

GeoTools Oracle SDO_NN Filter Function

Oracle SDO_NN Filter Function has been added to GeoTools stable branch (8.x) and master branch (9.x). Two modules have been updated: gt-jdbc and gt-jdbc-oracle.

You can find them in this snapshot release of the stable branch:

<https://dl.dropbox.com/u/18412798/geotools-oracle-sdonn/geotools-8-SNAPSHOT-bin.zip>

You can try replacing only the two updated jars:

<https://dl.dropbox.com/u/18412798/geotools-oracle-sdonn/gt-jdbc-8-SNAPSHOT.jar>

<https://dl.dropbox.com/u/18412798/geotools-oracle-sdonn/gt-jdbc-oracle-8-SNAPSHOT.jar>

The “sdo_nn” function has 4 parameters:

Reference Geometry	Return nearest neighbors of this geometry.	REQUIRED
sdo_num_res	Number of results to be returned.	REQUIRED
CQL Filter	Results will satisfy this filter.	OPTIONAL
sdo_batch_size	Specifies the number of rows to be evaluated at a time.	OPTIONAL

A note about optional parameters: if you want to specify sdo_batch_size, you need to specify also a CQL Filter (it could be INCLUDE).

This function will create a SQL query like the following:

```
SELECT ... FROM my_table
```

```
WHERE id in
```

```
(SELECT id from my_table where SDO_NN(my_geom, sdo_geometry(...), 'sdo_batch_size=10')  
= 'TRUE' AND ROWNUM <= 10);
```

The table must have a primary key.

WMS Request example:

```
geoserver/ows?service=WMS&version=1.1.0&request=GetMap  
&layers=it.geosolutions:WIKITUDE  
&bbox=16.3395021220068,48.2000013456268,16.3784994759603,48.2198987385627  
&width=646&height=330  
&srs=EPSG:4326
```

&format=image%2Fjpeg
&cql_filter=sdo_nn(POINT(16.36%2048.205)%2C30)%3Dtrue

WFS GET Request example:

geoserver/ows?service=WFS&version=1.1.0&request=GetFeature
&typeName=it.geosolutions:WIKITUDE
&cql_filter=sdo_nn(POINT(16.36%2048.205)%2C30)%3Dtrue

WFS POST Request example:

```
<?xml version="1.0" encoding="UTF-8"?>
<wfs:GetFeature handle="GeoTools WFS DataStore"
  outputFormat="text/xml; subtype=gml/3.1.1" resultType="results"
  service="WFS" version="1.1.0" xmlns:ogc="http://www.opengis.net/ogc"
  xmlns:gml="http://www.opengis.net/gml"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:ows="http://www.opengis.net/ows" xmlns:wfs="http://www.opengis.net/wfs">
  <wfs:Query srsName="urn:x-ogc:def:crs:EPSG:4326"
    typeName="it.geosolutions:WIKITUDE">
    <ogc:Filter>
      <ogc:PropertyIsEqualTo>
        <ogc:Function name="sdo_nn">
          <!-- NN to the following Geometry: -->
          <ogc:Literal>
            <gml:Point>
              <gml:coordinates>16.36,48.205</gml:coordinates>
            </gml:Point>
          </ogc:Literal>
          <!-- Max Number of Features returned: -->
          <ogc:Literal>30</ogc:Literal>
          <!-- Optional parameters: -->
          <!-- CQL Filter: -->
          <ogc:Literal>STRNAML LIKE '%platz'</ogc:Literal>
          <!-- Batch size: -->
          <ogc:Literal>10</ogc:Literal>
        </ogc:Function>
        <ogc:Literal>true</ogc:Literal>
      </ogc:PropertyIsEqualTo>
    </ogc:Filter>
  </wfs:Query>
```

`</wfs:GetFeature>`

Note: the function `sdo_nn` must always be compared to a true value.