CWIC OpenSearch Iterations

This document describes the iterations implementing CWIC OpenSearch interface. Generally, there are three iterations so far. Iteration 1 is about the design and implementation of CWIC OpenSearch Description Document (OSDD). Iterations 2 presents a static request/response. Iteration 3 presents the detailed implementation for several data providers with live/dynamic response.

Iteration 1 - OpenSearch Description Document Design

CWIC team developed the web API generating OpenSearch description document dynamically based on the dataset identifier. In the response of IDN OpenSearch, the web API designed could be used by passing the DIF entry ID as parameter to retrieve the description document about granule-level query.

1. OSDD endpoint: http://cwicdev.wgiss.ceos.org/opensearch/datasets.atom?
2. Parameter:
    a. datasetId: used to specify dataset identifier (DIF Entry ID)
3. Sample request: http://cwicdev.wgiss.ceos.org/opensearch/datasets.atom?datasetId=Landsat_8

> How to handle unsupported dataset identifier?
>
> Solution: Return error information with HTTP status (400/bad request)

Iteration 2 - Granule-level query - Static response

This section describe how to implement CWIC OpenSearch API for granule-level query with static response.

1. CWIC OpenSearch endpoint: http://cwicdev.wgiss.ceos.org/opensearch/granules.atom?
2. Parameter:
    a. datasetId: used to specify dataset identifier (DIF Entry ID)
    b. startIndex: Integer with the start index of returned search results
    c. count: Integer with the number of returned search results per page
    d. timeStart: Character string with the start of the temporal interval according to RFC-3339
    e. timeEnd: Character string with the end of the temporal interval according to RFC-3339
    f. geoBox: Geographic bounding box
3. Sample request: http://cwicdev.wgiss.ceos.org/opensearch/granules.atom?datasetId=Landsat_8&startIndex=1&count=10&timeStart=2013-01-01T00:00:00Z&timeEnd=2014-01-31T00:00:00Z&geoBox=-180,-90,180,90

> The sample request in iteration 2 is now dynamic based on the spatial-temporal query constraints because USGS/LSI data provider has been supported in the iteration 3.

Iteration 3 - Granule-level query - Live response

Iteration 2 implementation return the static response which shows the request and response of CWIC OpenSearch interface. In the iteration 3, all data providers will be integrated and the data granule query on the fly will be supported with OpenSearch interface shown in iteration 2.

1. CWIC OpenSearch endpoint: http://cwicdev.wgiss.ceos.org/opensearch/granules.atom?
2. Parameter:
    a. datasetId: used to specify dataset identifier (DIF Entry ID)
    b. startIndex: Integer with the start index of returned search results
    c. count: Integer with the number of returned search results per page
    d. timeStart: Character string with the start of the temporal interval according to RFC-3339
    e. timeEnd: Character string with the end of the temporal interval according to RFC-3339
    f. geoBox: Geographic bounding box
    g. format: response format, only support "atom" so far. Can be ignored.
3. Integrated data provider:
    a. Brazil INPE
    b. USGS LSI
    c. NOAA GHRSST
4. Ongoing data provider
    a. NASA ECHO

    b. Canada CCMEO
5. Sample request:
    a. http://cwicdev.wgiss.ceos.org/opensearch/granules.atom?datasetId=Landsat_8&startIndex=1&count=5&timeStart=2013-09-25T00:00:00Z&timeEnd=2013-09-30T00:00:00Z&geoBox=-180,-90,180,90
    b. http://cwicdev.wgiss.ceos.org/opensearch/granules.atom?datasetId=INPE_CBERS2B_CCD&startIndex=22&count=5&timeStart=2007-09-25T00:00:00Z&timeEnd=2010-03-10T00:00:00Z&geoBox=-180,-90,180,90
    c. http://cwicdev.wgiss.ceos.org/opensearch/granules.atom?datasetId=NAVO-L2P-AVHRR19_L&startIndex=1&count=10&timeStart=2007-09-25T00:00:00Z&timeEnd=2010-03-10T00:00:00Z&geoBox=-180,-90,180,90

For the CWIC OpenSearch query parameters, only "datasetId" is mandatory, all other parameters are optional.