

CSW2WxS

Chaining OGC Catalogs to Map and Feature Services

CSW2WxS is a web service that executes an OGC compliant catalog search and returns the result as a Web Map Service (WMS) or Web Feature Service (WFS) response. It can be seen as a utility service that makes chaining a CSW to a WMS or WFS a simple one-step process.

DUTCH NATIONAL ATLAS

CSW2WxS originated from the prototype 3rd edition of the National Atlas of the Netherlands. In this prototype the users get the possibility to search within the *Nationaal Georegister*, the official metadata catalog for the Dutch National Geodata Infrastructure. The usefulness of this system for other purposes is limited, mainly because of its *tight coupling* to the Dutch NGDI and the specific National Atlas client software (a Flash application).

LOOSE COUPLING

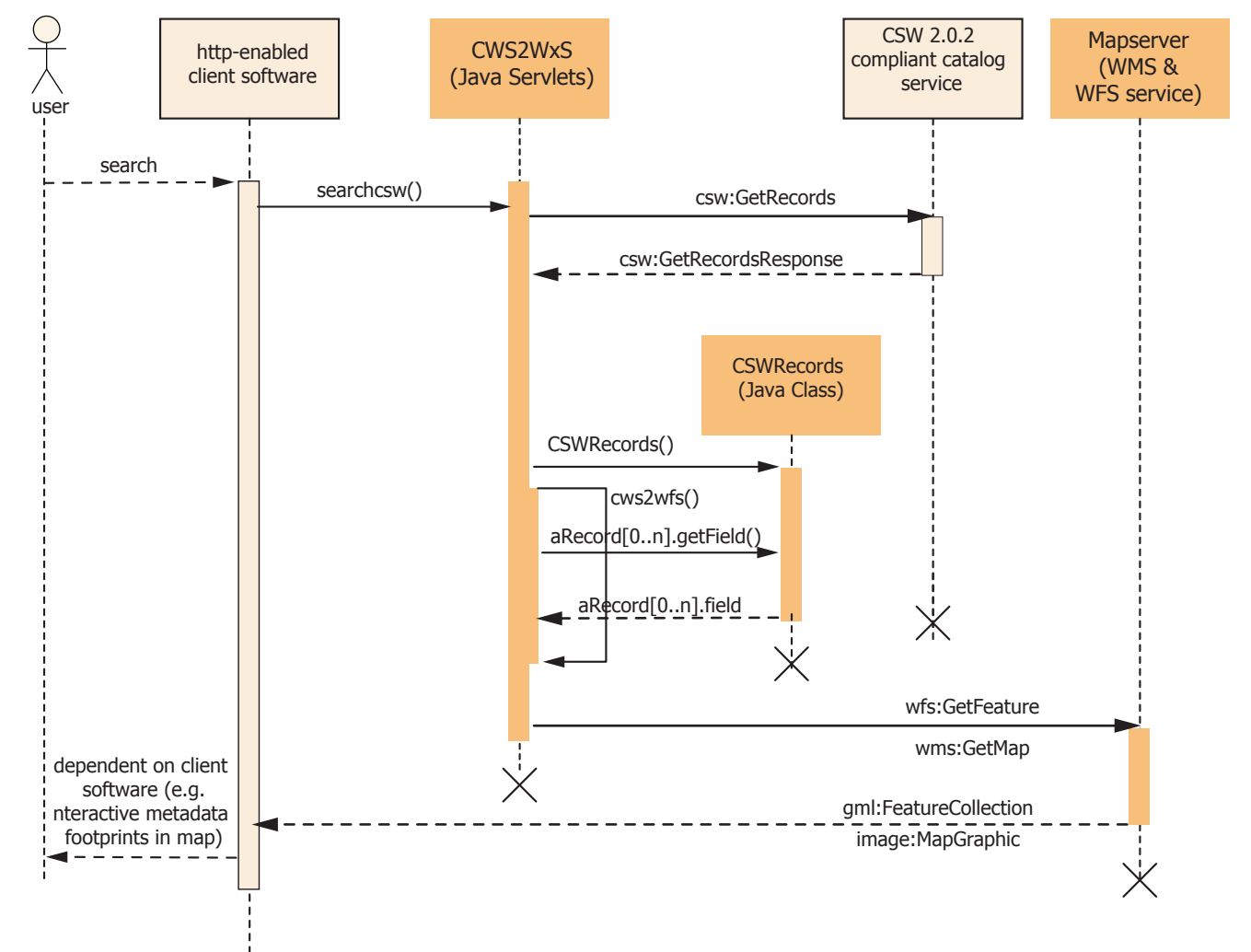
We figured that this utility service could be useful in a broader context, and we set about making the system more generic and *loosely coupled*, i.e., not dependent on specific catalogs or clients.

