

THE NOT-SO-SECRET SECRETS THAT CAN HELP YOUR SPATIAL PROJECT



Butch Berlemann



ABOUT ME

- Live on the Front Range - Go CSU Thunderwolves !
- 21 Years working with GIS and EAM systems.
 - City of Pueblo CO - GIS Coordinator
 - Colorado Springs Utilities - GIS/Maximo Developer
 - Cohesive/Starboard/Microdesk Maximo Spatial Consultant
 - SSP - GIS Consultant
 - Southern Company – Maximo Spatial Architect



OVERVIEW

- Establish GIS hierarchies in Maximo
 - Automation Scripting
- Integration Overview
- Monitored the health of the Integration
 - Python
 - REST
- Testing and validating
 - Excel



PROJECT OVERVIEW

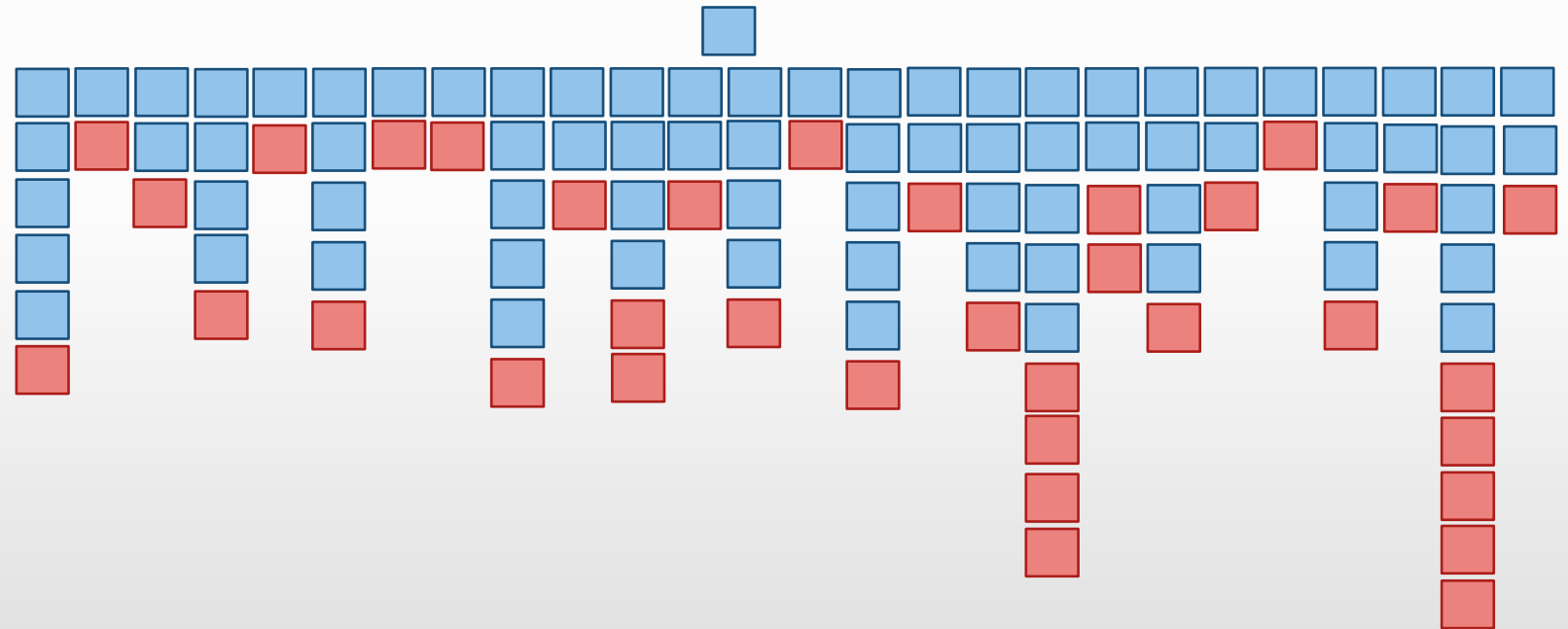
- Southern Company
 - 9 million gas and electric customers in 6 states.
- Electric Distribution
- Greenfield Project
- Three Sites
- 112 Linked Layers
- Total Linked Records
 - Assets = 7,929,778
 - Locations = 7,741,976
 - Total = 15,671,754+



ASSET LOCATION HIERARCHY

- Three Sites
- 26 children possible per site
- Location can have:
 - Child
 - Grand child
 - Great-grandchild
 - Great-great grandchild
- 5 different Assets types possible for a Location.

