A year with GeoNode in review
2020
2020 has been a busy year

Year: 2020, commits: 1317 (ongoing)
Year: 2019, commits: 1633
Year: 2018, commits: 1168
Year: 2017, commits: 1424
Year: 2016, commits: 510
Year: 2015, commits: 938
Year: 2014, commits: 1742
Year: 2013, commits: 2323
Year: 2012, commits: 2368
Year: 2011, commits: 807
Year: 2010, commits: 1282

1000+ Conversations @ gitter & Mailinglists

302 closed issues
951 closed PRs

Most discussed Issue: Enable spatial Datastore (GNIP 75)

Most wanted feature
Running multiple Instances with Docker (?)
Release 3.0 and 3.1 (2020)

- Let’s check what’s new in 3.0 and 3.1 release

- Check the bottom of each slide to see who sponsored a certain feature, who implemented it, and what version contains it
Upgrade to Python 3 and Django 2.2 (GeoNode 3)

- Important Security and performance fixes
- Support Python 3.7+ and Django 2.2.16
Upgrade to GeoServer 2.16.2 / 2.17.2

Improvements and Fixes
• Support for vector custom dimensions (in addition to time and elevation)
• Allow limiting the number of concurrent jobs in the importer extension
• Default style descriptions wording improvement (as they are visible in capabilities documents)
• The REST API fixes regarding datastore and feature type handling (see notes for details)
• Fixed 100% CPU usage at idle on data directories with tens of thousands of layers
• Don’t delay startup on an unresponsive cascaded WMS server
• Make GWC caching kick in also when using local workspaces along with non qualified layer names
• And various others!
• For more information check the 2.16.2 and 2.17.2 release notes.

Community Updates
✓ Backup & Restore
✓ OAuth2
✓ GeoFence
Internationalization and Documentation

✓ Internationalization has been improved, we have almost 90% coverage for 5 main languages
✓ Added languages: Portuguese / Spanish
✓ Completely revised and updated Documentation:

➢ GetFeatureInfo Templating For GeoNode
➢ HowTo: Geonode with QGIS
➢ Improve GeoNode OpenID SP Protocol in order to be able to provide access to external clients
➢ Document the use of slide show in themes
➢ Update Advanced Installation steps to work against Ubuntu 20.04LTS
➢ Update Advanced Installation steps to work against RHEL 7.x
➢ How to setup rabbitmq, supervisor and memcached in order to fully enable async workers
➢ How to Upgrade from 2.10.x / 3.0
MapStore2 Default Client

- Drop of GeoExt, with MapStore client as the new official one
MapStore2 Client Updates

✓ Save Search Services to the Map
✓ Save Map Preferences into the adapter model
✓ Advanced Style Editor with graphical UI
✓ Improved Map Save Widget, specific for GeoNode
Improve MapStore Styler Integration

- Current Styler is somewhat “poor”

- Widget based styler
- Vector data classifications
- Raster Data Classifications
- Well Known Markers
- Advanced Styling Options
Docker Improvements / GeoNode-Project Compose

 ✓ Docker Compose installation has been simplified a lot on GeoNode-Project
   https://docs.geonode.org/en/master/install/basic/index.html

 ✓ The setup is also usable for Geonode development or customization.

 ✓ **Built-in GeoNode Contribs and settings**
   https://github.com/GeoNode/geonode-contribs

 ✓ Check out the features with “Docker built-in” label.
   Those are now included into the Docker build automatically.
GeoNode Integrated Monitoring
Contrib Apps Promotion

✓ Favorites

EXIF support for Document Images

iwa_city_charges_test_wins

img_1771.jpg

GeoNode

Community

Community

3.0
Contrib Apps Promotion

- **Create Empty Layer**

  Create an empty layer

  - **Layer name**: TEST
  - **Layer title**: Test Empty Layer
  - **Geometry type**: Polygons

  ![Create Empty Layer Form]

