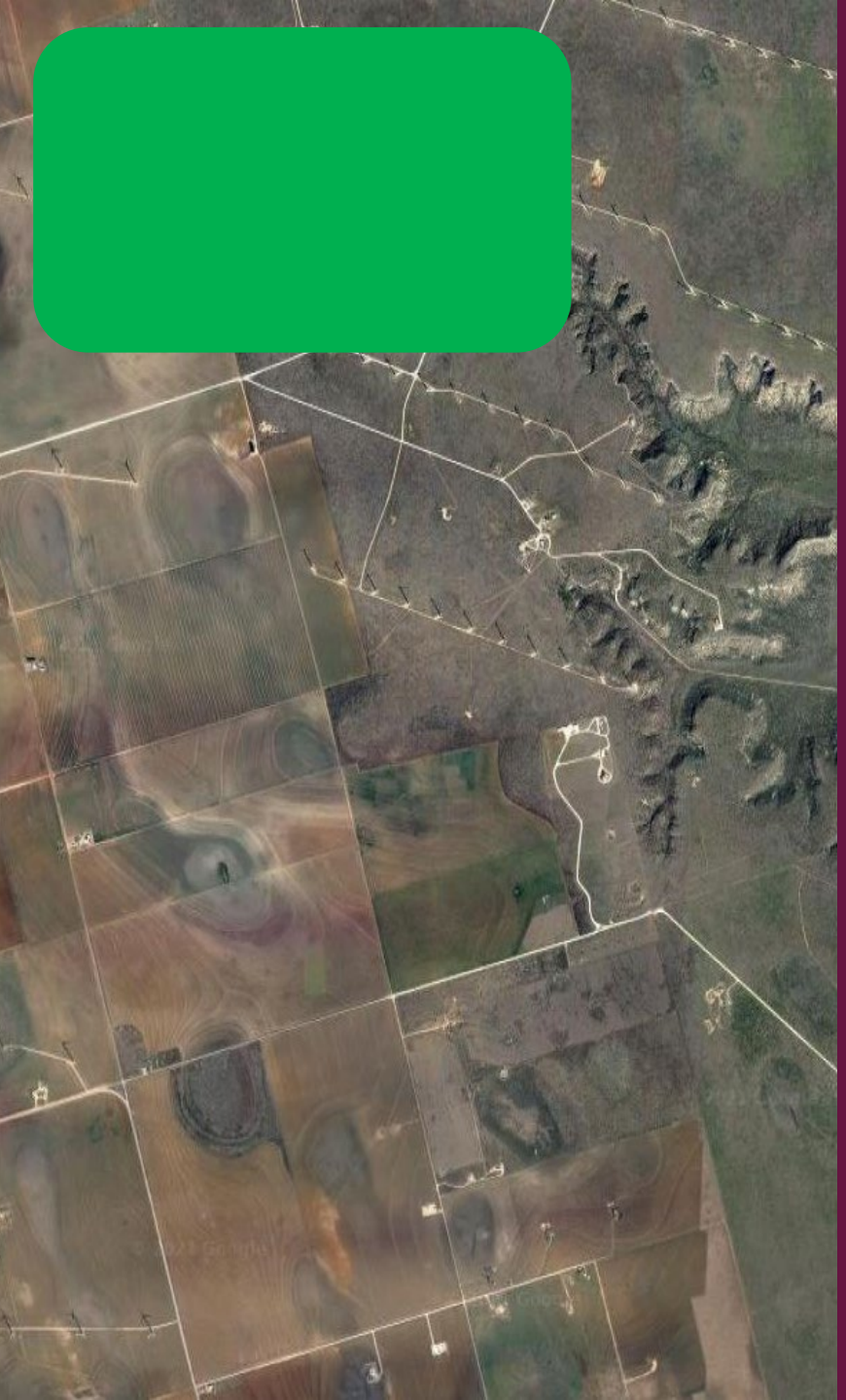
Lee Pepper

Map nerd

Solutions Architect @ MBS

Not only Salesforce but any context integration

Any system that can provide a specific ID for context can be integrated by context ID in ArcGIS Online or Enterprise services giving you a decoupled environment to utilize all the ESRI and opensource tools you may need



External user input

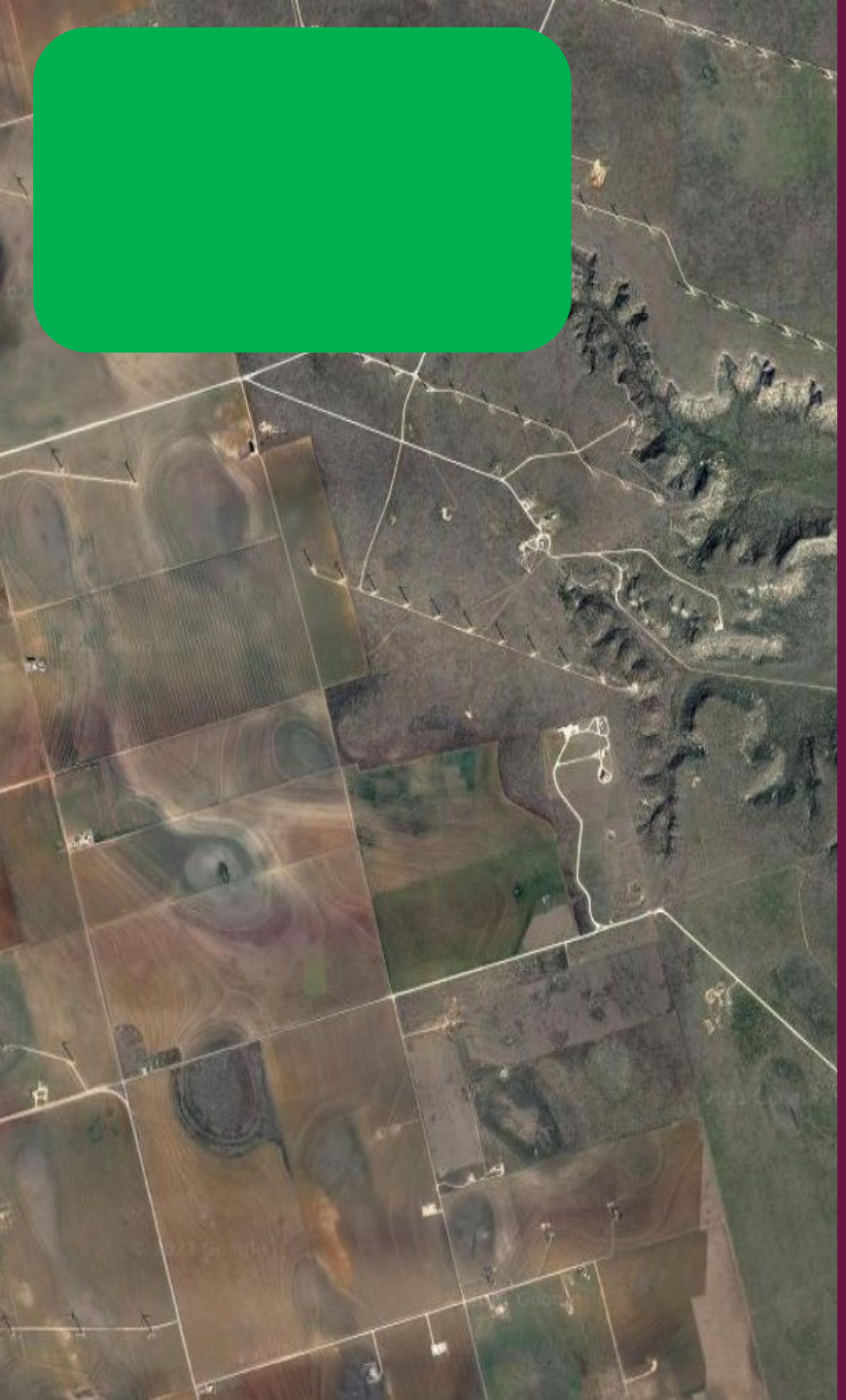
Many systems need users to create geospatial data.

How can we help a user with no GIS background create accurate data?

Use point data from handheld GPS units or official documents

Geocoders for the win!!

