#ANSIBLEFEST2019

Ansible and Buildah can create your container images

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/who Tomáš Tomeček

- Principal Software Engineer @ Red Hat
- Team lead
- RHEL, Fedora, Containers, Automation and Integration
- I # free & open source software
- Ansible manages all my laptops, servers and container images

What's Ansible?

What's Ansible?

• Oh, wait. This is AnsibleFest.

What's Buildah?

A tool to build container images.



Buildah

• Can build container images from dockerfiles.

```
$ buildah bud .
STEP 1: FROM busybox
STEP 2: RUN ls
total 16K
bin dev etc home proc root sys tmp usr var
STEP 3: COPY ./README.md /
STEP 4: CMD /entrypoint.sh
```

Buildah (cont'd)

Or you can script the build process yourself.

```
# buildah from fedora:30
fedora-working-container

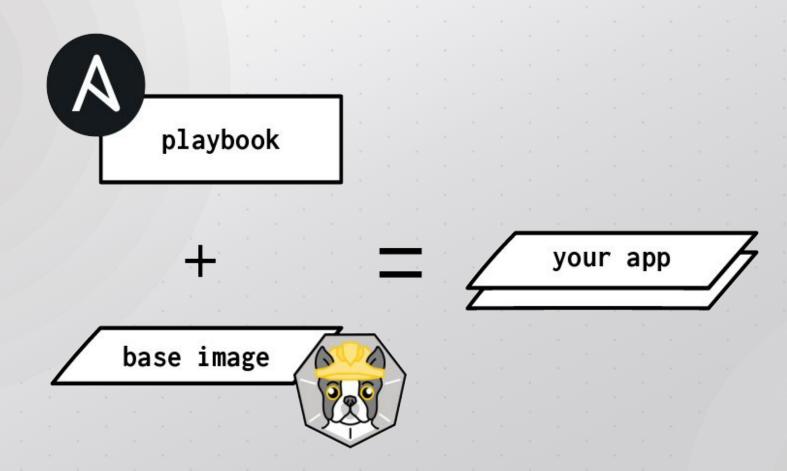
# export CONTAINER_FS=$(buildah mount)
# cp $FILES $CONTAINER_FS/my-path/

# buildah run fedora-working-container dnf install httpd
```

Buildah (cont'd)

Or from scratch.

```
# buildah from scratch
# export CONTAINER FS=$(buildah mount)
# 1s -1ha $CONTAINER FS
total 0
drwx----. 2 root root 6 Sep 16 09:08 .
drwx----. 6 root root 69 Sep 16 09:08 ..
# dnf install --installroot=$CONTAINER FS systemd bash
```



Why should you care?

- Ansible can take care of your container images, not just infra.
- Using Ansible to define an image instead of a bash script.
- You can recycle your playbooks and roles.
- Ansible playbooks are YAML.
- Build the way you want.

How Ansible and Buildah work together?

Ansible connection plugins.

```
$ ansible-playbook -vvvvvv -c buildah ...
TASK [Gathering Facts] ********************
<buildah-container> RUN [b'buildah', b'mount', b'--',
b'buildah-container']
MOUNTPOINT b'/var/lib/cont.../89e0b96a0fa4651a87e7931...
<buildah-container> RUN [b'buildah', b'run', b'--',
b'buildah-container', ...
```

Let's give it a shot

```
$ buildah pull $BASE IMAGE
$ buildah from --name $CONT NAME $BASE IMAGE
$ printf "$CONT NAME \
    ansible connection=buildah \
    ansible python interpreter=/usr/bin/python3" >inventory-container
$ ansible-playbook -i inventory-container -c buildah ./recipe.yaml
$ buildah commit --cmd '/entrypoint.sh' $CONT NAME my-fancy-image
$ buildah rm $(CONT NAME)
```

Someone could automate that

ansible-bender

- github.com/ansible-community/ansible-bender
- Bends containers. And it's shiny.

ansible-bender (cont'd)

- Ansible playbooks define the container image content.
- Image metadata as Ansible vars.
- Builds as first-class citizens.
- Can move images to registry, file, dockerd...
- Configurable layering and caching.

Future plans

- Add support for podman and docker.
- Builds from scratch.
- Add gating system Zuul.
- Contributors!

```
name: Demonstration of ansible-bender's functionality
hosts: all
vars:
  ansible bender:
    base_image: python:3-alpine
    working container:
      volumes: ['{{ playbook_dir }}:/src:Z']
    target image:
      name: my-image
      labels:
        built-by: '{{ ansible_user }}'
      environment:
        VARIABLE: value
tasks:
- command: 'ls -lha /src'
- stat:
    path: "{{ lookup('env','FILE_TO PROCESS') }}"
```

Getting image source signatures
Copying blob sha256:1bfeebd...
Copying config sha256:f3608dfe38bcd1e1d...
Image 'my-image' was built successfully \o/
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CONTENT SLIDE

First things first!

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Section Break

Contact

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