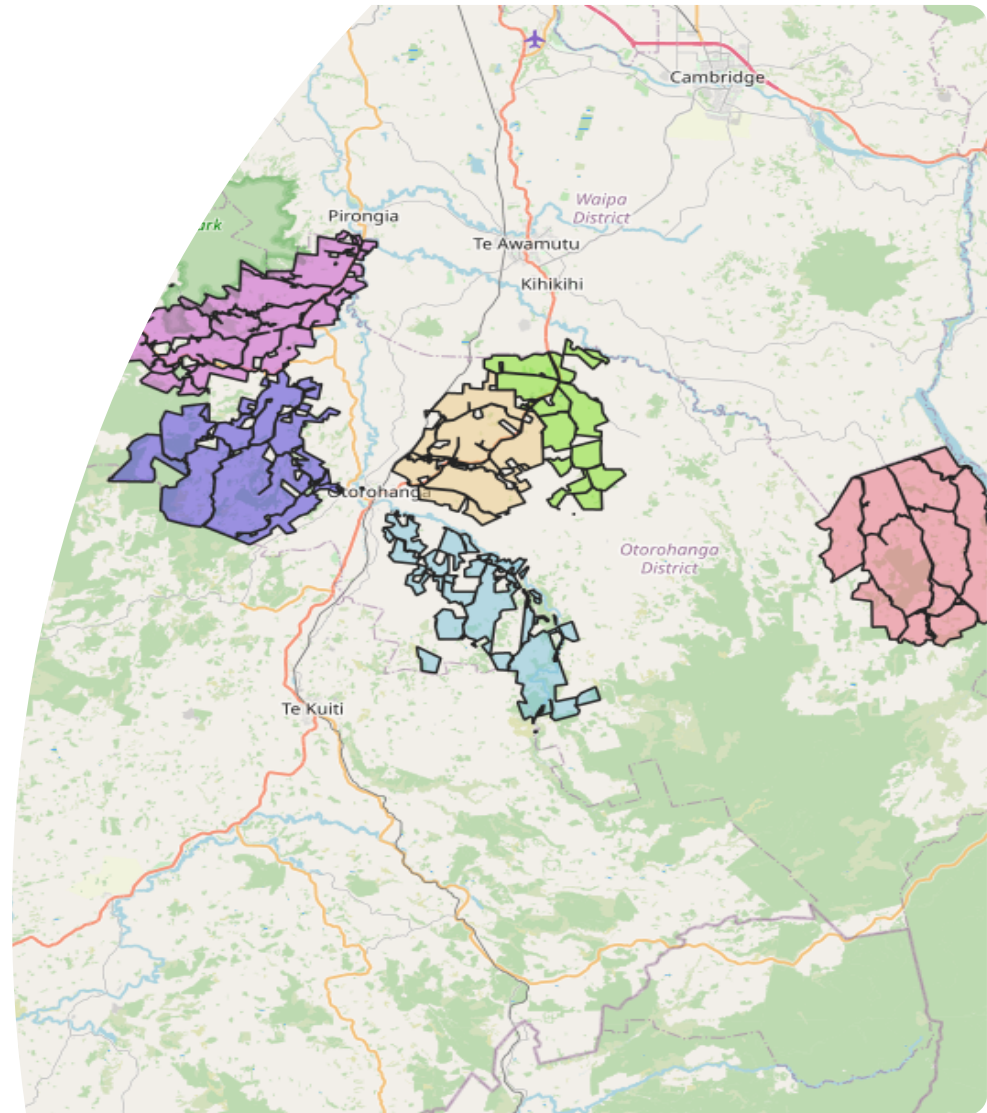


My first steps into free and open source software – GeoNode 3

Presented By Matthew Northcott



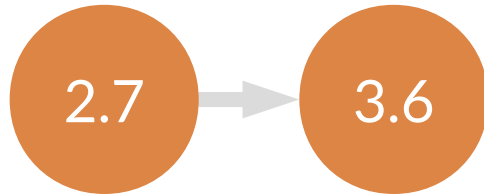
My Background

- No prior GIS experience
- FOSS user but no contributions
- BE(Hons) – Computer Engineering



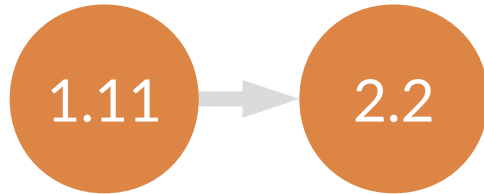
How did I get started?

The Task



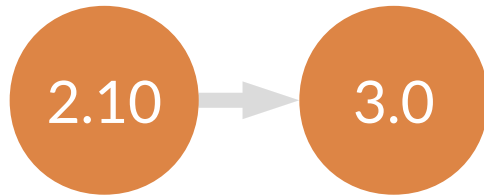
Upgrade Python

From version 2.7 to 3.6+



Upgrade Django

From version 1.11 to 2.2+



Upgrade GeoNode

From version 2.10 to 3.0

Process



Dependencies

Seek out and update external dependencies to cross-compatible versions



Core Modules

Upgrade GeoNode's internal core modules to be Python 3 compliant



Bug-fixing

Apply patches to fix issues introduced during upgrade of dependencies and core modules

GeoNode 3.0 and 2.10.4 are out!



