Introduction to Ansible

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Introduction

What is Ansible?

- A “radically simple IT automation platform”
- Describe the intended system state using playbooks written in YAML
- Requires no agent on the managed machine, only a Python interpreter and an SSH server

Installation

- `brew install ansible`
- Or clone devel from GitHub
  - Doesn't work in virtualenv*; source `hacking/env-setup` to run out of your clone
  - Or, if you're crazy like me, maybe see PR #6690
- `brew install cowsay`

* Ansible does more than virtualenv realistically supports, so this is not Ansible's issue

Ad-hoc configuration

```
$ cat >hosts
[cowsay-servers]
hostname.example.com
^D
$ ansible cowsay-servers -i hosts -m yum \
                         -a 'name=cowsay state=present'
[[ ANSIBLING INTENSIFIES ]]
$ ssh hostname.example.com cowsay moo
 ______
< moo >
 ------
        \   ^__^
         \  (oo)\_______
            (__)\       )\/\
                ||----w |
                ||     ||
```

Playbooks

- Consolidate tasks and configuration knobs into a single YAML file

- Support templating—both in playbooks and in file templates—by way of Jinja2

- Can be one file, or split up into many roles (more later!)

CAAP

(cowsay as a playbook)

```
---
- hosts: cowsay-servers

  sudo: yes

  tasks:

    # install the cowsay package to
    # provide cow-saying services

    - name: install cowsay
      yum: name=cowsay state=present
```

Running a playbook

- `ansible-playbook playbook.yml`
- `-i` to specify a local inventory file (e.g. `hosts`)
- `-k` if you have to enter a password for this run
  - Use authorized_key to install an SSH key for future runs

Real examples

(cows not included)

One-command development target

What I’m doing

- octothorpe requires a Linux VM for development, as Asterisk *really* isn’t too fond of OS X

- I don’t want to maintain and publish an actual VM of my own

- Given a CentOS box and Digium’s RPM repository, build a box on `vagrant up`

How I did it

- Kept in etc/playbook.yml
- Uses Yum repository bootstrapping for EPEL, Digium repositories
- Links /etc/asterisk to work directory's etc/asterisk
- Sets up Asterisk to restart (and thus load its config) when /vagrant is mounted
- Linked into Vagrantfile

Physical test boxes

What I’m doing

- Capacity and physical telephony testing usually requires us to build out a box from our stack of hardware
- Don’t want to put disks in and hand-hold a basic Asterisk installation every time
- PXE installation option to install standard CentOS
- Run Ansible playbook to configure Asterisk and pre-install some Python developer tools

How I did it

- Break down the job into several roles
- After installing a box, edit the local inventory to reference the boxes we want to set up
- Run the playbook on all boxes simultaneously
- Start plugging in the wires and running tests

Same box local and in the cloud

What I’m doing

- Iterating on www.zigg.com
- Want to develop the box locally using Vagrant, iterating using `vagrant provision`
- Once happy, push the result up to DigitalOcean

How I did it

- Do the majority of the work in roles (“www” only for now)
- Two playbooks contain only the Vagrant- and DigitalOcean-specific bits, pulling in the www role
- www role depends on common role, which handles server setup
- Use ansible_python_interpreter to use the virtualenv python for dopy

How I did it

- Unfortunately, DO provisioning right now requires frequent editing of the DO playbook

- Current digital_ocean requires ids because DO API does; hope to use slugs in the future with DO API 2.0

Discussion

```
 ________________________________________
< Thanks for being such a great audience! >
 ----------------------------------------
        \   ^__^
         \  (oo)\_______
            (__)\       )\/\
                ||----w |
                ||     ||
```

–me | cowsay