GeoNetwork Workshop

FOSS4G 2022 - Firenze, IT
In this workshop,

- We are using GeoNetwork version 4.2.0 and coming 4.2.1
- We can use online demo catalogues (or install it)
  - A GeoCat.BV Live instance
  - [https://apps.titellus.net/geonetwork](https://apps.titellus.net/geonetwork) (login admin/admin)

- Date: 2022-08-22
- Time: 4 hours
- Who is presenting?
Workshop agenda

- Quick overview
- “Tour de table”, any particular expectations?
- 3 main topics

**INSPIRE**

**Harvesting**

**Thematic portals**

- Going further
Workshop agenda

● Quick overview
● “Tour de table”, any particular expectations?
● 3 main topics with 3 user story

INSPIRE

Harvesting

Thematic portals
Workshop presentation

https://tinyurl.com/nhe4swxd
Installation from ZIP, WAR, docker, source

Java 8
Download GeoNetwork
Download Elasticsearch
(optional) Download Kibana
Start GeoNetwork
Start Elasticsearch
(optional) Start Kibana
The docker way

git clone https://github.com/geonetwork/docker-geonetwork.git

cd docker-geonetwork/4.2.0

docker-compose up
GN_VERSION=4.2.0
ES_VERSION=7.17.5

mkdir gn

 cd gn

wget https://sourceforge.net/projects/geonetwork/files/GeoNetwork_opensource/v$GN_VERSION/geonetwork-bundle-$GN_VERSION-0.zip

mkdir geonetwork

 cd geonetwork

 mkdir data

 unzip geonetwork-bundle-$GN_VERSION-0.zip

 cd ..

wget https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-$ES_VERSION-linux-x86_64.tar.gz

tar xvfz elasticsearch-$ES_VERSION-linux-x86_64.tar.gz

wget https://artifacts.elastic.co/downloads/kibana/kibana-$ES_VERSION-linux-x86_64.tar.gz

tar xvfz kibana-$ES_VERSION-linux-x86_64.tar.gz

 cat <<EOF >> kibana-$ES_VERSION-linux-x86_64/config/kibana.yml
server.basePath: "/geonetwork/dashboards"
kibana.index: ".dashboards"
EOF

nohup ./elasticsearch-$ES_VERSION/bin/elasticsearch &

nohup ./kibana-$ES_VERSION-linux-x86_64/bin/kibana &

nohup ./geonetwork/bin/startup.sh &
Installation / Good practices

eg. bin/startup.sh

# Configure database
export GEONETWORK_DB_NAME=$CURRENT_DIR/../../../data/gndb

# Configure data directory
export JAVA_OPTS="$JAVA_OPTS
-Dgeonetwork.dir=$CURRENT_DIR/../../../data
-Dgeonetwork.schema.dir=$CURRENT_DIR/../../../web/geonetwork WEB-INF/data/config/schema_plugins
-Dgeonetwork.indexConfig.dir=$CURRENT_DIR/../../../web/geonetwork WEB-INF/data/config/index
-Dgeonetwork.formatter.dir=$CURRENT_DIR/../../../web/geonetwork WEB-INF/data/data/formatter"
GeoNetwork instances to use for the workshop

- GeoCat live instance (4.2.0)
  - [https://foss4g-2022-live1.geocat.live](https://foss4g-2022-live1.geocat.live) (admin/WelcomeToFOSS4G2022!)

- titellus demo (coming 4.2.1)
  - [https://apps.titellus.net/geonetwork](https://apps.titellus.net/geonetwork) (admin/admin for login)

- or you run it from your machine
Quickstart

- Sign in admin/admin
- Admin > Metadata > Load samples
- Searching
- Discovering information
- Browsing data
Tour de table / What do you expect? Any particular topics?