THE CSW2WxS SYSTEM

The CSW2WxS system works according to the sequence diagram shown on the right: the relevant search parameters are retrieved from the client and used to execute a search using the requested catalog service. Next, the search results are parsed and forwarded to MapServer, an open source geographic data rendering engine. The output is *either*:

- a WFS FeatureCollection, a GML data stream of features representing the data sets found in the search, with the geometries of the footprints, and the rest of the metadata encoded as feature attributes, or
- a WMS map graphic depicting the data set footprints. In this case, the initial output is less rich in content, as the WMS interface does not provide for inclusion of feature attributes directly in the WMS GetMap response; however, if the WMS client is equipped for that, it can retrieve the attributes of a feature through a GetFeatureInfo request.

What the user actually can do with the output, does of course depend on the client software: in the simplest setup one can use a Web Form to formulate a metadata search, and the system can be used to respond with a simple map output through the WMS interface, resulting in a map with metadata footprints.



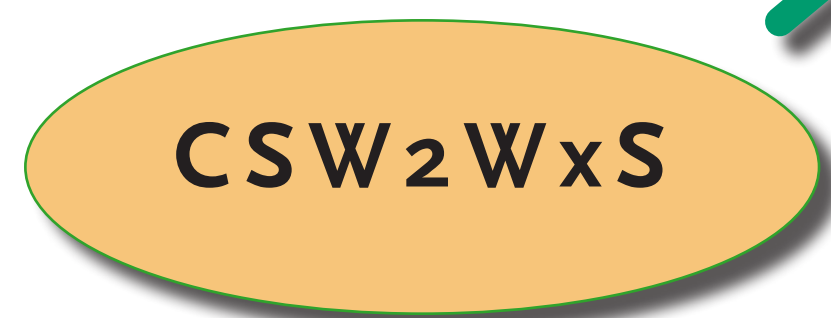
Sequence diagram of a CSW2WxS search. Note that only the darker elements are parts of the actual CSW2WxS system, loosely coupled with the other (lighter) parts, which can be any http-enabled client and any CSW compliant catalog service.

Using a desktop GIS such as the open source QuantumGIS, the WFS output could be loaded and the footprints of the data would be available as a map layer, whose attributes contain the metadata information.

OPEN SOURCE

On our web site we provide the Java code of the service and the configuration files for MapServer, and an explanation of how to set up the system.