ASSET LOCATION HIERARCHY

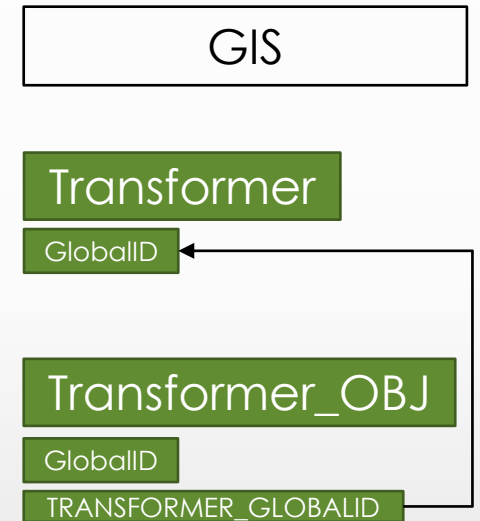




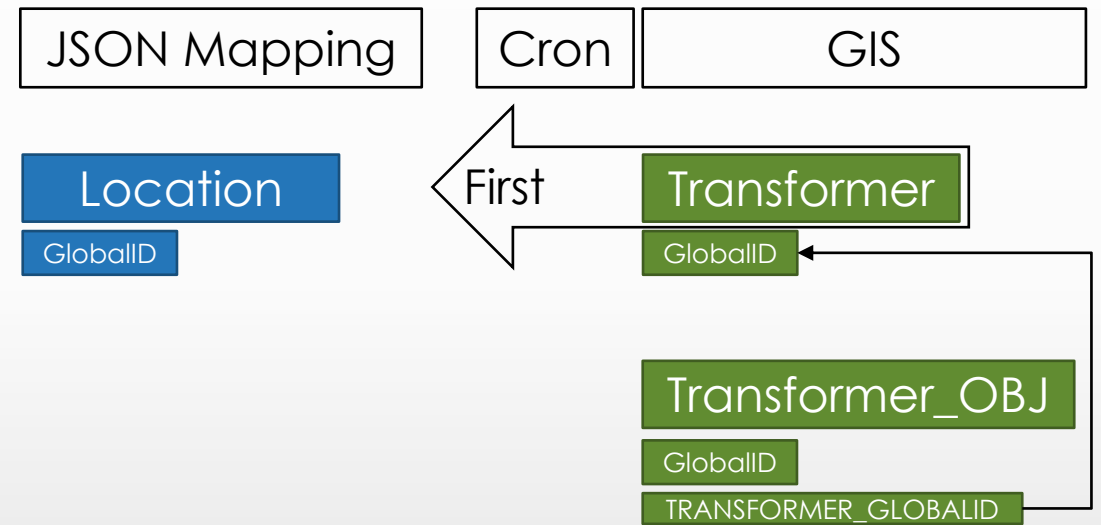
ASSET LOCATION HIERARCHY APPROACH

- Hierarchy is maintained in GIS using two fields
 - Global ID
 - Parent Global ID
- Fields added to Maximo Asset and Location
- JSON mapping translates GIS fields to Maximo MBOs
- Automation Scripts used to
 - Identify parent and assign the Location
- Cron scheduled process parents first