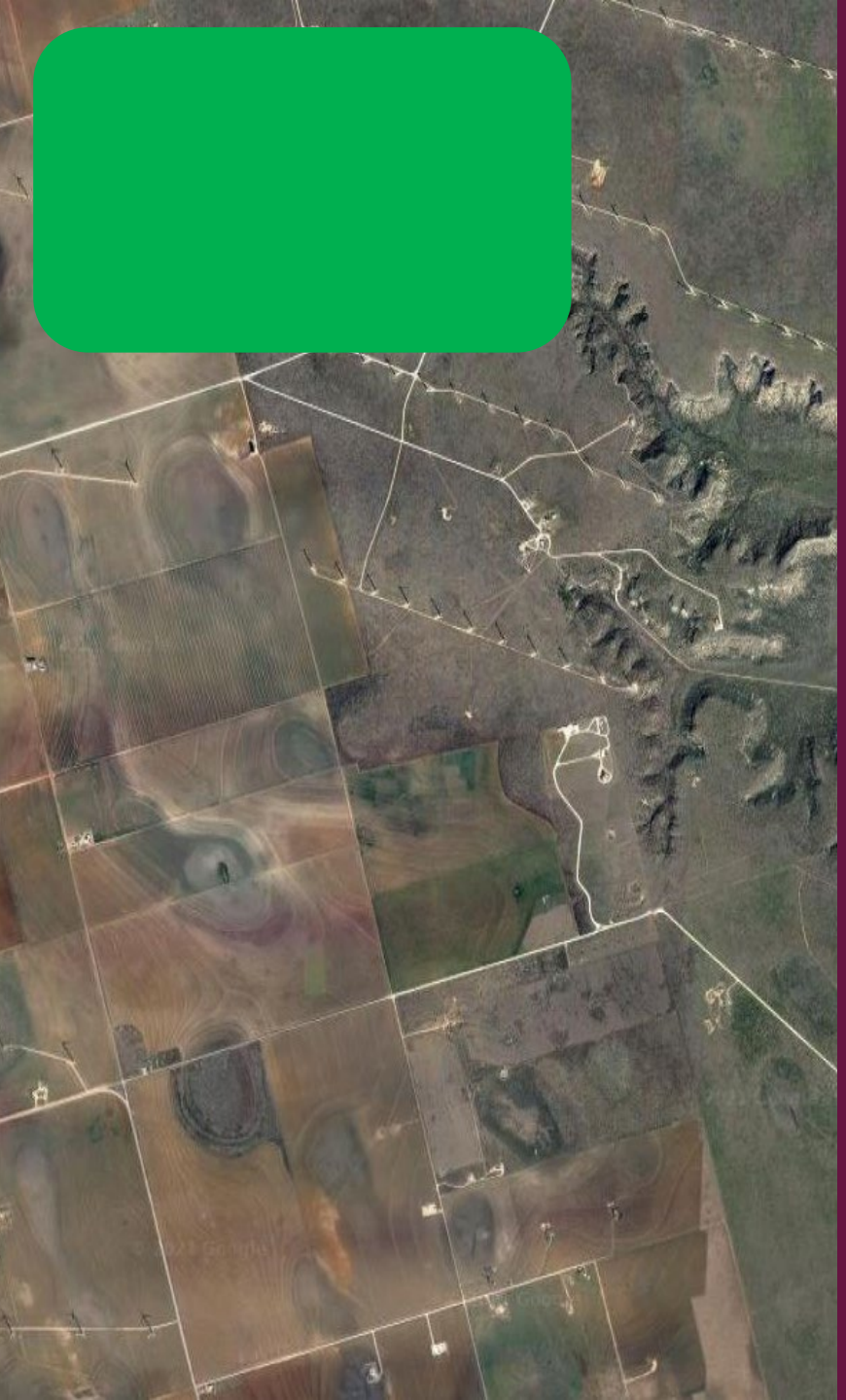
Guided text input is the way to go!



Geocoder: Address

We have all seen this one Address to point..

I won't go further but remind you to use the suggestions to make clean data and only let them override if their address is not found.

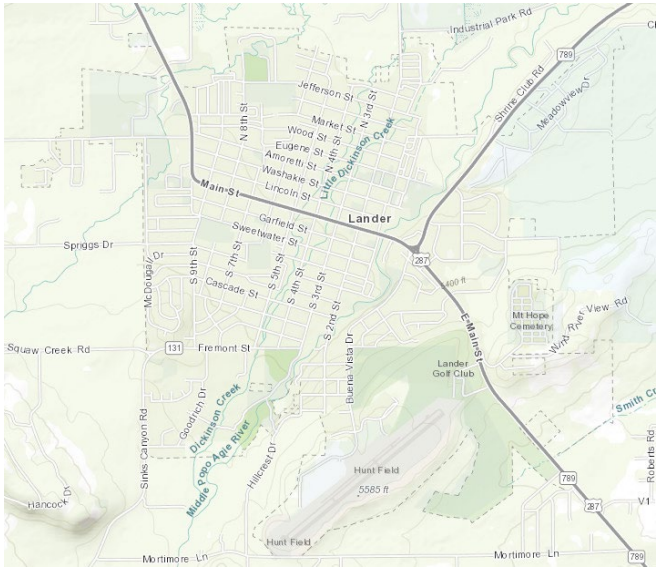


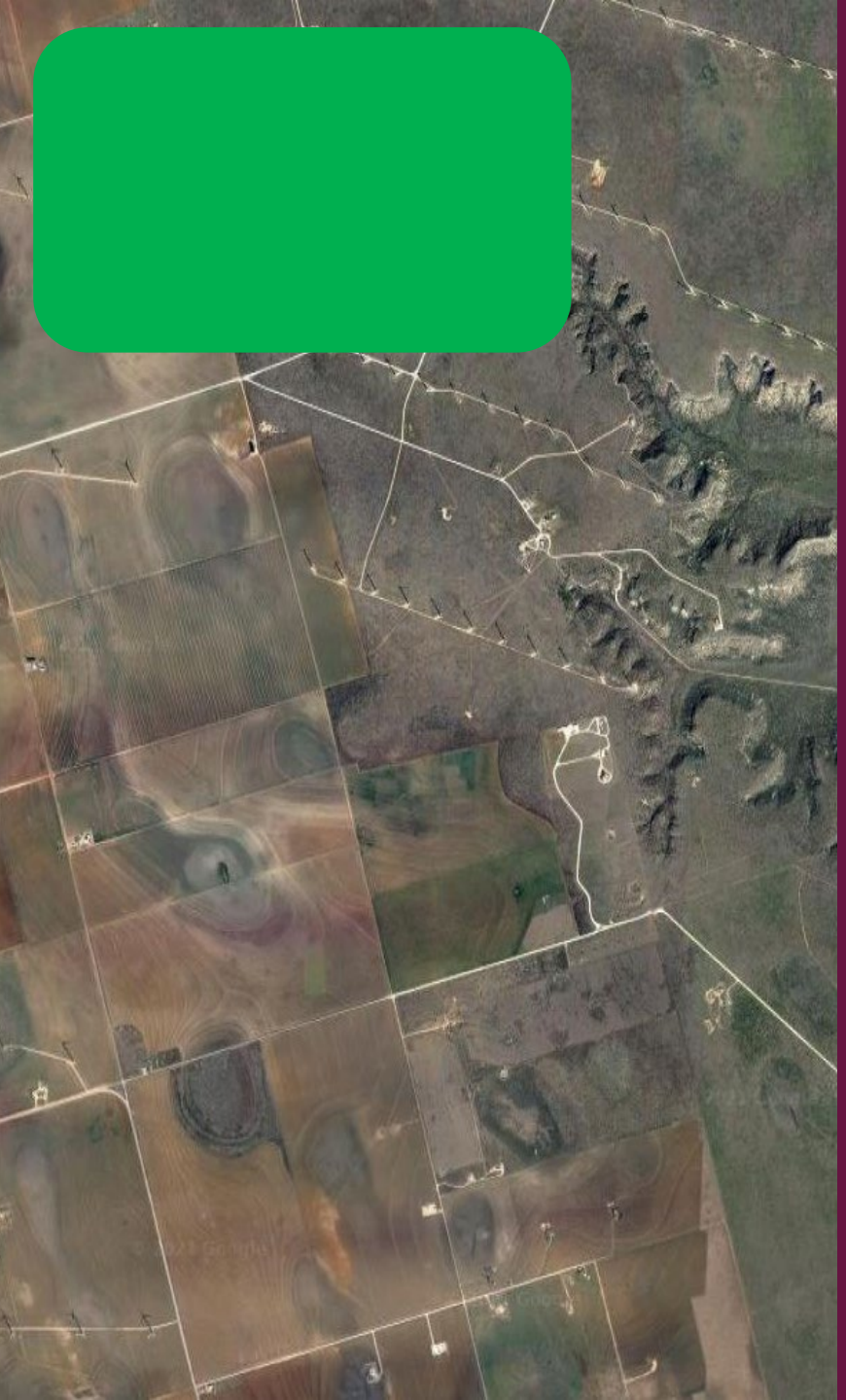
Geocoder: Direct lookup

Simple one here is to add a County to a record from name or code.

