MSC GeoMet Web Feature Service (WFS) 3.0 API HowTo

OGC Web Feature Service 3.0

MSC GeoMet WFS 3.0 API Overview

The OGC WFS 3.0 API provides a specification to querying geospatial data on the web.

The service operates over HTTP.

Requests are made via HTTP GET requests.

Responses are JSON/GeoJSON by default.

No HTTP authentication is required.

Service Endpoints

WFS 3

http://geo.weather.gc.ca/geomet-beta/features

OpenAPI 3.0 Document

http://geo.weather.gc.ca/geomet-beta/features/api

Feature Collections

List all feature collections available:

http://geo.weather.gc.ca/geomet-beta/features/collections

The response provides a list of feature collections with associated metadata (title, description, links, extent, CRS).

Feature Collection

List a single feature collection:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-stations

Inspecting Feature Collection Schema

Issue a query returning a single feature to inspect geometry and properties:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?limit=1

Querying

Querying feature collections allows for spatial, temporal and property filtering. Filter parameters can be combined to formulate an exclusive ('and') search.

The examples that follow use the hydrometric daily mean feature collection.

Default query, no filters:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items

Spatial

Query by bounding box (minx, miny, maxx, maxy)

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?bbox=-140,43.2,-65,67

Temporal

Query by a single time instant:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?time=1972-10-30

Query by a time extent:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?time=1972-10-30/2010-07-31

Property

Query by a feature collection property:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?STATION_NUMBER=10CD001

Paging

The default response size is 10 features, starting with the first feature. To adjust/page through query results.

Query and limit to features 1-2:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?STATION_NUMBER=10CD001&limit=2

Query and limit to features 1-100:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?STATION_NUMBER=10CD001&limit=100

Query and limit to features 101-200:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?STATION_NUMBER=10CD001&startindex=101&limit=100

Combining Filter Parameters

Query all daily mean data from a single station between 2001 and 2010:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?STATION_NUMBER=10CD001&time=2001-01-01/2010-12-31

Exporting to CSV format

Any query can be exported to CSV by adding f=csv to the request. E

Access by Identifier

Fetch a single feature by identifier:

http://geo.weather.gc.ca/geomet-beta/features/collections/hydrometric-daily-mean/items?f=csv

Tools and Implementations

GDAL

Using GDAL's WFS 3 support:

```
# list datasets
ogrinfo WFS3:http://geo.weather.gc.ca/geomet-beta/features
# describe a single dataset
ogrinfo WFS3:http://geo.weather.gc.ca/geomet-beta/features hydrometric-daily-mean -al -so
# perform spatial query
ogrinfo WFS3:http://geo.weather.gc.ca/geomet-beta/features hydrometric-daily-mean -spat -100 50 -90 55
```

geojson.io

Using geojson.io, copy/paste any query result to visualize and point/click query.