- **WMS GetCapabilities for single Layers**

  ![WMS GetCapabilities Form]

  - **Title**: Test Empty Layer
  - **License**: Not Specified
  - **Abstract**: No abstract provided
  - **Publication Date**: June 7, 2019, 9:44 a.m.
  - **Type**: Vector Data
  - **Keywords**: features, test_1
  - **Regions**: Global
  - **Owner**: admin

  ![WMS GetCapabilities Document]

Docker built-in

GeoNode Community

Community

3.0
Contrib Apps Promotion

- Metadata XSL Renderer
- Original Dataset Download Link

Download Layer

Images | Data

Do you want to filter it?

Pick your download format:
- GeoJSON
- Excel
- CSV
- GML 3.1.1
- GML 2.0
- Zipped Shapefile
- Original Dataset

Community 3.0

Docker built-in
GeoNode Celery Beat and Workers

Table Of Contents
- Features
- Screenshots
- Installation
  - Usage
  - Configuration
  - Options
  - Task filtering
  - Task filter syntax
  - API Reference
  - Authentication
    - HTTP Basic Authentication
    - Google OAuth 2.0
    - GitHub OAuth
    - Running behind reverse proxy
    - Docker Usage
- Quick search

Flower 1.0.0 documentation

Flower - Celery monitoring tool

Flower is a web based tool for monitoring and administrating Celery clusters

Features
- Real-time monitoring using Celery Events
  - Task progress and history
  - Ability to show task details (arguments, start time, runtime, and more)
  - Graphs and statistics
- Remote Control
  - View worker status and statistics
  - Shutdown and restart worker instances
  - Control worker pool size and autoscale settings
  - View and modify the queues a worker instance consumes from
  - View currently running tasks
  - View scheduled tasks (ETA/countdown)
  - View reserved and revoked tasks
  - Apply time and rate limits
  - Configuration viewer
  - Reschedule or terminate tasks
- Broker monitoring
  - View statistics for all Celery queues
  - Queue length graphs
- HTTP API
  - Basic Auth, GitHub OAuth2 and Google OpenID authentication
GeoNode Analytics and Centralized Dashboard

Logstash Async

The World Bank
GeoSolutions
3.1
LDAP Authentication

- LDAP login
- Sync LDAP Group Membership

IGB  GeoSolutions  CSGIS
GeoNode and GeoFence Performance Optimizations

- Performance improvements and hardening to support a huge number of resources and maps, 10k+ layers!
- The possibility to activate **DELAYED SECURITY** signals in order to allow GeoNode and GeoFence align asynchronously
- **DB Stored Rules**

![Image of a map interface with options such as Data, Maps, About, Search, Register, Sign in, GeoNode, and GeoSolutions logos.](image-url)
Full Backup/Restore - Read only Mode

- Improved Backup/Restore Management Commands
- Stores the settings used along with the archive
- Now able to check \texttt{md5} and send notifications
- Automatically puts GeoNode in “Read-only mode”
- Docker built-in

Activate “Read only” and “Maintenance” modes from the Admin GUI
Geospatial Security Restrictions (Geo-Limits)
Remote Services Improvements

- Improved stability on harvesting
- Support for more endpoints, WMS, ArcGIS REST, GeoNode OWS APIs
- Allow GeoServer WMS CASCADE support for unsupported projections
- Import Legends and as much as metadata fields as possible
- Allows remote resource filtering and exposure to the catalogue
GetFeatureInfo Templating For GeoNode
TinyMce wysiwyg editor for metadata fields
Support for more media-types on documents
QGIS Desktop 3.x+ OAuth2 auth integration