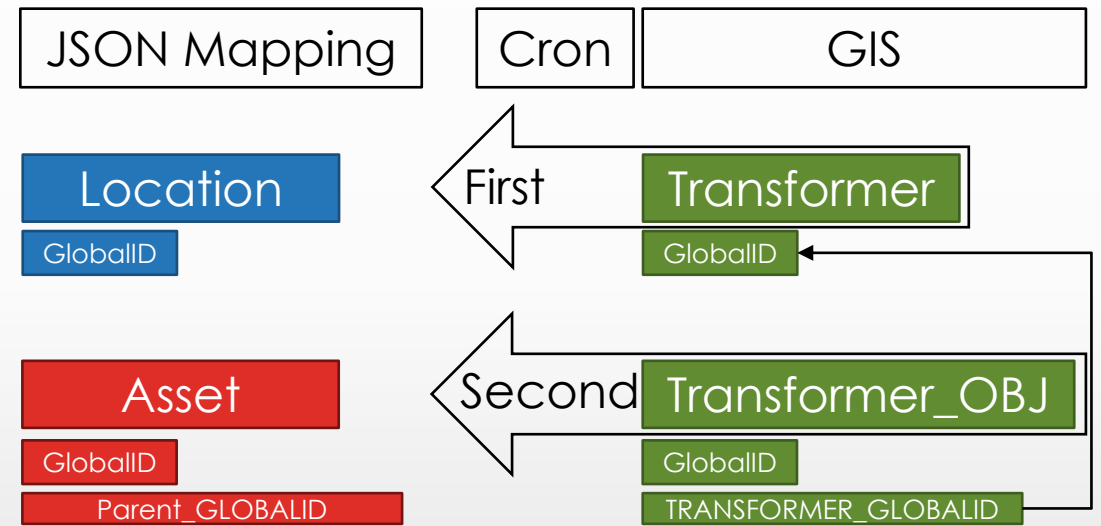
ASSET LOCATION HIERARCHY



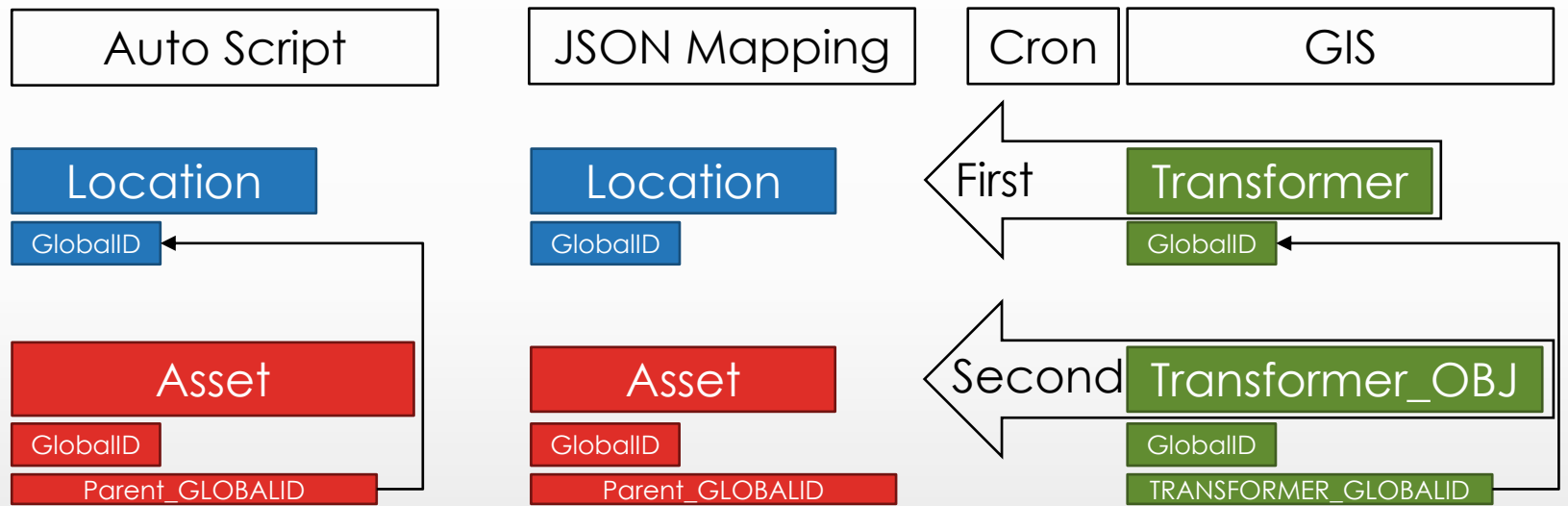
ASSET LOCATION HIERARCHY



ASSET LOCATION HIERARCHY



ASSET LOCATION HIERARCHY





INTEGRATION OVERVIEW

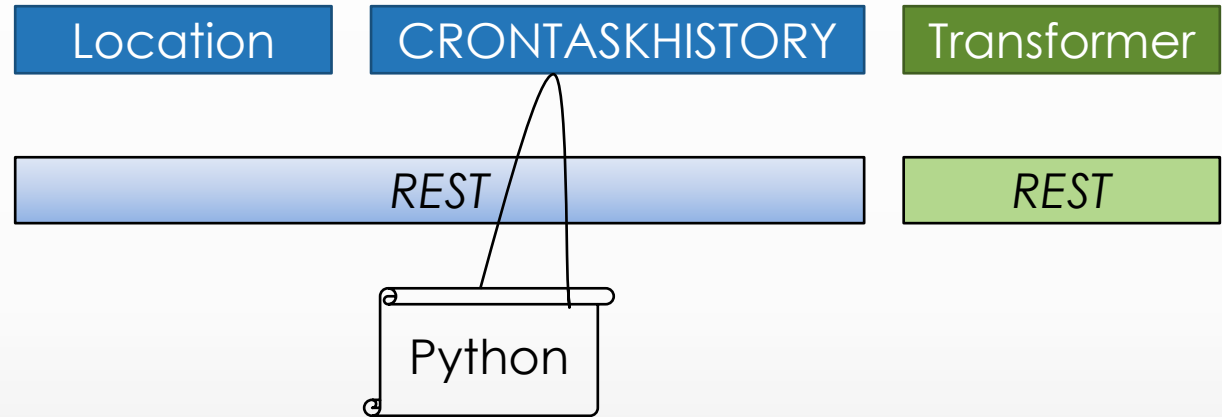
- Time based Integration
- Why ?
 - GN to UN
- How ?
 - :LASTSUCCESSFULSTARTTIME
