Continuous testing with Molecule, Ansible, and GitHub Actions

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The earlier you catch defects, the cheaper they are to fix

David Farley



`whoami`

Jeff Geerling (geerlingguy)

- Ansible user since 2012
- Wrote a book: Ansible for DevOps
- Writing another book: Ansible for Kubernetes
- OSS maintainer:
 - 200+ projects
 - 27,000 stars
 - 14,000 forks





Molecule and GitHub Actions Cl

The example used in this presentation is based on an example in chapter 13 of Ansible for DevOps, which you can get at www.ansiblefordevops.com



```
- hosts: all
                    become: true
                    handlers:
                      - name: restart apache
                        service:
              8
                          name: httpd
              9
                          state: restarted
             10
                    tasks:
             11
             12

    name: Ensure Apache is installed.

             13
                        package:
             14
                          name: httpd
             15
                          state: present
             16
             17
                      - name: Copy a web page.
             18
                        copy:
             19
                          content:
                             <html>
             20
             21
                             <head><title>Hello world!</title></head>
             22
                             <body>Hello world!</body>
             23
                            </html>
             24
                          dest: "/var/www/html/index.html"
             25
                          mode: 0664
             26
                        notify: restart apache
             27
                      - name: Ensure Apache is running and starts at boot.
             28
             29
                        service:
                          name: httpd
AnsibleFest
             31
                          state: started
             32
                          enabled: true
                                                                              ...........
```

Set up Molecule

(In Playbook directory)

1. Install Molecule:

pip3 install molecule[docker]

2. Create a default scenario:

molecule init scenario

3. Modify the scenario to run this playbook.



molecule/default/molecule.yml

```
dependency:
      name: galaxy
    driver:
      name: docker
     lint: |
      set -e
      yamllint .
      ansible-lint
10
    platforms:
11
      - name: instance
         image: geerlingguy/docker-centos8-ansible:latest
12
13
        command:
14
        volumes:
           - /sys/fs/cgroup:/sys/fs/cgroup:ro
16
        privileged: true
        pre_build_image: true
18
    provisioner:
      name: ansible
19
    verifier:
20
21
      name: ansible
```



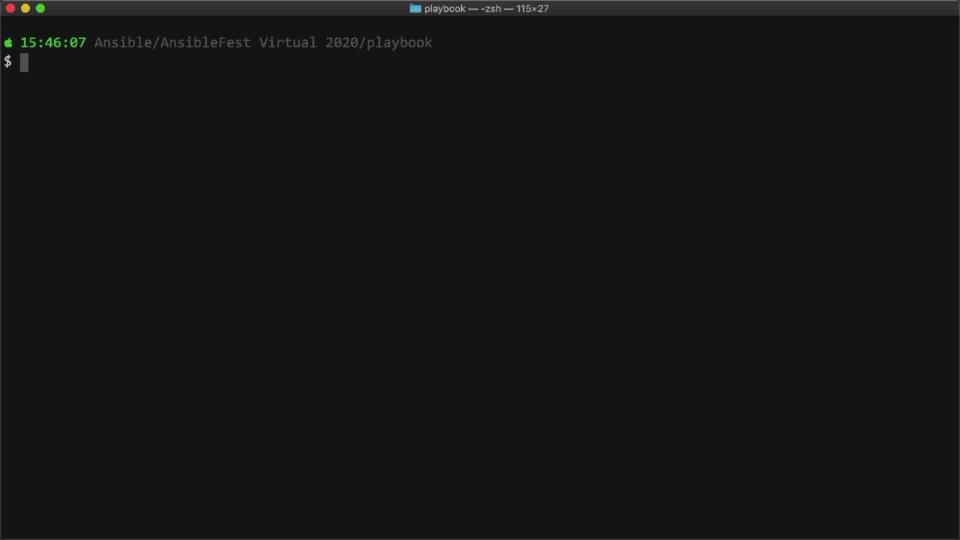
molecule/default/converge.yml

```
1 ---
2 - name: Converge
3 | hosts: all
4
5 - import_playbook: ../../main.yml
```



molecule/default/verify.yml





GitHub Actions Integration



Set up GitHub Actions

(In Playbook directory)

1. Create a GitHub 'workflows' directory:

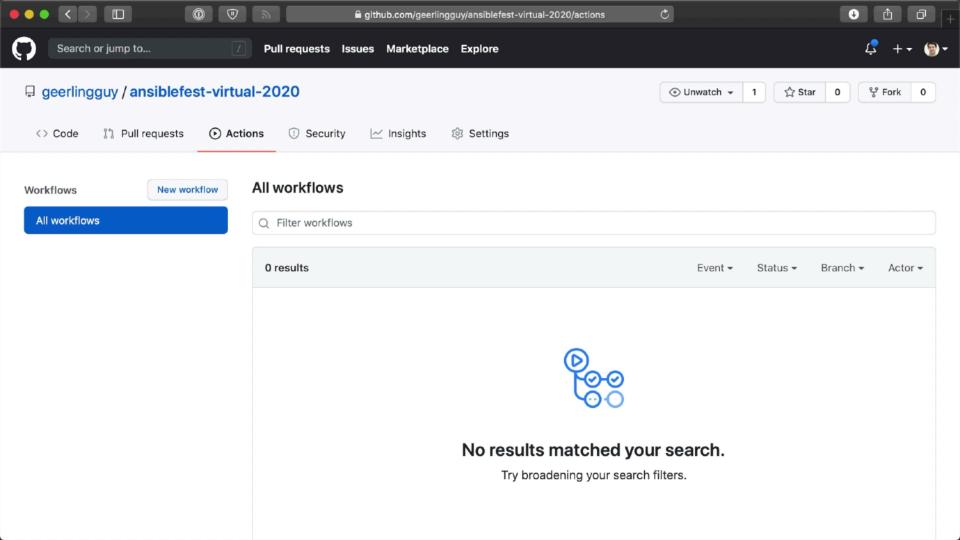
mkdir -p .github/workflows

2. Create a CI workflow:

touch .github/workflows/ci.yml



```
name: CI
                     'on':
                       pull_request:
                       push:
                         branches:
                           - master
                8
                     jobs:
               10
               11
                       test:
               12
                         name: Molecule
               13
                         runs-on: ubuntu-latest
               14
               15
                         steps:
               16
                           - name: Check out the codebase.
               17
                             uses: actions/checkout@v2
               18
               19
                           - name: Set up Python 3.
               20
                             uses: actions/setup-python@v2
               21
                             with:
                               python-version: '3.x'
               22
               23
               24
                           - name: Install test dependencies.
               25
                             run: pip3 install molecule[docker] yamllint ansible-lint
               26
                           - name: Run Molecule tests.
               27
               28
                             run: molecule test
                             env:
AnsibleFest
               30
                               PY_COLORS: '1'
               31
                               ANSIBLE_FORCE_COLOR: '1'
                                                                                          ......
```



Complete Example is on GitHub

Also includes example of testing on two different operating systems:

https://github.com/geerlingguy/ansible-for-devops/tree/master/molecule



#DevOpsHaiku

It's impossible to maintain many projects without good CI

Jeff Geerling



Thank you

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