Another simple one is City or State

There are interesting things we can do with these polygons.

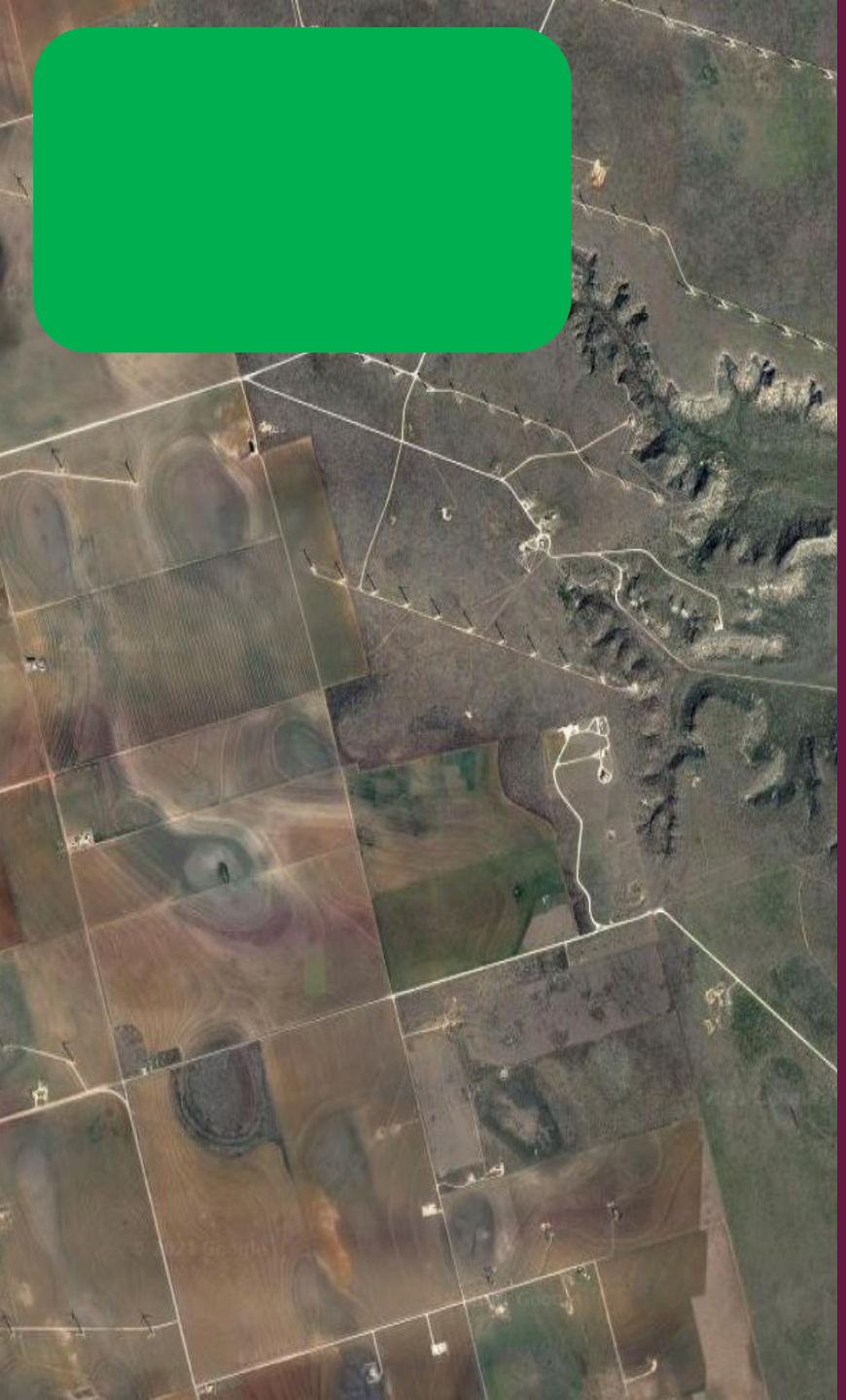




Geocoder: Text Processor

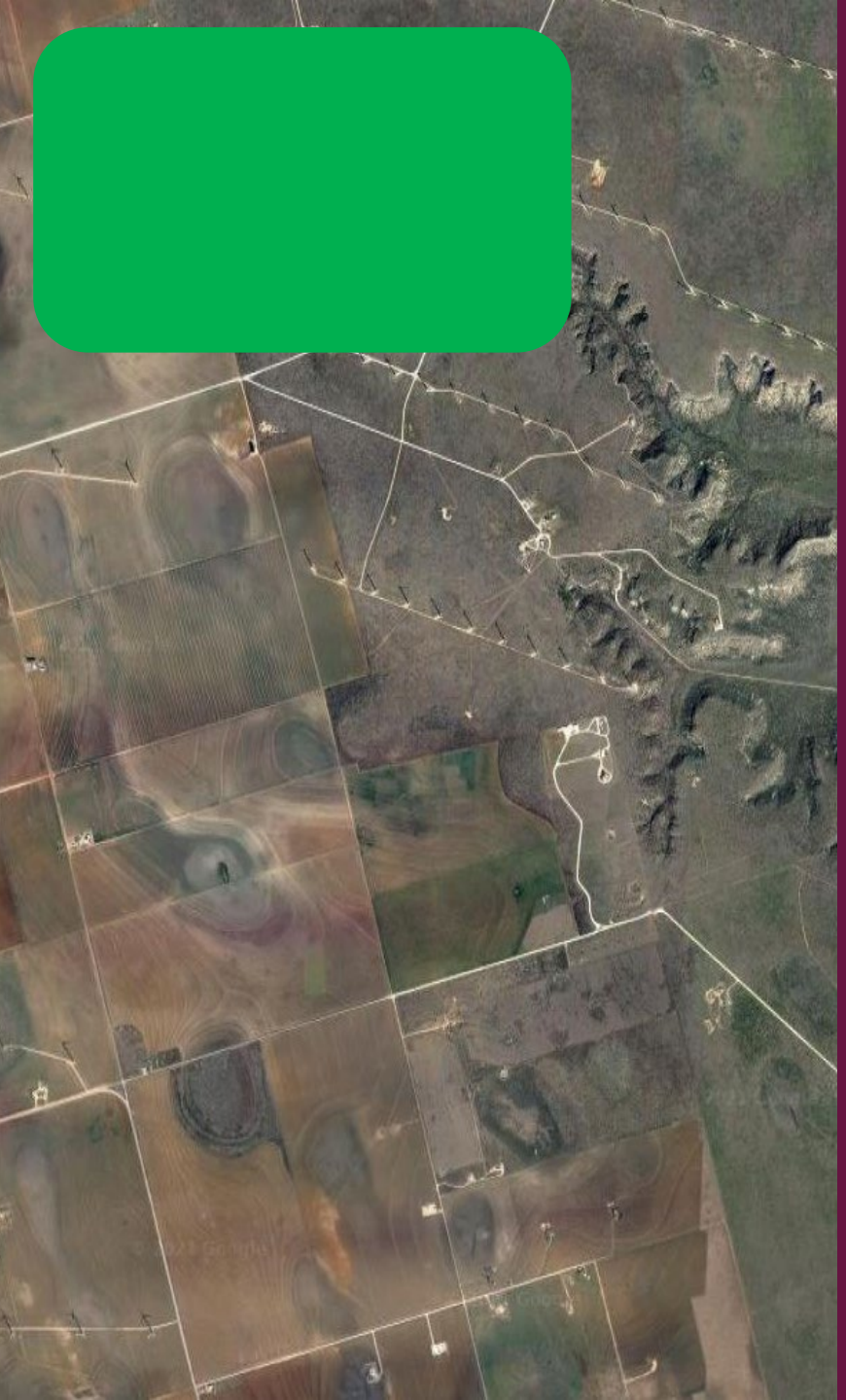
Another option is to roll your own!!

