Polyphemus

Automated Builds and
Test from GitHub

Collaborators

- Anthony Scopatz (me)
- Zach Welch
- Matthew Gidden
- Paul Wilson

All from Prof. Wilson's group in Engineering Physics at UW-Madison.

Premise

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"If I can't get my code to run everywhere now, what hope do I have 6 months from now?"

Rage Against the Machine

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We are not a software developers;
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We need a tool to identify issues long before they cause problems.

So What Do...

… real software developers do to end this contiguous infuriation?

Continuous Integration

"Continuous Integration is a software development practice where members of a team integrate their work frequently, usually each person integrates at least daily - leading to multiple integrations per day. Each integration is verified by an automated build (including test) to detect integration errors as quickly as possible. Many teams find that this approach leads to significantly reduced integration problems and allows a team to develop cohesive software more rapidly."

- Martin Fowler

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Travis

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Desire

Enter: Polyphemus

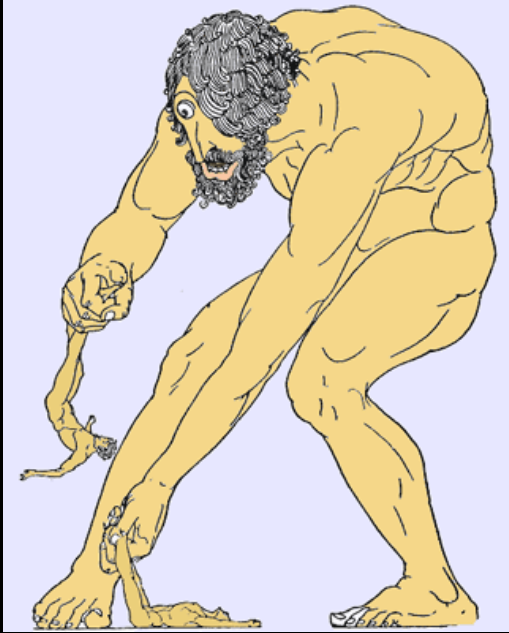

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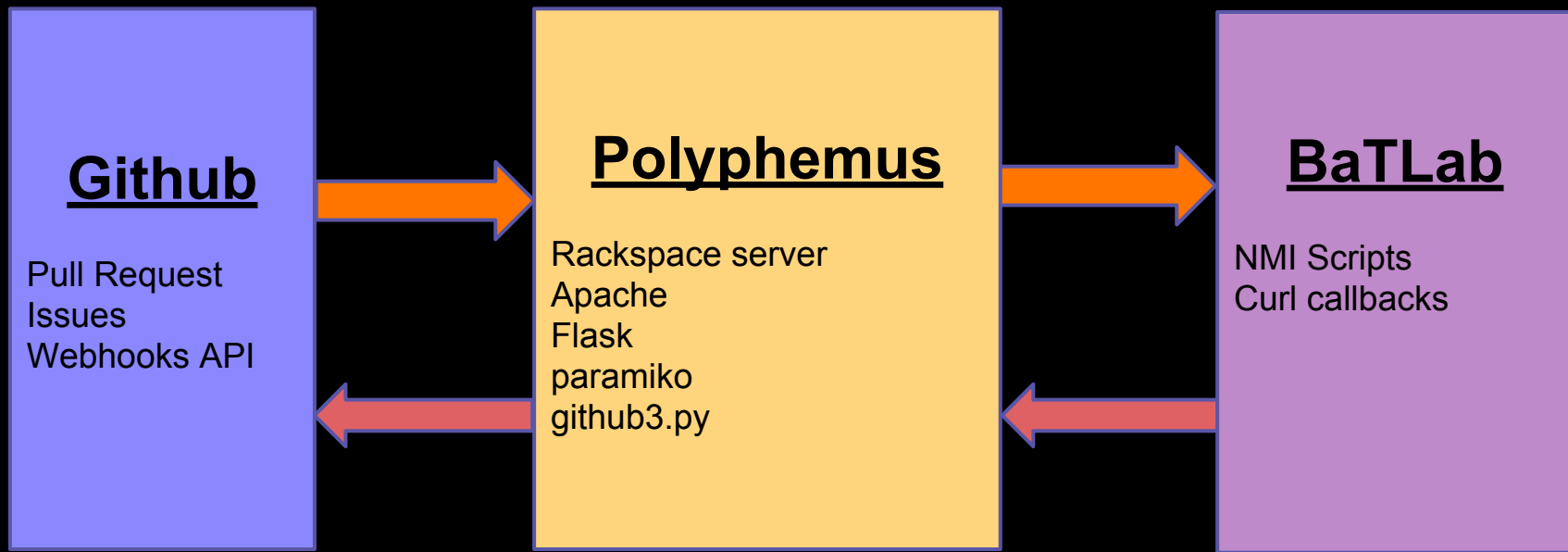- CI service that
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Remember to BYO Server.

