Tox

Overview

`Tox` aims to automate and standardize testing in Python. It is part of a larger vision of easing the packaging, testing and release process of Python software. It would be wise to utilize **tox** with Molecule.

Pre-Reqs

1. Python
2. Python pip

```
3. pip install --upgrade setuptools
```

Installation

```
pip install --upgrade tox
```

Important File Locations

File Location	Purpose
./tox.ini	Tox test configuration file
./.tox/	Directory that stores tox test information

Example tox.ini

```ini
[tox]
minversion = 1.8
envlist = py{27}-ansible{20,21,22}
skipsdist = true

[flake8]
ignore = E501

[testenv]
passenv = *
deps =
    python-vagrant
    molecule
    ansible20: ansible==2.0.2.0
    ansible21: ansible==2.1.2.0
    ansible22: ansible==2.2.0.0
commands =
    molecule converge
    molecule verify
 molecule idempotence
```

Usage

Display help

```
tox --help
```

Quickly setup a new tox project

```
tox-quickstart
```

Display factor generated tox test environments

```
tox -l
```

```
phil at laptappy in /opt/work-repos/ansible/ansible-role-stunnel on master
$ tox -l
py27-ansible20
py27-ansible21
py27-ansible22
```

Run tox

This loads in the configuration from ./tox.ini

```
tox
```

```
phil at laptappy in /opt/work-repos/ansible/ansible-role-stunnel on master
$ tox
py27-ansible22 installed:
ansible==2.2.0.0,ansible-lint==3.4.8,anyconfig==0.7.0,arrow==0.10.0,binary
ornot==0.4.0,cffi==1.9.1,chardet==2.3.0,click==6.7,colorama==0.3.7,co
nfigparser==3.5.0,cookiecutter==1.4.0,cryptography==1.7.1,enum34==1.1.6,fl
ake8==3.0.4,future==0.16.0,idna==2.2,ipaddress==1.0.18,Jinja2==2.8,jinja2-
time==0.2.0,MarkupSaf
e==0.23,mccabe==0.5.3,molecule==1.17.3,paramiko==2.0.2,pbr==1.10.0,pexpect
==4.2.1,poyo==0.4.0,ptyprocess==0.5.1,py==1.4.32,pyasn1==0.1.9,pycodestyle
==2.0.0,pycparser==2.
17,pycrypto==2.6.1,pyflakes==1.2.3,pytest==3.0.5,python-dateutil==2.6.0,py
thon-vagrant==0.5.14,PyYAML==3.12,sh==1.11,six==1.10.0,tabulate==0.7.5,tes
tinfra==1.4.5,whichcr
aft==0.4.0
py27-ansible22 runtests: PYTHONHASHSEED='102349584'
py27-ansible22 runtests: commands[0] | molecule verify
--> Executing ansible-lint...
--> Executing flake8 on *.py files found in ./test/testinfra/...
--> Executing testinfra tests found in ./test/testinfra/...
============================ test session starts
=============================
platform linux2 -- Python 2.7.12, pytest-3.0.5, py-1.4.32, pluggy-0.4.0 --
/opt/work-repos/ansible/ansible-role-stunnel/.tox/py27-ansible22/bin/pytho
n2.7
cachedir: .cache
rootdir: /opt/work-repos/ansible/ansible-role-stunnel, inifile:
plugins: testinfra-1.4.5
collected 17 itemss
```

```
test/testinfra/test_redis_client.py::test_runs_only_on_server_[ansible://c
entos-7-stunnel-1] PASSED
test/testinfra/test_redis_client.py::test_redis_stopped_and_disabled[ansib
le://centos-7-stunnel-1] PASSED
test/testinfra/test_redis_client.py::test_command_output[ansible://centos-
7-stunnel-1] PASSED
test/testinfra/test_redis_server.py::test_runs_only_on_server_[ansible://c
entos-7-stunnel-2] PASSED
test/testinfra/test_redis_server.py::test_redis_running_and_enabled[ansibl
e://centos-7-stunnel-2] PASSED
test/testinfra/test_redis_server.py::test_config_file[ansible://centos-7-s
tunnel-2] PASSED
test/testinfra/test_redis_server.py::test_config_file_bind[ansible://cento
s-7-stunnel-2] PASSED
test/testinfra/test_redis_server.py::test_socket_listening[ansible://cento
s-7-stunnel-2] PASSED
test/testinfra/test_redis_server.py::test_command_output[ansible://centos-
7-stunnel-2] PASSED
test/testinfra/test_packages.py::test_packages_are_installed[ansible://cen
tos-7-stunnel-1-stunnel] PASSED
test/testinfra/test_packages.py::test_packages_are_installed[ansible://cen
tos-7-stunnel-1-redis] PASSED
test/testinfra/test_packages.py::test_packages_are_installed[ansible://cen
tos-7-stunnel-1-policycoreutils-python] PASSED
test/testinfra/test_packages.py::test_packages_are_installed[ansible://cen
tos-7-stunnel-2-stunnel] PASSED
test/testinfra/test_packages.py::test_packages_are_installed[ansible://cen
tos-7-stunnel-2-redis] PASSED
test/testinfra/test_packages.py::test_packages_are_installed[ansible://cen
tos-7-stunnel-2-policycoreutils-python] PASSED
test/testinfra/test_stunnel.py::test_stunnel_running_and_enabled[ansible:/
/centos-7-stunnel-1] PASSED
test/testinfra/test_stunnel.py::test_stunnel_running_and_enabled[ansible:/
/centos-7-stunnel-2] PASSED

=========================== pytest-warning summary
===========================
```

```
WP1 None Module already imported so can not be re-written: testinfra
================ 17 passed, 1 pytest-warnings in 12.70 seconds
=================
```

References

https://tox.readthedocs.io/en/latest/

http://www.slideshare.net/ioggstream/tox-as-project-descriptor

http://www.axelspringerideas.de/blog/index.php/2016/08/16/continuously-delivering-infrastructure-part-1-ansible-molecule-and-testinfra/