RTL Support

- For RTL languages like Arabic
WFS-T GeoFence rules respect edit permissions

- Important when using GeoNode with QGIS
Revised/enhanced approval workflow

- The “unpublished” resources will be hidden to anonymous users only. The registered users will be still able to access the resources.
- The “unpublished” resources will remain hidden to users if the permission will be explicitly removed.
- During the upload, whenever the advanced workflow is enabled, the owner’s Groups are automatically allowed to access the resource, even if the “anonymous” flag has been disabled.
- During the upload, “managers” of the owner’s Groups associated to the resource, are always allowed to edit the resource, the same as they are admin for that resource.
- “managers” of the owner’s Groups associated to the resource are allowed to “publish” also the resources, not only to “approve” them.
Fixes and Improvements

✓ Well known 2.10 issues:
✓ Added "DOI" field to base metadata
✓ Extend resource search APIs with abstract and purpose fields
✓ Improved Remote Services and Metadata Fetch
✓ Improved Message Inbox and Messaging & Notification System
✓ Improved Thumbnails and Thumbnails Upload / edit before posting
✓ Improved Management Commands
✓ and many more…
Where do we go from here? 2021, 2022, ...
Integrated Workflow

- We lack the ability to execute a series of asynchronous actions as part of an upload

  - ✔ Decouple upload workflow from GeoNode

  - ✔ Make use of a workflow engine to expose upload APIs (e.g. [https://github.com/geosolutions-it/django-wfe](https://github.com/geosolutions-it/django-wfe))

  - ✔ Allow the users to define more complex upload workflows in order to perform (pre/post)-processing of geospatial datasets

    - Optimize GeoTIFFs before ingestion
    - Being able to provide DB storages connection params
    - ...

AlmavivA (?)  Thunen Institute (?) ...
API v2 REST pluggable module

- What if I want to consume GeoNode from third party apps or a SPA client?
  - A clean REST API for CRUD operations on GeoNode model would be nice!
  - Cleaner Authentication support - Oauth2 but also proper API keys management
  - OpenAPI 3.0 specification, for documentation and versioning
  - GNIP-79: GeoNode REST APIs (v2)
REST API based on DRF v2 (Tastypie, v1)
**Concept of a generic abstract “App” model**

- Manage and share “Geo Applications” similarly to the other GeoNode entities, such as Documents, Layers and Maps.

- Such Geo Applications could be any kind of object provided by a plugged in client library, which is not a Layer nor a Map. As an instance Dashboards, GeoStories, Charts, Geospatial Analysis and so forth.

- GNIP-78: GeoNode generic "Apps" model to include pluggable entities into the framework
GeoStory Integration

- GeoSpatial Storytelling in GeoNode
- MapStore Plugin
- Reuse GeoNode Layers and Resources to build Story
- Images, Video, Maps and so on
- Integrated visual editor
Single Page Application (SPA) for end users

- GeoNode GUI looks “oldish” and cluttered
- MapStore based with improved layout
- Simplified UI for end users
- Improved UX with a clear distinction between end users and back-office functionalities
- Visual and functional separation between catalogue and dataviz functionalities
- Improved organization of tools, layered on multiple visual levels, depending on the user profile (end user, data owner, administrator)
- Charts, dashboards and other dataviz tools as first citizens
GNIP: GeoNode 4 (24 August 2017)

- Django
- Minimal core
- Behavior Driven Development
- Fresh Start
- Web UI Framework Agnostic
- API First & API Gateway
- Support for multiple data providers

https://github.com/GeoNode/geonode-vision/blob/master/geonode-vision.md
GNIP: GeoNode 4 (December 2020)

- Fresh Start
- Web UI Framework Agnostic
  - API First & API Gateway
  - A Frontend based on Mapstore (Geosolutions)
  - A general blog like frontend (Thünen)
  - An Updated Version of GeoNode Django based Frontend with Bootstrap 4
  - Combine Docker compositions (SPX+main)
  - Remove QGIS Server, Leaflet Hookset, ... ?
  - Improved Testing with Circle CI
  - GeoApps & GeoStories
  - Clustering and High Availability
  - Improved/Modular Storage
  - Improve Upload/Download
- Let’s open the discussion
Thanks