We built a Legal Description processor that can handle some of the complex data that is in the Public Land Survey System



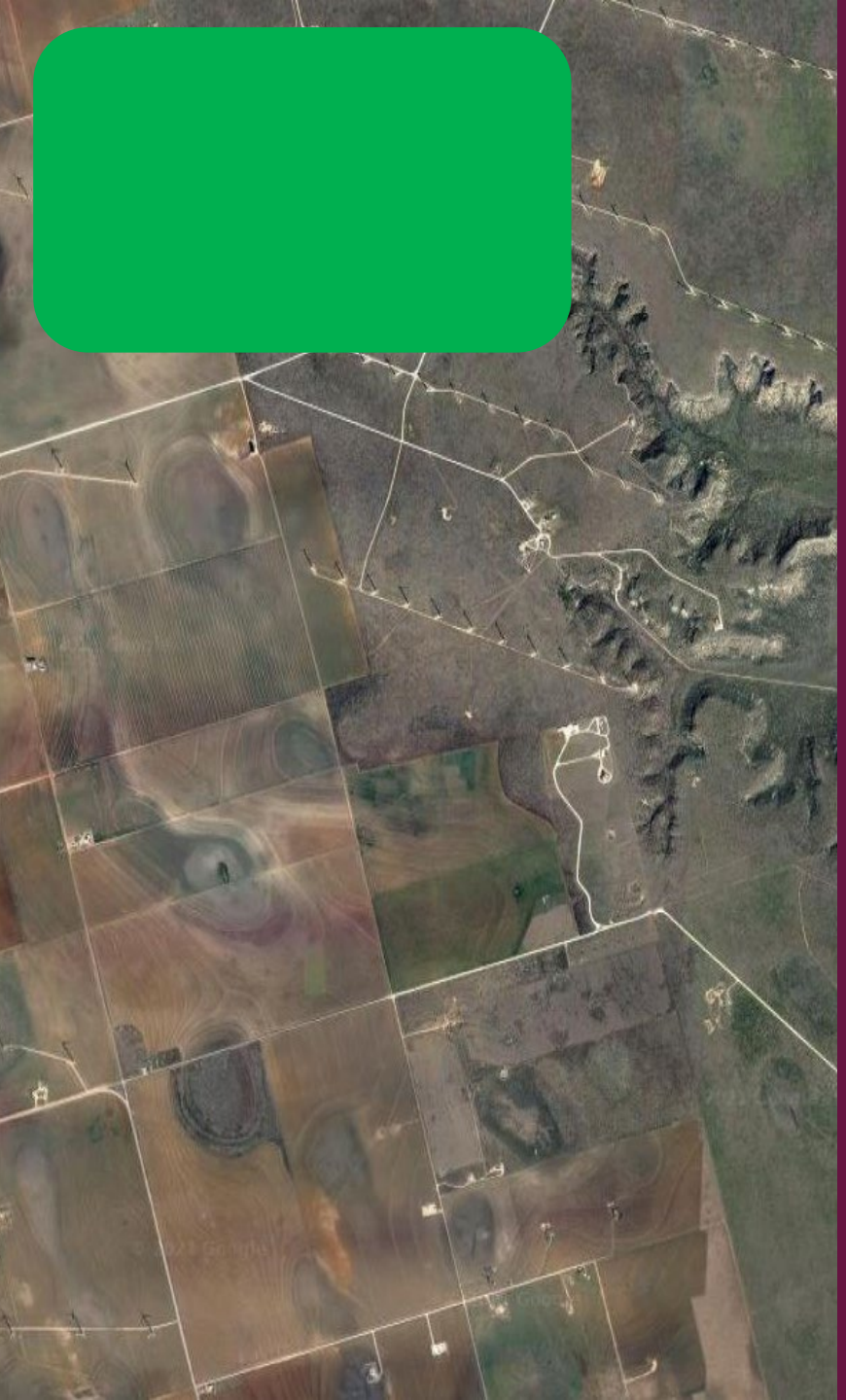
Data migration

- Geocoders are also heavily used in data migration to geospatially enable data.
- Data migration is a living thing as well.
- Geocoders can help keep data from becoming stale.



Byron Clayton

MLRS Product Team @ Bureau of Land Management



The Mineral and Land Records System (MLRS) modernizes the processes of tracking the nation's land & mineral resource decisions, official records, and the cases involving these resources. MLRS provides many key features and benefits to BLM employees that allow for better workload management such as:

GEOSPATIAL CAPABILITIES

MLRS provides a modern, geospatially enabled online platform delivering **intuitive mapping features** for mineral and land records transactions, tracking, and mapping

DATA VALIDATION

MLRS checks the validity of customer data in real-time, ensuring information is entered correctly, **freeing BLM employees from correcting most data entry errors**

STREAMLINED ADJUDICATION

Application decisions can be made directly in MLRS. Once a decision is made, **notifications will automatically be sent to the customer**

WORKLOAD MANAGEMENT

MLRS allows case managers to **monitor and reassign case work** based on workloads and assignments

CUSTOMER SELF-SERVICE

Customers can perform a significant portion of research activities and application processing, **taking the burden off contact reps in the public room**

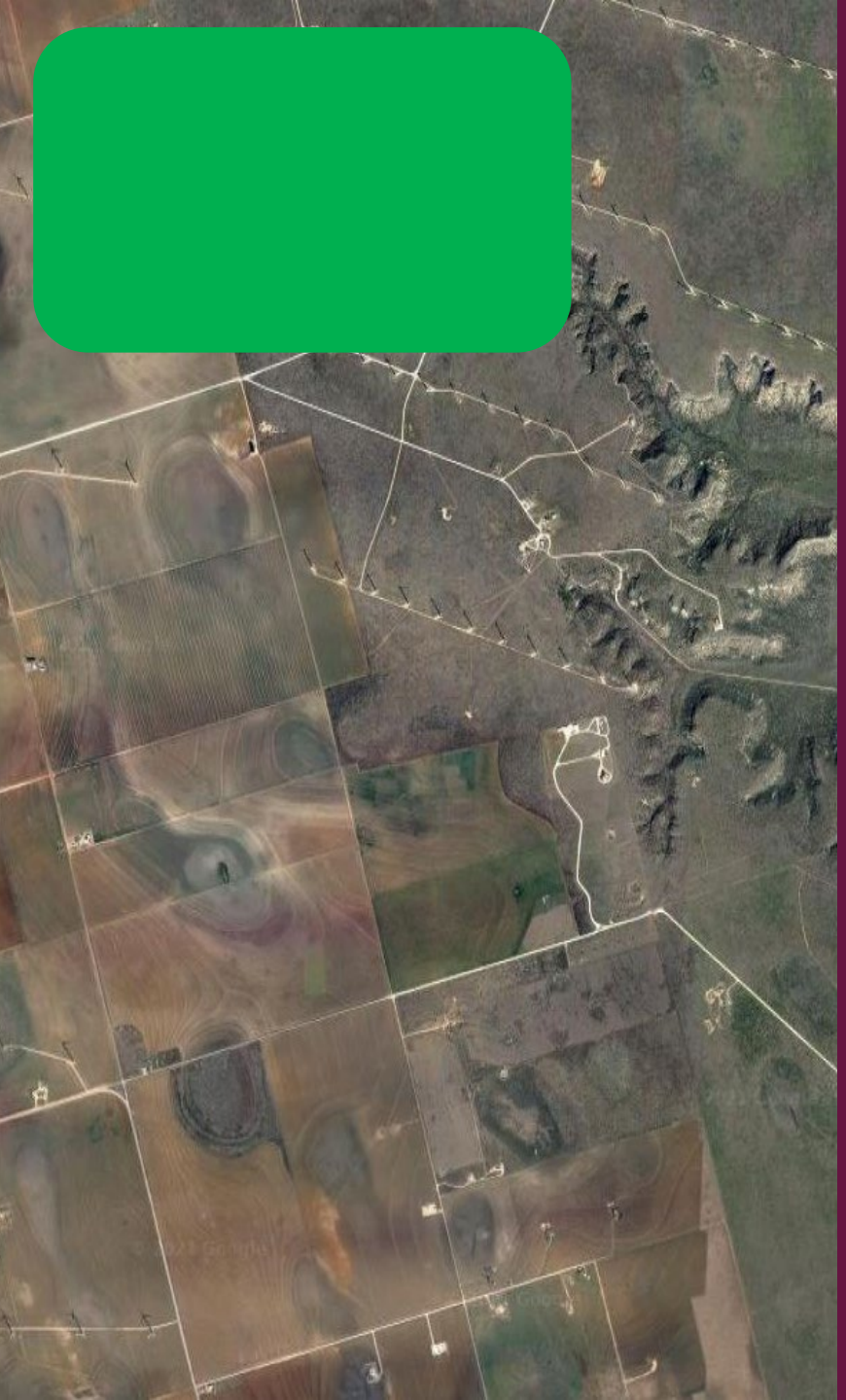
Brendan Cannon

Manager @ Accenture

Demonstration

Mineral & Land Records System

1) File a mining claim from MLRS Salesforce Community using ESRI integration
2) Adjudicate the claim from MLRS Salesforce Platform using GIS information