Github

Pull Request
Issues
Webhooks API

Polyphemus

Rackspace server
Apache
Flask
paramiko
github3.py

BaTLab

NMI Scripts
Curl callbacks

Polyphemus Top-Level Architecture

Polyphemus Run Control

```python
server_name = server_url = 'cyclus-ci.fuelcycle.org'
port = 80
log_dir = '/root/polyphemusrc'

# GitHub setting
github_owner = 'cyclus'
github_repo = 'cyclus'
github_user = 'cyclus-ci'
github_credentials = '/root/polyphemusrc/gh.cred'

# BaTLab setting
batlab_user = 'cyclusci'
batlab_scripts_url = 'https://github.com/cyclus/ciclus/archive/master.zip'
batlab_fetch_file = 'fetch/cyclus.git'
batlab_run_spec = 'cyclus.fast.run-spec'
batlab_submit_cmd = './submit.sh'
batlab_jobs_cache = '/var/www/cyclus-ci.fuelcycle.org/jobs.cache'
```

polyphemusrc.py

The user has to provide a...

- BaTLab account
- NMI Scripts
- Github account
- Target Github repository
- Server for polyphemus
- polyphemusrc.py

The user gets in return...

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- a dashboard
- Customizability & Extensibility

Polyphemus is Suite of Plugins

Users may write their own plugins and add them to the rc file.

```python
from polyphemus import plugins

class Plugin(plugins.Plugin):
    requires = ()
    defaultrc = {}
    rcupdaters = {}
    rcdocs = {}
    route = None
    request_methods = ('GET',)

    def update_argparser(self, parser): pass
    def setup(self, rc): pass
    def response(self, rc):
        return "\n", None
    def execute(self, rc): pass
    def teardown(self, rc): pass
    def report_debug(self, rc): pass
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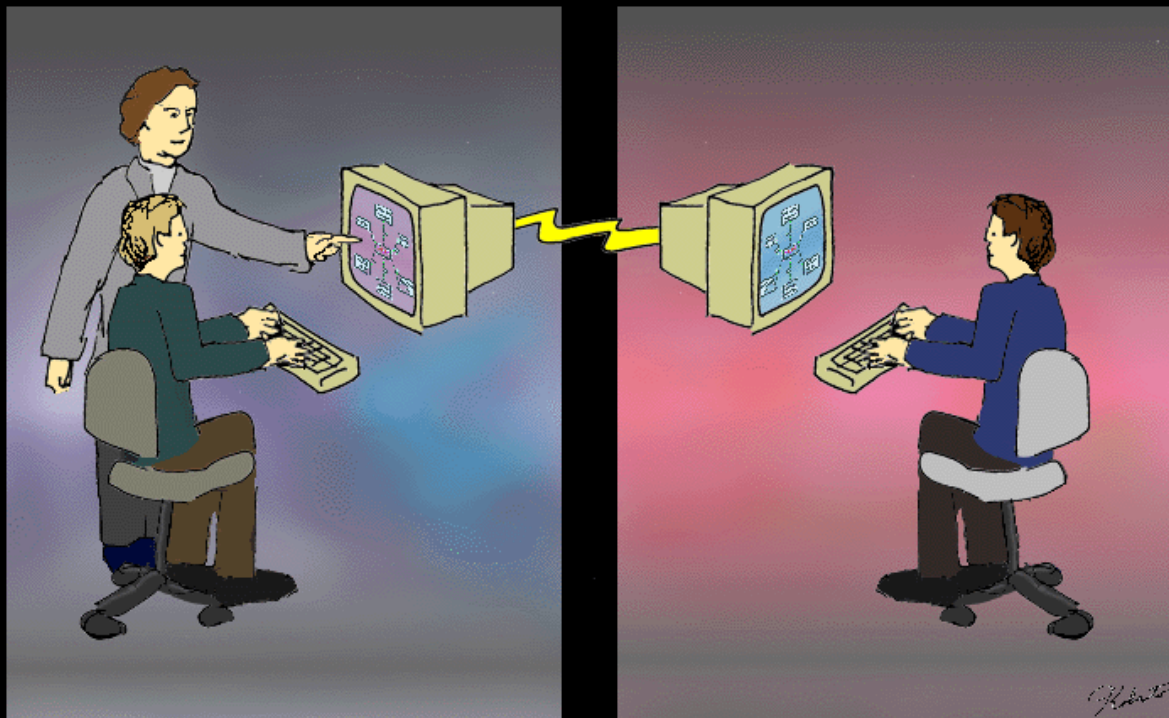
Live Demo

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- Breakdown
  - Success: 1006
  - Failed: 351
  - Removed: 134
  - Other: 5

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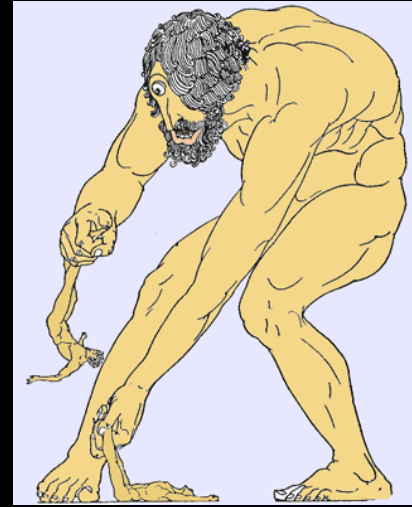- Ansible / Chef Deployment

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- Bitbucket Support
- Mercurial Support
- More Analytics
- More Users & Developers
- Ansible / Chef Deployment
- Packager for Scientific Computing

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~ ONE EYE MAKES FOR SHALLOW BUGS ~