 - CRONTASKHISTORY
 - Action, Error is null
 - Update URL



MONITORING OVERVIEW

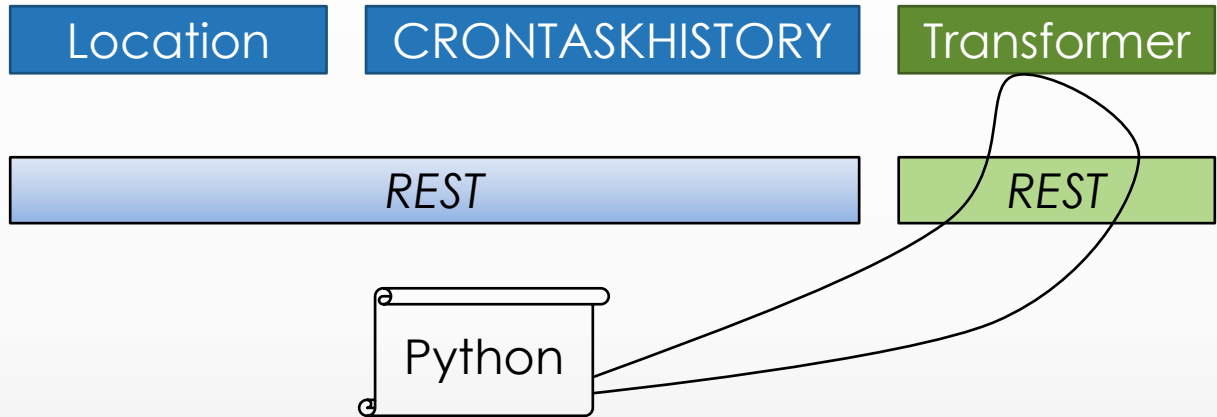
- CSV Cron Parameters
 - GISOBJECTNAME
 - URL
 - ENTERPRISESERVICENAME
- Python
 - urllib Module
 - Handles Application Security
- Maximo REST API
 - CRONTASKHISTORY
 - ASSET
 - LOCATION
- Output Log