Salesforce to GIS Flow

Public User inputs a LLD

Salesforce sends LLD to a Microservice running a bunch of containers that can generate a polygon from LLD

Calculate acres

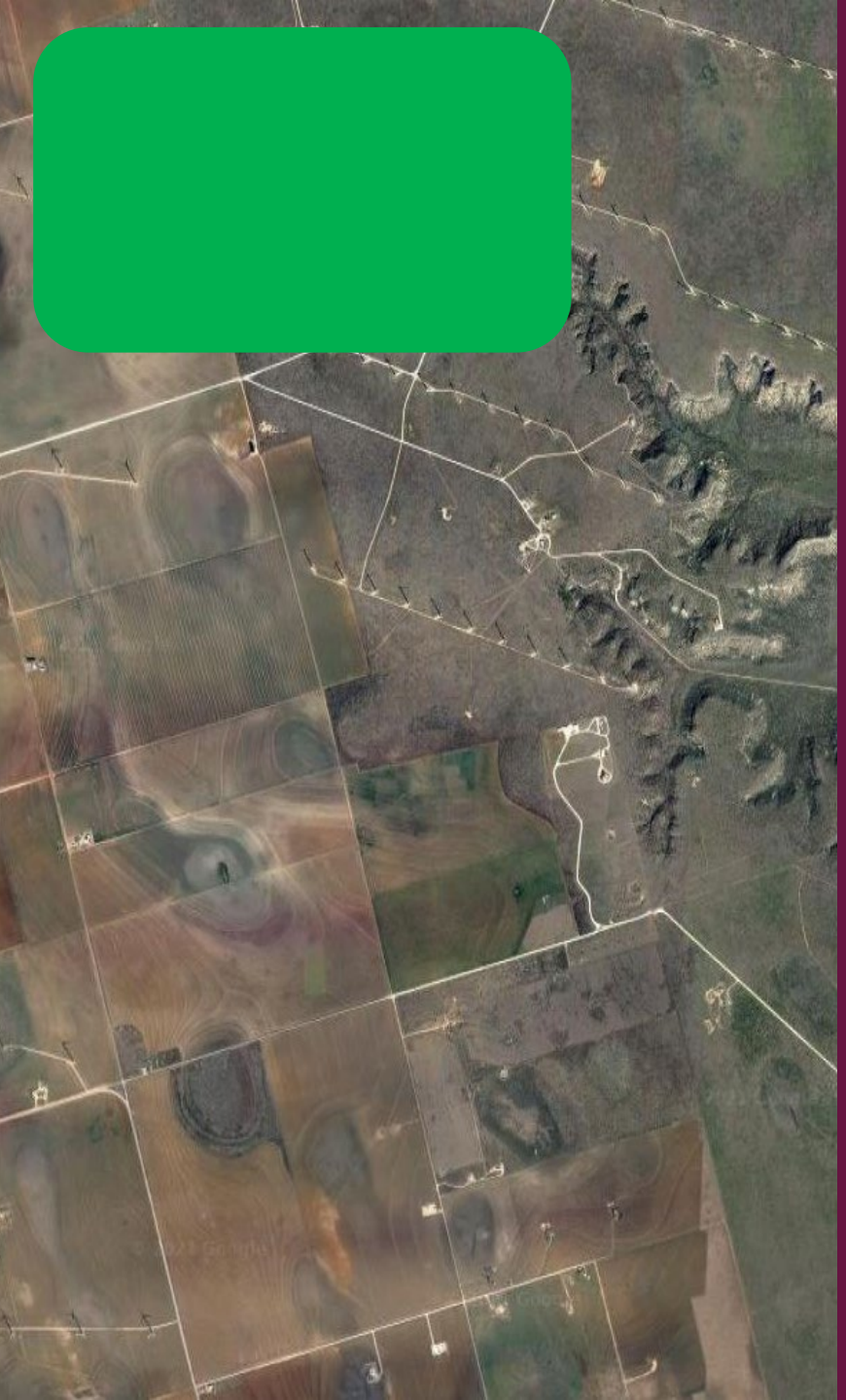
Calculate Acres per county

Acres per state

Acres per SMA

Intersected PLSS Features

Then commit record and send derived information to Salesforce in a timely manner.



What are the pieces?