This Post is gonna kick things off by summarizing the latest releases 2.10.4 and GeoNode 3.

Yeah, you understood correctly, there is a new major version out now. However, let's start at the beginning.

With the life of Python 2.7 ending in 2020 — it is a matter of course: GeoNode needing an overhaul for python 3 compatibilities.

To stick with clarity and precision, the development team has decided to give the new child a name as major version: GeoNode 3 was born!

Alongside a lot of helping hands inside our community, two major contributors took the challenge in doing the main work on the Code Base of GeoNode 3. Namly Geosolutions (Italy) and Catalyst (New Zealand). The latter being a relatively new contributor — concerning our community, and we'd love to see more contributions!

Both releases fix several *minor*, *major* and *security* issues. Further GeoNode 3 brings several new features you should not miss!

★ Features GeoNode 3

- Python upgrade 3.7+
- Django upgrade 2.2.12
- GeoServer upgrade 2.16.2
- Moved Documentation to dedicated repository and build
- Integration of MapStore as new map viewer/composer
- Drop of GeoExt, with MapStore client as the new official one
- [Local analytics/monitoring extension](#)

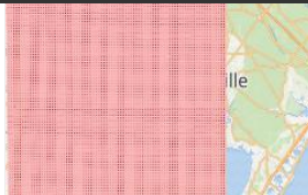
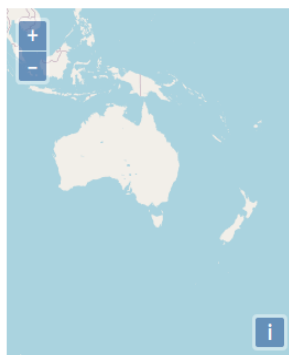
**GeoNode 3.0
Release:
18 May 2020**

Integration with OpenStack

- Improvement to GeoNode by adherence to the Django file storage API
- Allows use of the `django-storage-swift` Django app
- Use to store static files, user uploads etc.




A Final Problem

[Raster Layer](#) 386
[Vector Layer](#) 1983
[Vector Temporal Serie](#) 13
[Remote Layer](#) 294
[CATEGORIES](#)
[RESPONSIBLE](#)
[GROUPS](#)
[GROUP CATEGORIES](#)
[DATE](#)
[REGIONS](#)
[EXTENT](#)








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 salsone  16 Nov 2020  9  0  0  Create a Map

The 'Search by extent' feature

Search By Extent

- A feature to filter content by area on the world map
- Content area specified by a bounding box of four coordinate pairs



Search By Extent

- Fetching content by bounding box is not ideal – relies on custom queries performed by Django
- PostGIS provides functions to query based on polygon
- Replace all bounding box references to PolygonField types



My Thoughts on Open Source

Contributing to Open Source



Documentation

Wiki pages, readme, doc strings, comments



Procedures

Contributor's agreement, pull requests, issues



Code Quality

Structure, coupling, conventions



Application

Background knowledge, context – e.g. GIS

It can be far more difficult to get started if a project is lacking in any of these areas (with the exception of 'Application')

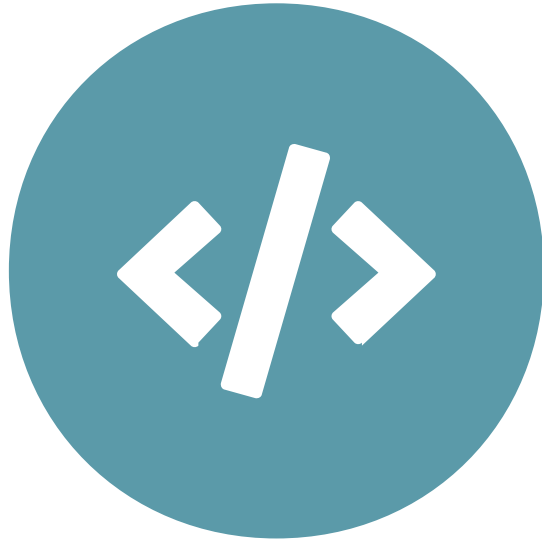
Documentation

- One location
- Categorised
- Link important documentation in the repository readme
- 'How to Contribute' section at beginning
- Include FAQs
- Describe repository structure





```
$ find . -type f -name "*.py" -exec wc -l {} + | sort -n -k 1 | tail -n 10
1475 ./geonode/layers/tests.py
1612 ./geonode/security/tests.py
1756 ./geonode/layers/views.py
1941 ./geonode/base/models.py
1954 ./geonode/monitoring/models.py
2108 ./geonode/settings.py
2181 ./geonode/utils.py
2271 ./geonode/geoserver/helpers.py
2727 ./geonode/monitoring/tests/integration.py
96746 total
```



