

# How to download features using the ArcGIS REST API

This script requires [jq](#).

[download\\_arcgis\\_rest\\_features.sh](#)

```
#!/bin/sh

if [ $# -lt 2 ]; then
    echo "Usage: download_arcgis_rest_features.sh REST_URL output"
    exit
fi

# URL for an ArcGIS REST API
rest_url=$1

# output filename
output=$2

# prefix
prefix=$(echo $output | sed 's/\.*//')

# starting record offset
offset=0
# max record count
count=2000

url="$rest_url/query"

# required parameters
url="$url?f=geojson"
url="$url&where=1%3D1"
url="$url&outFields=*"
url="$url&resultRecordCount=$count"
url="$url&resultOffset=---OFFSET---"

# optional parameters
# &text=
# &objectIds=
# &time=
# &geometry=
# &geometryType=esriGeometryEnvelope
# &inSR=
# &spatialRel=esriSpatialRelIntersects
# &distance=
# &units=esriSRUnit_Foot
# &relationParam=
```

```
# &returnGeometry=true
# &returnTrueCurves=false
# &maxAllowableOffset=
# &geometryPrecision=
# &outSR=
# &havingClause=
# &returnIdsOnly=false
# &returnCountOnly=false
# &orderByFields=OBJECTID
# &groupByFieldsForStatistics=
# &outStatistics=
# &returnZ=false
# &returnM=false
# &gdbVersion=
# &historicMoment=
# &returnDistinctValues=false
# &returnExtentOnly=false
# &datumTransformation=
# &parameterValues=
# &rangeValues=
# &quantizationParameters=
# &featureEncoding=esriDefault

# infinite while loop; : mean true, so while : means while true, which
# means forever;
# you'll have to manually break out of this infinite loop
while ;; do
    # generate a filename
    fn=${prefix}_${offset}.geojson
    [ -f $fn ] || wget -O $fn "$(echo "$url" | sed "s/---OFFSET---
/$offset/")"
    # read wget error
    err=$?
    # if there was a wget error or the filesize is zero
    if [ $err -ne 0 -o ! -s $fn ]; then
        # print the wget error
        [ $err -ne 0 ] && echo "$fn: wget error $err"
        # delete broken file
        rm -f $fn
        # try it again
        continue
    fi
    # we will only stop when we reached the last record
    grep -q "exceededTransferLimit.*true" $fn || break
    # move to the next offset
    offset=$(expr $offset + $count)
done

# merge geojson files
```

```
jq 'reduce inputs.features as $$ (.; .features += $$) |  
del(.properties)' *.geojson > $output
```

Here is an example:

```
./download_arcgis_rest_features.sh  
https://hazards.fema.gov/arcgis/rest/services/FIRMette/NFHLREST_FIRMette/Map  
Server/1 firm_panels
```

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