- Relation between records
- Moving to GN4
- Integration with other apps. See API
INSPIRE / User story / Service Public de Wallonie

Wallonia region main metadata catalogue (using ISO19115-3 standard) also expose a thematic node dedicated to INSPIRE. Specific CSW end point for all and for INSPIRE. Validation using remote validator of all records in the scope of the Directive using specific CSW post process (INSPIRE monitoring results)

https://metawal.wallonie.be/geonetwork/
https://metawal.wallonie.be/geonetwork/inspire
INSPIRE / Hands-on

- Import from Registry GeoNetwork load codelists from Registry
  - INSPIRE themes
  - Priority datasets
  - Spatial scope
- Import GEMET from here
- Setting up INSPIRE validator https://youtu.be/V2lbzD5iaNk
  - INSPIRE validator configuration
  - Test validator URL https://validator.geocat.live/validator
- Creating a new record from TG2 template
- Validating
- Adding priority datasets and spatial scope in search aggregations
- Publishing an INSPIRE CSW endpoint

More on this in "Revamped INSPIRE Geoportal - Cooking the next generation of spatial data catalogues"
If interested in migration to INSPIRE TG2, check Metawal presentation and documentation
Harvesting from various sources and various protocols
Harvesting / User story / Ifremer - Sextant

- Create metadata of services using OGC service harvester
- Populate contact directory using harvester
- Harvest other catalogues using CSW
- Use batch editing to categorise harvested records
- Apply transformation to import custom format eg. JSON Seanoe format
- and index data for in-depth data discovery
Create service metadata using OGC harvester

Facilitate add layer on map

Easier metadata (including links between service and layers)
Populate contact directory using harvester

8K contacts dispatched in groups
Populate contact directory using harvester
Harvest other catalogues

OGC CSW
GeoNetwork protocol
OAI-PMH
Categorize harvested records using your classification systems

Batch editing can be used to modify harvested records eg.

- adding keywords
- anonymize
- ...

eg. SHOM
Apply transformation

Import custom JSON files
Convert to ISO19139
eg. Seanoe to Sextant

See also simple JSON harvester
Indexing data

name of the sub-basin (SUB_BAS and SUB_NAME) - area of the sub-basin in square km (SUB_AREA)
- numerical code of the sub-basin towards which the sub-basin flows (TO_SUBBAS) (the codes -999 and -999 have been assigned respectively to internal sub-basins and to sub-basins draining into the sea)

Discover data

<table>
<thead>
<tr>
<th>maj_bas</th>
<th>sub_bas</th>
<th>maj_name</th>
<th>sub_name</th>
<th>to_subbas</th>
<th>maj_area</th>
<th>sub_area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>86.0</td>
<td>0</td>
<td>86.0</td>
<td>Niger 0</td>
<td></td>
<td>2136790.0</td>
<td>534043.0</td>
</tr>
<tr>
<td>89.0</td>
<td>0</td>
<td>89.0</td>
<td>Niger 16</td>
<td></td>
<td>131867.0</td>
<td></td>
</tr>
<tr>
<td>82.0</td>
<td>0</td>
<td>82.0</td>
<td>Niger 2</td>
<td></td>
<td>114276.0</td>
<td></td>
</tr>
<tr>
<td>87.0</td>
<td>0</td>
<td>87.0</td>
<td>Niger 7</td>
<td></td>
<td>84784.0</td>
<td></td>
</tr>
<tr>
<td>85.0</td>
<td>0</td>
<td>85.0</td>
<td>Niger 10</td>
<td></td>
<td>73748.0</td>
<td></td>
</tr>
</tbody>
</table>
Harvesting / Hands-on

- **CSW**
  - [https://www.nationaalgeoregister.nl/geonetwork/srv/csw](https://www.nationaalgeoregister.nl/geonetwork/srv/csw)
  - [https://www.sandre.eaufrance.fr/atlas/srv/eng/csw](https://www.sandre.eaufrance.fr/atlas/srv/eng/csw)

- **WMS**
  - [https://services.sandre.eaufrance.fr/geo/zagri](https://services.sandre.eaufrance.fr/geo/zagri)
  - [https://services.sandre.eaufrance.fr/geo/obs](https://services.sandre.eaufrance.fr/geo/obs)
  - [http://geoservices.brgm.fr/geologie](http://geoservices.brgm.fr/geologie)

- **Harvesting data**
  - for data harvesting “River basin of Africa”, “Obstacles à l’écoulement”
Revamped INSPIRE Geoportal - Cooking the next generation of spatial data catalogues

2022-08-25, 11:30–12:00 (Europe/Rome), Auditorium

https://talks.osgeo.org/foss4g-2022/talk/MBDB3W/
Thematic portals
Portal / User story / EEA

EEA thematic nodes [https://sdi.eea.europa.eu/](https://sdi.eea.europa.eu/)
Portal / Hands-on

● Create a new portal from Admin > Settings > Sources (see GeoNetwork multi-portal configuration)
  ○ Current catalogue portal?
    https://sdi.eea.europa.eu/catalogue/srv/api/sources
  ○ Request a portal which does not exist
  ○ Upload logo and set portal logo