Code Quality


```

1614 def set_resource_default_links(instance, layer, prune=False, **kwargs):
1615
1616     from geonode.base.models import Link
1617     from django.urls import reverse
1618     from django.utils.translation import ugettext
1619
1620     # Prune old links
1621     if prune:
1622         logger.debug(" -- Resource Links[Prune old links]...")
1623         _def_link_types = (
1624             'data', 'image', 'original', 'html', 'OGC:WMS', 'OGC:WFS', 'OGC:WCS')
1625         Link.objects.filter(resource=instance.resourcebase_ptr, link_type__in=_def_link_types).delete()
1626         logger.debug(" -- Resource Links[Prune old links]...done!")

```



```

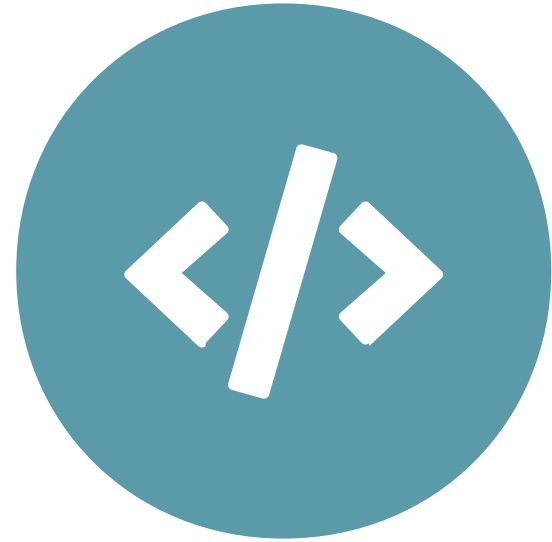
2060     legend_url = urljoin(base_url, legend_url)
2061     Link.objects.update_or_create(
2062         resource=instance.resourcebase_ptr,
2063         name='Legend',
2064         defaults=dict(
2065             extension='png',
2066             url=legend_url,
2067             mime='image/png',
2068             link_type='image',
2069         )
2070     )

```

set_resource_default_links
456 lines

Code Quality

- Comment complex sections, functions, classes
- Accomplish one task per function
- Each unit should work on its own
- Multiple repositories where appropriate



Procedures

- Make a demo available in one command
- Use one communication platform and document how to access it
- Use pull request and issue templates for consistency
- Define a code review process and document it



Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#).


base repository: GeoNode/geonode

base: master

head repository: mtnorthcott/geonode

compare: readme-doc-link

✓ **Able to merge.** These branches can be automatically merged.



Update README.md with link to official documentation

Write

Preview

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<Include a few sentences describing the overall goals for this Pull Request>

Checklist

> Reviewing is a process done by project maintainers, mostly on a volunteer basis. We try to keep the overhead as small as possible and appreciate if you help us to do so by completing the following items. Feel free to ask in a comment if you have troubles with any of them.

For all pull requests:

- [] Confirm you have read the [contribution guidelines](https://github.com/GeoNode/geonode/blob/master/CONTRIBUTING.md)
- [] You have sent a Contribution Licence Agreement (CLA) as necessary (not required for small changes, e.g., fixing typos in the documentation)
- [] Make sure the first PR targets the master branch, eventual backports will be managed later. This can be ignored if the PR is fixing an issue that only happens in a specific branch, but not in newer ones.

The following are required only for core and extension modules (they are welcomed, but not required, for contrib modules):

- [] There is a ticket in https://github.com/GeoNode/geonode/issues describing the issue/improvement/feature (a notable exemption is, changes not visible to end-users)
- [] The issue connected to the PR must have Labels and Milestone assigned
- [] PR for bug fixes and small new features are presented as a single commit
- [] Commit message must be in the form "[Fixes #<issue_number>] Title of the Issue"
- [] New unit tests have been added covering the changes, unless there is an explanation on why the tests are not necessary/implemented
- [] This PR passes all existing unit tests (test results will be reported by travis-ci after opening this PR)
- [] This PR passes the QA checks: flake8 geonode
- [] Commits changing the ****settings****, ****UI****, ****existing user workflows****, or adding ****new functionality****, need to include documentation updates

****Submitting the PR does not require you to check all items, but by the time it gets merged, they should be either satisfied or attached to the PR as a comment.****

Attach files by dragging & dropping, selecting or pasting them.

☒ Allow edits and access to secrets by maintainers ⓘ

Create pull request

Helpful resources

[Contributing](#)
[Code of conduct](#)
[GitHub Community Guidelines](#)

Pull request templates

ⓘ Remember, contributions to this repository should follow its [contributing guidelines](#) and [code of conduct](#).

Reflection

Thanks for Listening

Special thanks to the help of @afabiani and @GeoTob throughout this experience



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