An Evolving Worldview: Making Open Source Easy

Zachary Rice (Zachary.Rice@nasa.gov)
ASRC Federal, NASA Goddard Space Flight Center, Greenbelt, MD

Abstract: NASA Worldview is an interactive interface for browsing full-resolution, global satellite imagery. Worldview supports an open data policy so that academia, private industries and the general public can use NASA’s satellite data to address Earth science related issues. Worldview was open sourced in 2014. By shifting to an open source approach, the Worldview application has evolved to better serve end-users. Project developers are able to have discussions with end-users and community developers to understand issues and develop new features. New developers are able to track upcoming features, collaborate on them and make their own contributions.

Getting new developers to contribute to the project has been one of the most important and difficult aspects of open sourcing Worldview. A focus has been made on making the installation of Worldview simple to reduce the initial learning curve and make contributing code easy. One way we have addressed this is through a simplified setup process. Our setup documentation includes a set of prerequisites and a set of straightforward commands to clone, configure, install and run. This presentation will highlight key development issues in the project, how we plan to implement them and make the code open.

What is NASA Worldview?

NASA Worldview is an interactive interface for browsing full-resolution, global satellite imagery. Worldview supports an open data policy so that academia, private industries and the general public can use NASA’s satellite data to address Earth science related issues. Worldview was open sourced on GitHub.com in 2014.

Benefits & Challenges of Open Sourcing Worldview

Benefits

• Collaborate with individuals outside NASA
• Share tools with people & teams in NASA
• Work closer with our 3rd party dependencies
• Allow others to setup the application in new ways
• Bug fixes can be found and addressed quickly
• Collaboration enforces standards to be adopted

Challenges

• Getting new developers to work on project
• Code can become messy with lots of developers
• Reviewing newly submitted code takes a lot of time
• Risk of leaking sensitive organizational information
• Vulnerabilities are easy to identify when code is open

Make Worldview’s Open Source Code Easy!

1. Make Installation Quick and Easy
2. Showcase Upcoming Features
3. Clearly Label Issues to Work On
4. Document the Code
5. Automatic Code Checks

- Goals and future vision can become obscured
- Confusion about certain aspects of the code
- Differing opinions about coding standards
- Converting from closed-source can be tedious
- Management may not understand open-source
- Deciding who works on what and when

When a developer decides to start working on a feature, it is important they work in line with our standards. In addition to documentation and coding standards, we have implemented forms to get a feature or error when developing code. This makes a developer see an error right away without having to reference coding standard documents or perform frequent inspections.

Most modern web applications will pick up feature flags and display errors and warnings that can be defined in code.

Conclusion: open-source is a powerful tool and we have implemented forms to get a feature or error when developing code. This makes a developer see an error right away without having to reference coding standard documents or perform frequent inspections.

What is NASA Worldview?

NASA Worldview is an interactive interface for browsing full-resolution, global satellite imagery. Worldview supports an open data policy so that academia, private industries and the general public can use NASA’s satellite data to address Earth science related issues. Worldview was open sourced on GitHub.com in 2014.