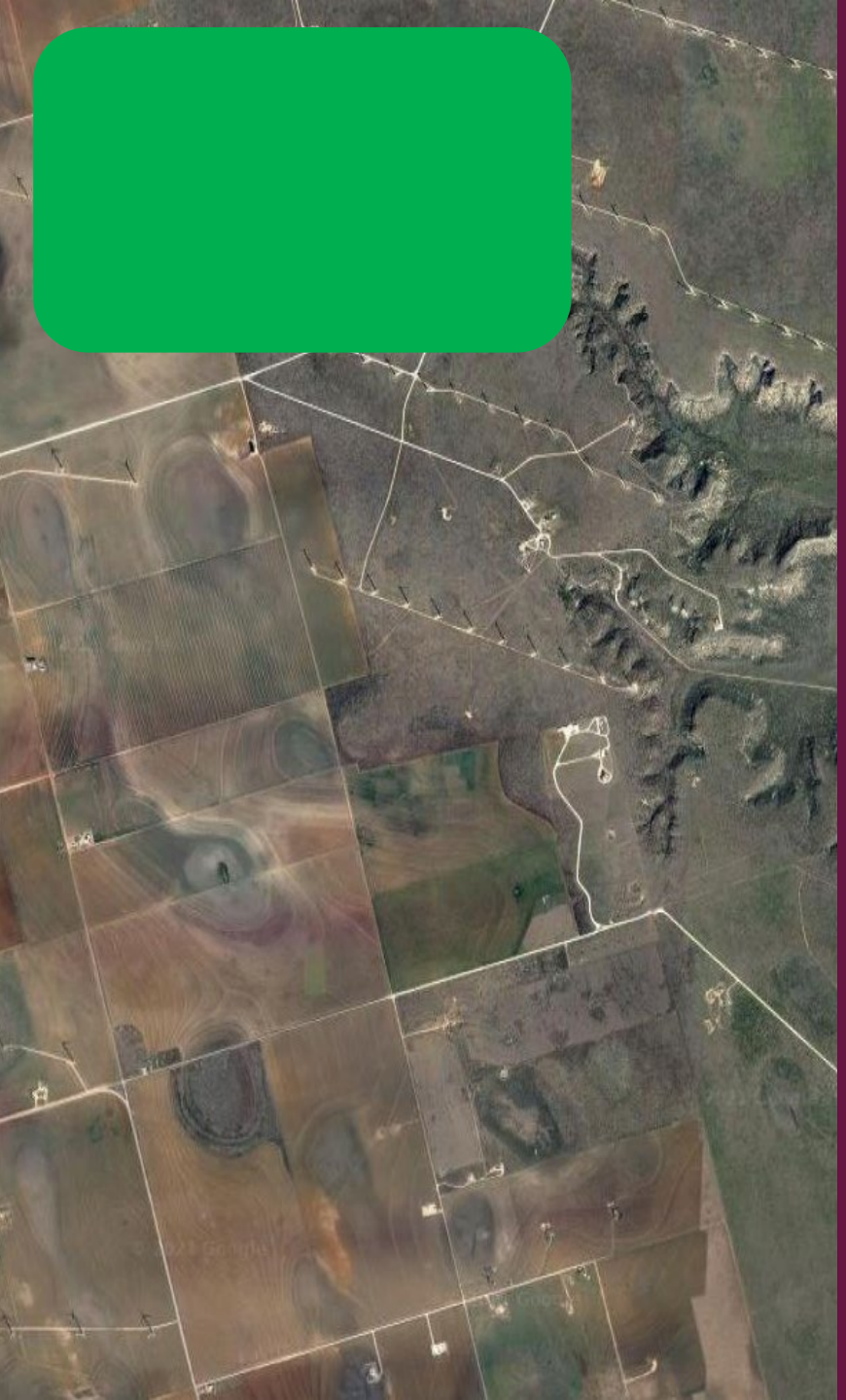
Salesforce

ESRI JS API

Containers

ArcGIS Enterprise

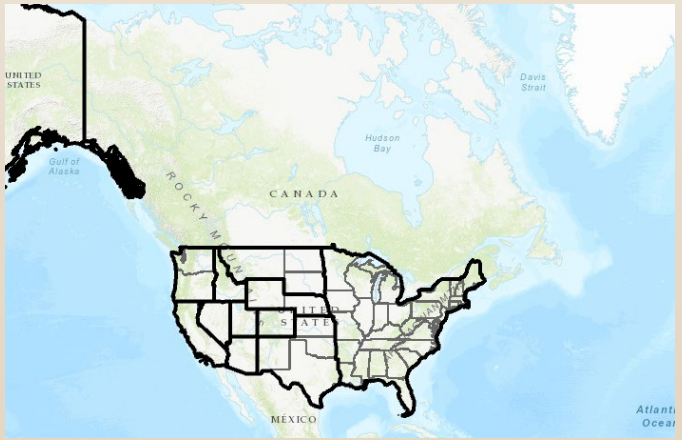
Let's walk though the internals

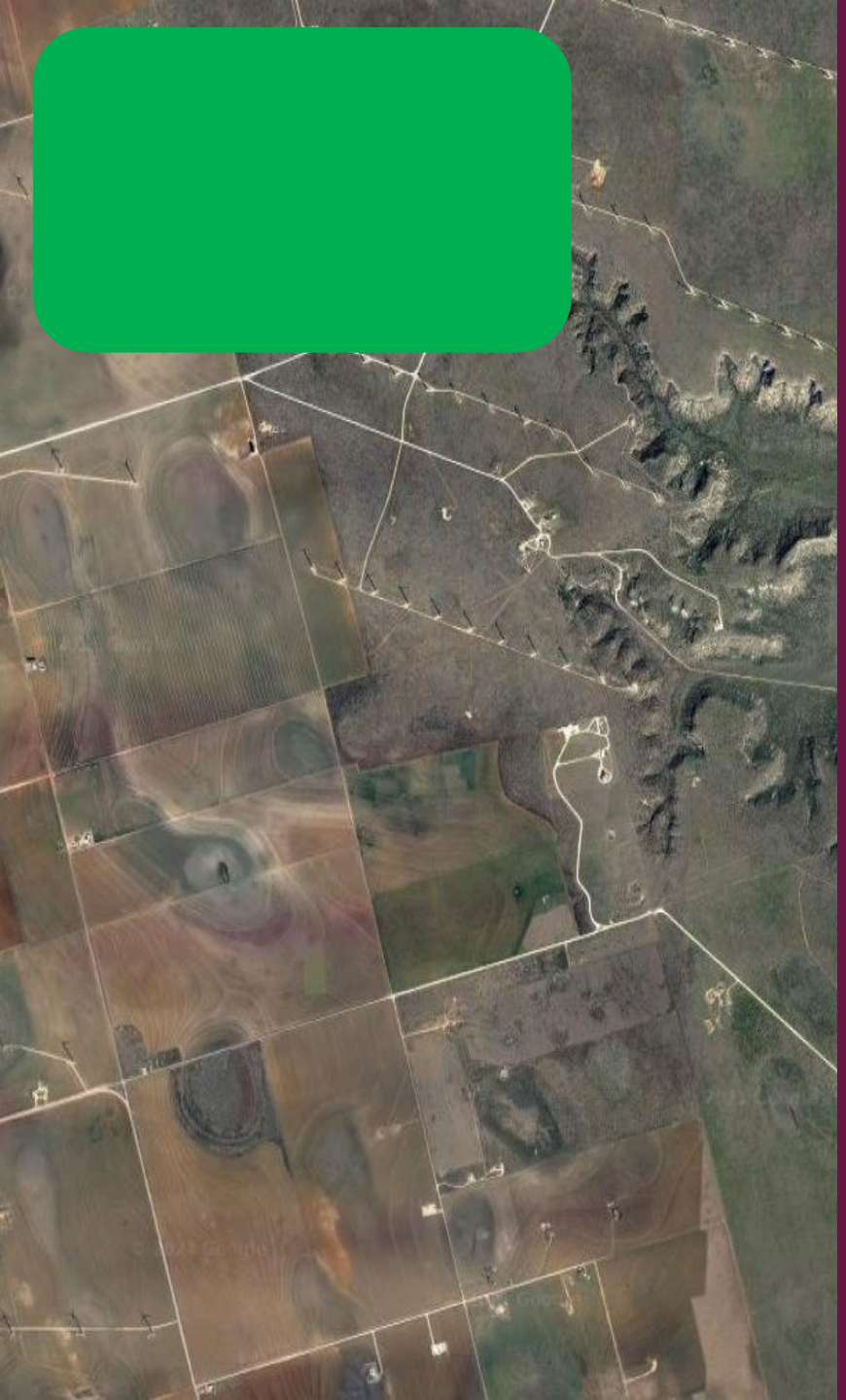


Salesforce and Web map

- Limitations of embedding ESRI JS API into Lightning
- Leaflet….
- Iframe for the win!

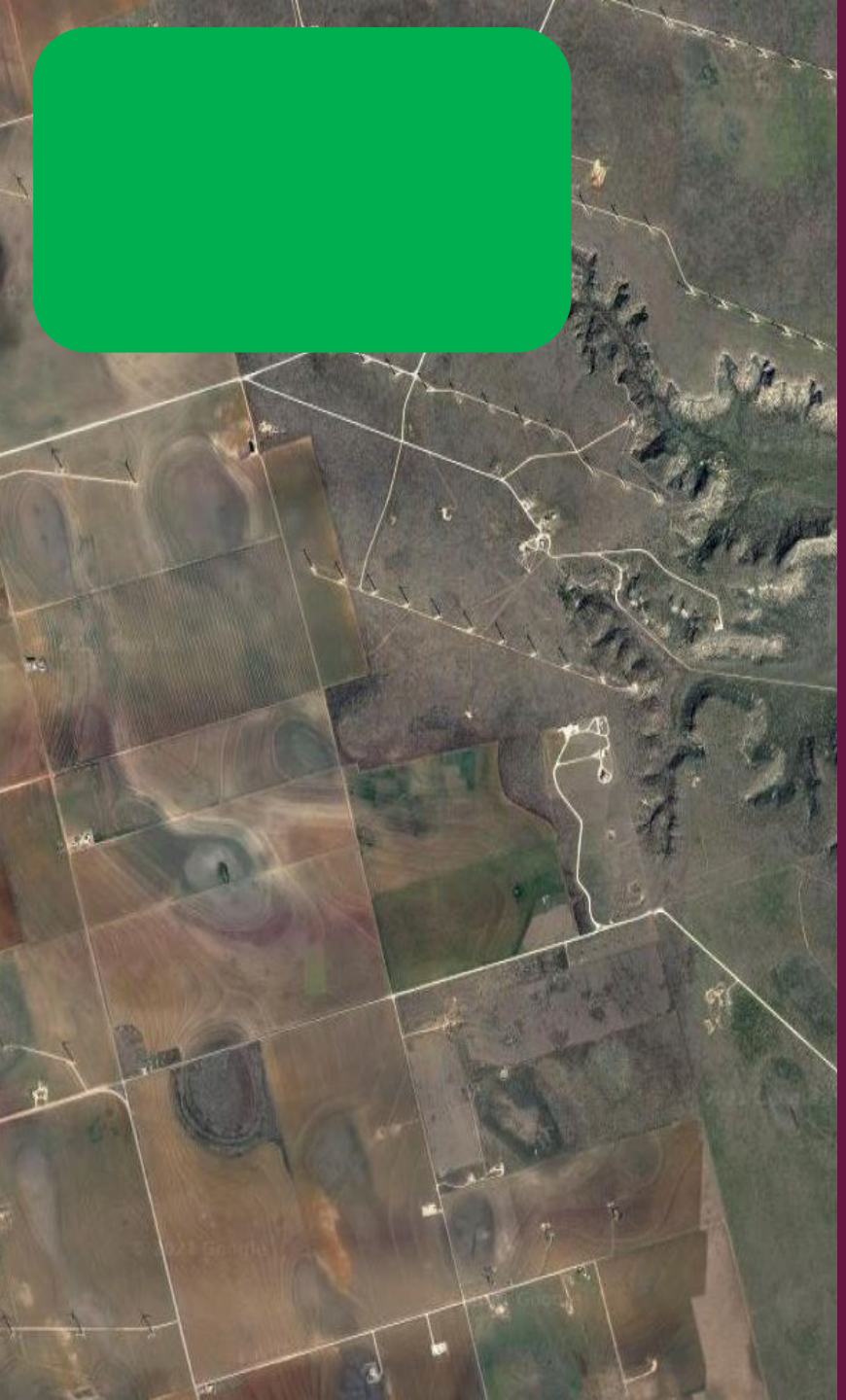
Salesforce





ESRI JS API and React

- Embed a React app from a container to host the Web Map within the application <iframe/>
- Remember postMessage
- Send massages between Salesforce JavaScript and receive commands on the embedded map React app
- DO STUFF!!!