MONITORING



<https://maximoserver/maxrest/rest/mbo/CRONTASKHISTORY?INSTANCENAME=GISOBJECTNAME&format=json>

MONITORING



<https://gis/arcgis/rest/services/Folder/Map/FeatureServer/50/query?where=DATEFIELD>=timestamp&f=json>

MONITORING



<https://maximo/maxrest/rest/mbo/LOCATION?GISKEY=~eq~2002&format=json>

MONITORING

```
2022-09-14 15:15:22.881769 Start GISOBJECT
2022-09-14 15:15:22.881769 Maximo Cron History URL = https://maximo/maxrest/rest/mbo/CRONTASKHISTORY?INSTANCENAME=GISOBJECT& format=json
2022-09-14 15:15:23.385015 ----cronStatus-----
2022-09-14 15:15:23.385015 Cron Ran on -- MXSERVER at 2022-09-13T05:30:00-04:00
2022-09-14 15:15:23.769029 ----gisCount-----
2022-09-14 15:15:23.769029 GISURL = https://gis/arcgis/rest/services/Folder/Map/FeatureServer/50/query?where=DATEFIELD>=timestamp&f=json
2022-09-14 15:15:23.926164 GIS Record Count = 26
2022-09-14 15:15:31.103250 ACHTUNG !!! -- No Data Found in Maximo for GISKEY 2002 -- https://maximo/maxrest/rest/mbo/LOCATION?GISKEY=~eq~2002& format=json
2022-09-14 15:15:23.926164 Maximo Record Count = 1
2022-09-14 15:15:51.630797
2022-09-14 15:15:51.949906
2022-09-14 15:15:52.148454 End GISOBJECT
```



MONITORING

- 2 – 3 Hour runtime
- 2000+ line log file
- Summary of processed records
- Benefits
 - Actionable results in hours
 - JSON can be stored
 - Allowed data to be retested
 - Created detailed Integration history

TESTING

- Excel
 - HYPERLINK Function
 - ID
 - GISMBO

C8 ✕ ✓ fx =HYPERLINK(C7&"/query?where=PTAG="&B8&"&outfields=ptag&f=pjson")

	A	B	C
1			
2	Cron Testing		
3			
4			
5	GIS MBO	ID	URL
6			
7	APCD_AERIALMKR_GISGN		https://GISSERVER/arcgis/rest/services/DIST/GPC_PR/FeatureServer/92
8	PTAG	3000100000418829	https://GISSERVER/arcgis/rest/services/DIST/GPC_PR/FeatureServer/92/query?where=PTAG=3000100000418829&outfields=ptag&f=pjson
9	Last 24 hours		=CURRENT_DATE-1&outfields=ptag&outSR=4326&f=pjson">https://GISSERVER/arcgis/rest/services/DIST/GPC_PR/FeatureServer/92/query?where=POST_DTM>=CURRENT_DATE-1&outfields=ptag&outSR=4326&f=pjson
10	Maximo		https://MaximoServer/maxrest/rest/mbo/LOCATIONS?SC_COMPID=~eq~3000100000418829& includecols=LOCATION& format=json& exactmatch=1
11	Decom GIS		https://MaximoServer/arcgis/rest/services/UA3/MPC_UA3_DELETES/FeatureServer/1/query?where=COMPONENT_ID=3000100000418829&f=pjson
12	GIS Decom Maximo Table		https://MaximoServer/maxrest/rest/mbo/SC_GISDECOMMISSION?SC_COMPID=~eq~3000100000418829& includecols=SC_COMPID& format=json& exactmatch=1
13	Decom Maximo		https://MaximoServer/maxrest/rest/mbo/LOCATIONS?LEGACY_ID=~eq~& includecols=LOCATION& format=json& exactmatch=1



TESTING

- Excel and URLs
 - Familiar tech
 - URL reduce variables
 - One path to MBO
 - No SQL access required
 - Narrows triage attention
 - Testers are empowered



CONCLUSION

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 - Automation Scripting
- Integration Overview
- Monitored the health of the Integration
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 - REST
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CONTACT

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