Building Live Data Feeds using Python

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What are they?
Use Cases

http://www.esri.com/services/disaster-response
http://disasterresponse.maps.arcgis.com/home/
BREAKING NEWS
SUPERMARKETS, HOMES TOPPLE
Interactive maps show most powerful videos
Feed requirements

- Accessible
- Timely
- Robust architecture (desktop → cloud, scalable)
- Extensible (cross platform, rapid deployment)
- Automated
Feed construction

• Pre-requisites:
  - Python
  - Arcpy
  - Others (.py, 7zip, degrib, ...)

• Components
  - ALFlib.py
    - Function / Class Library
  - ALFprocessor.py
    - Feed Processor +
    - ‘<feed file>.cfg’ (data processing logic)
  - ALFdeployer.py
    - Archive Distribution
Architecture of a feed

- Log Files
- Work FileGDB
- Live FileGDB
- Feed Routine
- Deployment Logic
- Published Map Service
- ArcGIS Server
- GIS User

Data flows from Log Files to Feed Routine, then to Work FileGDB, Live FileGDB, Deployment Logic, Published Map Service, and finally to GIS User.
Let’s deploy a feed

```python
for h3 in page.findAll("h3"):  
    value = (h3.contents[0])
    if value != "Afdeling":
        print >> txt, value
import codecs
f = codecs.open("alle.txt", "r", encoding="utf-8")
text = f.read()
f.close()
# open the file again for writing
f = codecs.open("alle.txt", "w", encoding="utf-8")
f.write(value+"\n")
# write the original contents
f.write(text)
f.close()
```
Cloud / Distributed

Internet

Log Files

Feed Routine

Work FileGDB

Deployment Logic

Live FileGDB

Feed Aggregator

ALFprocessor.py

Deployment (step 1 of 2)

Common Storage
(External or Internal)

Amazon S3

Zip File

FileGDB Archive
Cloud / Distributed (cont)

Common Storage
(External or Internal)

Amazon S3

One or More Archives

Work area

Download and Deployment Logic

Live FileGDB

Data Deployment
ALFdeployer.py

Published Map Service

ArcGIS Server

Deployment (step 2 of 2)
Cloud / Distributed
(Deployment Diagram)

- Source Data (NOAA / USGS / ...)
  - Feed Routine
    - Work FileGDB
      - Aggregation
        - One or more Machines dedicated to Aggregation
  - Zip File
    - Distribution
      - Multiple ArcGIS Server Machines
  - FileGDB Archive
  - Common Storage (External or Internal)
    - Amazon S3
      - Deployment
        - Live FileGDB
  - Published Map Service
    - Published Map Service
      - ArcGIS Server
        - Consumption
  - Internet
    - Published Map Service
      - Internet
Futures

• GeoEvent Processor for ArcGIS Server
  - ArcGIS Server Extension

• Predictive Feeds

• Your feeds! -> Aggregated Live Feed Community
  http://esriurl.com/LiveFeed
Go forth and hack

• Blog: http://esriurl.com/LiveFeedsBlog

• AGOL Community Page (samples, scripts)
  http://esriurl.com/LiveFeed

• Live Data Feeds:
  http://tmservices1.esri.com/arcgis/rest/services/LiveFeeds
Thank you

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