Containers

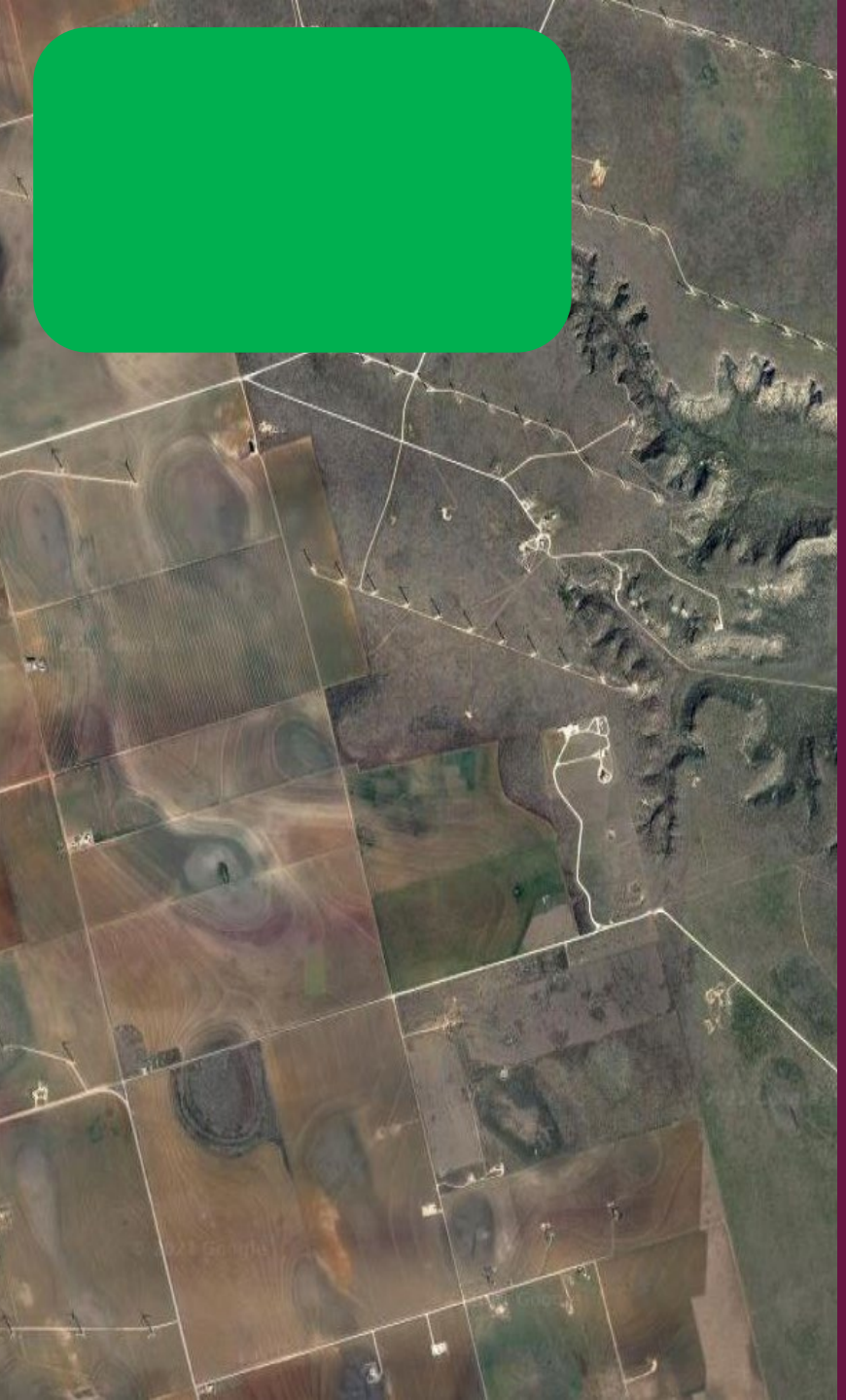
Why containers… SCALE!!

Let's look at this process flow.

1. Send legal land description and get shape
2. Calculate intersected acres against 4 feature services
3. Store 1 feature and its dependent records for internal users to process

+- 2 seconds per op depending on the intersected counts.

Get ready for the next user.

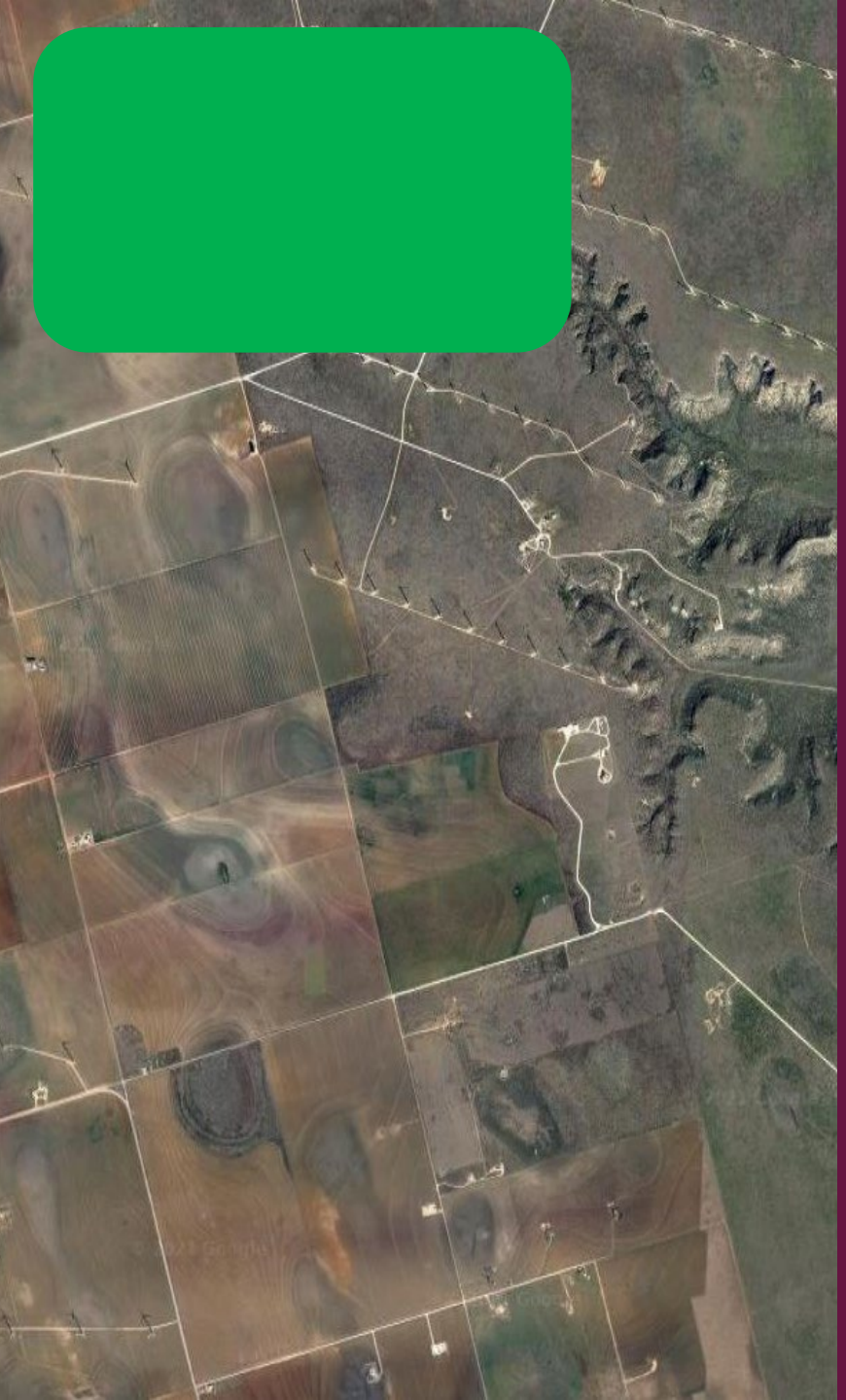


Containers …

To handle the load that was prescribed we need to run scaled containers.