Catalog search in web form



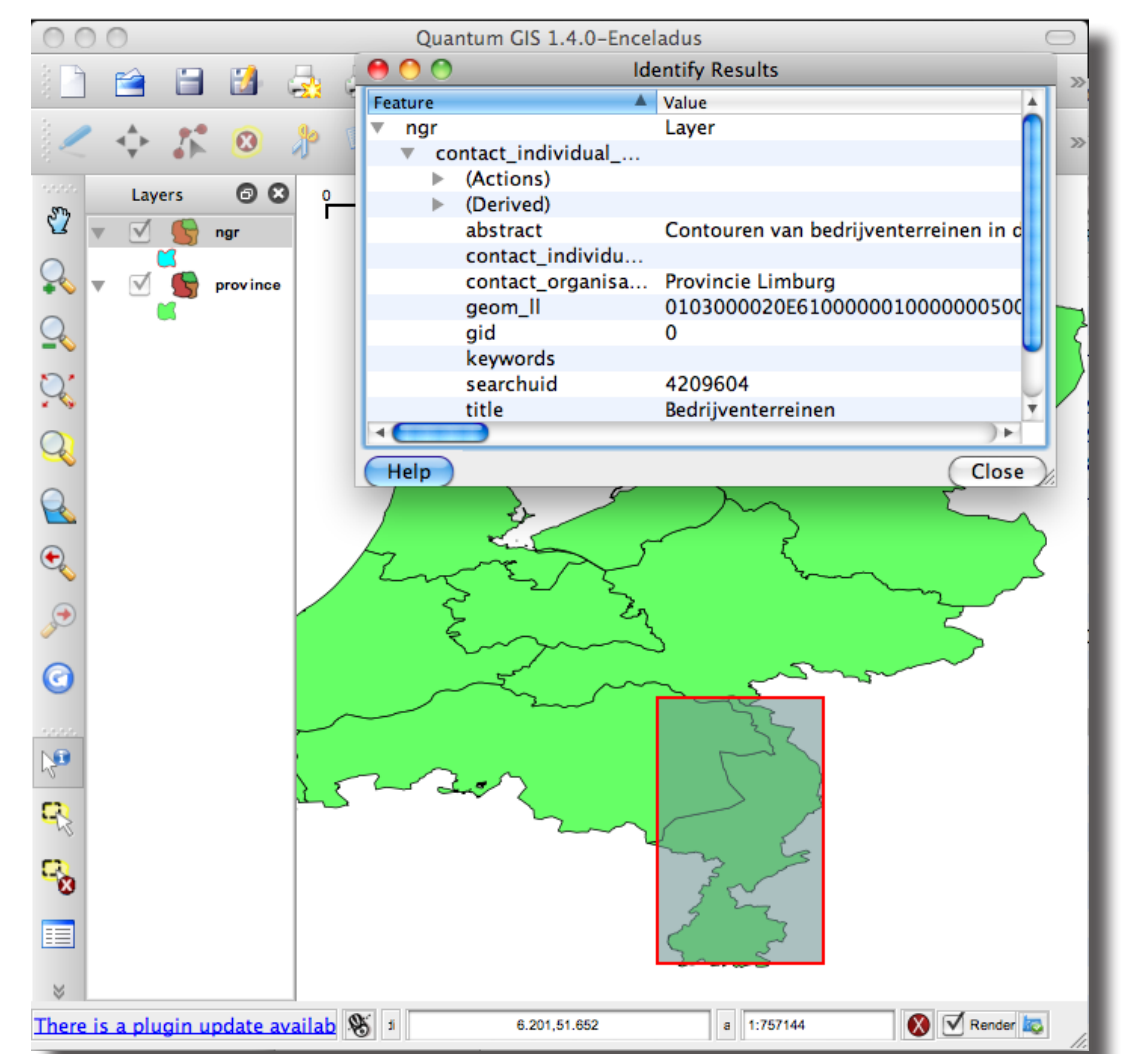
WMS output in browser

```

-wfs:FeatureCollection xmlns:schemaLocation="http://www.opengis.net/wfs http://www.opengis.net/wfs"
  <gml:boundedBy>
    <-gml:Box srsName="EPSG:28992">
      <-gml:coordinates>
        169687.501407,308472.822808 214321.220183,420704.854256
      </gml:coordinates>
    </gml:boundedBy>
    <-gml:featureMembers>
      <-oms:ogr fid="ogrID">
        <-gml:boundedBy>
          <-gml:Box srsName="EPSG:28992">
            <-gml:coordinates>
              169687.501407,308472.822808 214321.220183,420704.854256
            </gml:coordinates>
          </gml:boundedBy>
          <-ms:geometry>
            <-gml:MultiPolygon srsName="EPSG:28992">

```

WFS output (GML)



WFS output loaded in GIS viewer

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MORE INFORMATION

CSW2WxS website:
<http://geoserver.itc.nl/natatlas/csw2wxs/>
Dutch National Atlas site:
<http://www.nationaleatlas.nl/>
(mostly in Dutch)