● Learning queries

● UI configuration (eg. modules, facets, …)
Portal filter / Learning queries

+any.default:IDP* = full text search

+resourceIdentifier.code:copernicus* = resource identifier starts with

-resourceIdentifier.code:eea* -resourceIdentifier.code:copernicus* = NOT using “-”

-cl_status.key:obsolete -cl_status.key:superseded +cat:biodiversity = NOT status and category

+th_httpinspireeceuropeumetadatadecodelistPriorityDataset-PriorityDataset:* = Thesaurus used

+cat:fise +_exists_:resourceTitleObject = Category AND field exist

+th_rod-eionet-europa-euNumber:[1 TO *] = 1 or more reporting obligations

More on Elasticsearch doc, fields list or check search results

Test queries using q(...) in full text search field
Portal config / User Interface

Enable/disable apps eg. only search, only mapping

Configuring languages

Configuring facets/aggregations

Configuring search
Portal config / UI / Learning aggregations

Home page
Search filters
Dashboards
Statistics
Directory filters
Portal config / UI / Learning aggregations

Documentation and default configuration

More on Elasticsearch aggregations
Going further
More topics

- Analysis & dashboards examples
- Using the API
- Building your own editor
- Editing in batch
- … depending on your questions
Dashboards

- Records: 865 records, 630 published records
- Resource types: dataset, series
- Distribution formats: ESRI Shapefile (.shp), ESRI File Geodatabase (.dbf), TIFF (.tif), GeoJSON (.geojson), GML (.gml), Others
- Accessibility of data: 506 with visualization service, 171 with download service
- Last update of records: Aug 1, 2021 @ 00:00:00, Feb 1, 2022 @ 00:00:00, May 1, 2022 @ 00:00:00
Dashboards

Follow catalogue activity
Using the OpenAPI

GeoNetwork 4.2.1 OpenAPI Documentation

This is the description of the GeoNetwork OpenAPI. Use this API to manage your catalog.

GeoNetwork user mailing list - Website
Send email to GeoNetwork user mailing list
GPL 2.0
Learn how to access the catalog using the GeoNetwork REST API.

Servers

{catalog}/{portal}/api - My GeoNetwork

Computed URL: http://localhost:8080/geonetwork/srv/api

Server variables

- catalog: http://localhost:8080/geonetwork
- portal: srv

atom ATOM

GET /atom/describe/resource Describe resource
Building your own editor
Batch editing example

Select records, define changes, preview and save.

Add "requires authentication" in the download link label for all Copernicus metadata entries

Added by José Rubio about 15 hours ago. Updated about 12 hours ago.

Status: NEW  Start date: 2022-08-15
Priority: = Normal  Due date: -
Assignee: François Prunayre  % Done: 0%
Category: GeoNetwork
Target version: -
Keywords:

Description

For all those entries which identifier starts with "copernicus" the download requires a sign-in (which is managed externally) - see currently here:
They are not restricted (as the policy we have now) but simply requires log in. As users can use an Eionet account or a Copernicus local account, I think we can just say "requires authentication".
"Direct download (requires authentication)"
<gmd:CI_OnlineResource>
  <gmd:linkage>
  </gmd:linkage>
  <gmd:protocol>
    <gco:CharacterString>Download (require authentication)</gco:CharacterString>
  </gmd:protocol>
  <gmd:name>
    <gco:CharacterString>Download (require authentication)</gco:CharacterString>
  </gmd:name>
</gmd:CI_OnlineResource>
Batch editing example
Batch editing example

JSON configuration that you can paste in the interface:

```
{
  "field": "Distribution / Replacing a link name",
  "insertMode": "gn_add",
  "xpath": "/gmd:distributionInfo/*/gmd:transferOptions/*/gmd:online/*[substring(gmd:linkage/*/text(), string-length(gmd:linkage/*/text()) - string-length('?tab=download') + 1) = '?tab=download']",
}
```

User can preview changes:
Related records

eg. superseded
Any other questions?
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More on GeoNetwork this week
State of GeoNetwork
GeoNetwork and a11y: Introducing accessibility in OSGeo applications

Where to learn and contribute
https://geonetwork-opensource.org/
https://github.com/geonetwork/core-geonetwork
https://gitter.im/geonetwork/core-geonetwork