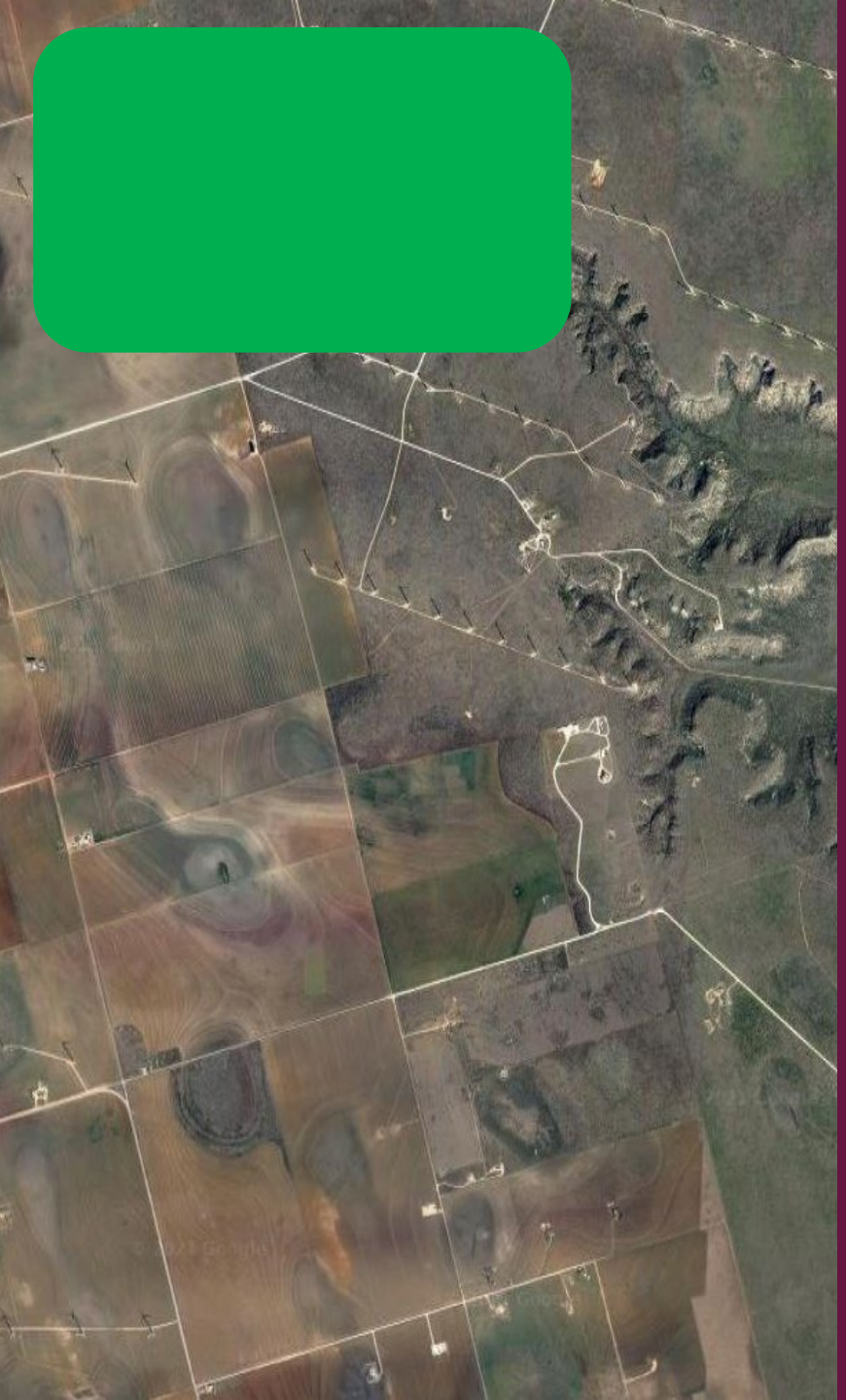
Some instances require 8X scale to keep up with the load of the geoprocessing

This allows enough workers to handle the load and have outage resistance.



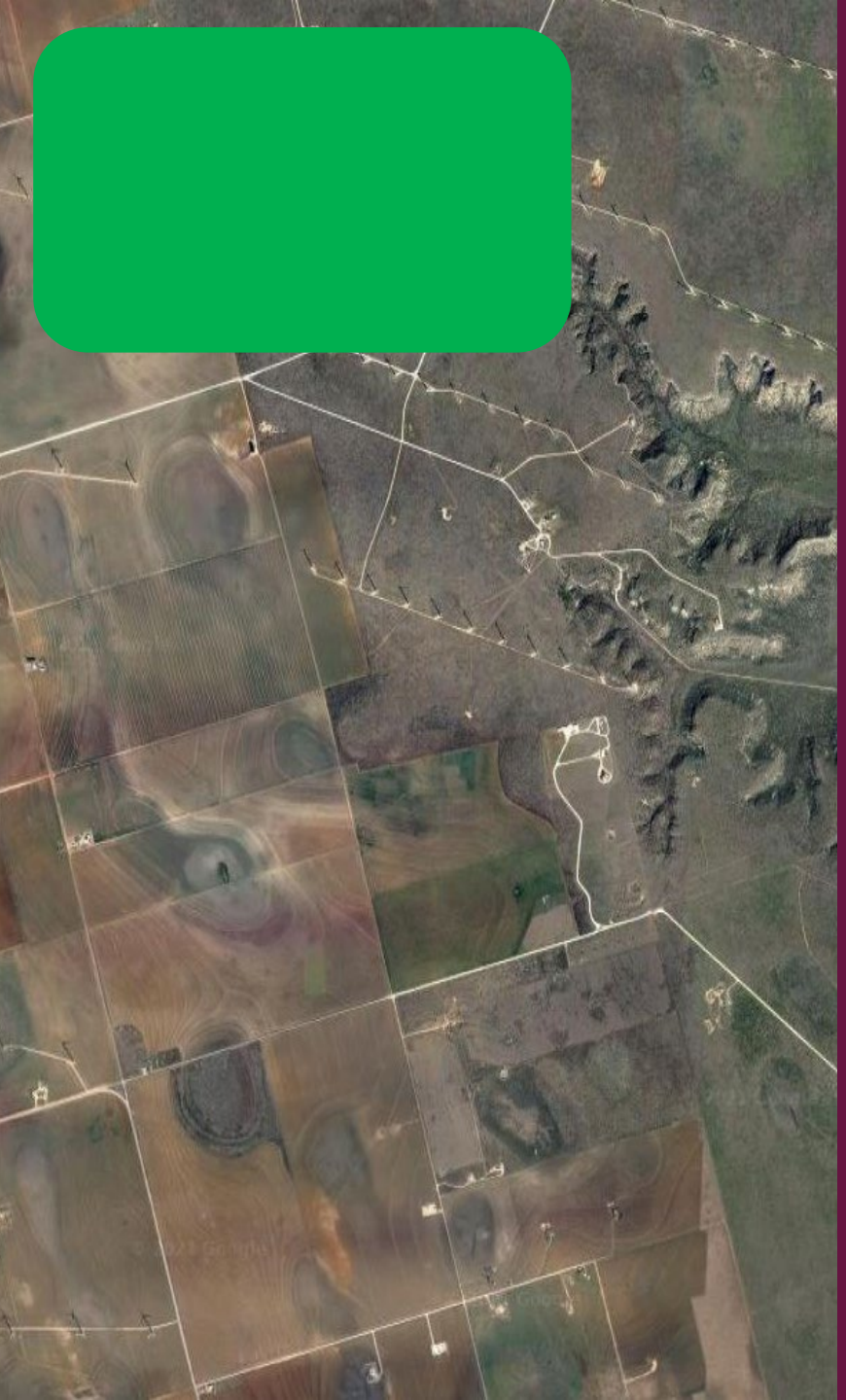
Pitfalls of containers

- ArcObjects SDK….. Wont run on a simple container..
- Workarounds..
- Anywhere.ArcGIS to access feature services
- NetTopologySuite to do geoprocessing
- There are other libraries in other languages that can accomplish this as well
- For the moment decoupling our microservices allows us to scale in this manner



ArcGIS Enterprise

- The no brainer slide….
- We are using a default enterprise configuration
- SQL Server backed eGDB (Tuned)
- ----- And that’s is..



Conclusion

- Embedding Map
- Communication to microservices
- Load = Set expectations
- Scale = Containers
- Use ESRI products in default configurations for speed and maintenance

- Be kind and Work hard

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Thank you.

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