Deploying Elixir Applications

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Agenda

- Distillery
- Docker
- Server Setup
- Deploying

Disclaimer

- This is one way of deploying
- You may want more complex or less complex
  - More: Kubernetes
  - Less: Heroku

Grapevine

https://github.com/oestrich/grapevine

http://grapevine.haus

Distillery

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Distillery

Generates Elixir OTP Releases

https://github.com/bitwalker/distillery

rel/config.exs

```
environment :prod do
  set include_erts: true
  set include_src: false
  set cookie: cookie
  set vm_args: "rel/vm.args.eex"

  set config_providers: [
    {
      Mix.Releases.Config.Providers.Elixir,
      ["/etc/grapevine.config.exs"]
    }
  ]
end
```

rel/config.exs

```
release :grapevine do
  set version: current_version(:grapevine)
  set applications: [
    grapevine_telnet: :none
  ]

  set commands: [
    migrate: "rel/commands/migrate.sh",
    restarting: "rel/commands/restarting.sh",
  ]
end
```

/etc/grapevine.config.exs

```
use Mix.Config

# Config that only contains values
```

rel/commands/restarting.sh

```
#!/bin/sh
bin/grapevine rpc "Grapevine.restart()"
```

Generating a Release

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release.sh

```
#!/bin/bash
set -e

UUID=$(cat /dev/urandom | tr -dc 'a-zA-Z0-9' | fold -w 32 | head -n 1)

rm -r deploy/tmp
mkdir -p deploy/tmp/build
git archive master | tar x -C deploy/tmp/build/
cd deploy/tmp/build

docker build -f Dockerfile.releaser -t knctrr:releaser .

docker run --name knctrr_releaser_${DOCKER_UUID} knctrr:releaser /bin/true
docker cp knctrr_releaser_${DOCKER_UUID}:/app/_build/prod/rel/knctrr/releases/0.1.0/knctrr.tar.gz ../
docker rm knctrr_releaser_${DOCKER_UUID}
```

release.sh

```
rm -r deploy/tmp
mkdir -p deploy/tmp/build
git archive master | tar x -C deploy/tmp/build/
cd deploy/tmp/build
```

release.sh

```
docker build -f Dockerfile.releaser -t app:releaser .

docker run --name releaser_${UUID} app:releaser /bin/true
path=/app/_build/prod/rel/app/releases/0.1.0/app.tar.gz
docker cp releaser_${UUID}:${path} ../
docker rm releaser_${UUID}
```

Docker

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Docker

- Uses a multi-part docker image

Dockerfile.releaser

```
FROM elixir:1.8 as builder

RUN mix local.rebar --force && \
    mix local.hex --force

WORKDIR /app
ENV MIX_ENV=prod
COPY mix.* /app/
RUN mix deps.get --only prod

RUN mix deps.compile
```

Dockerfile.releaser

```
FROM node:11.2 as frontend

WORKDIR /app
COPY assets/package.json assets/yarn.lock /app/
COPY --from=builder /app/deps/phoenix /deps/phoenix
COPY --from=builder /app/deps/phoenix_html /deps/phoenix_html

RUN npm install -g yarn && yarn install

COPY assets /app
RUN npm run deploy
```

Dockerfile.releaser

```
FROM builder as releaser
COPY --from=frontend /priv/static /app/priv/static
COPY . /app/
RUN mix phx.digest
RUN mix release --env=prod
```

Ansible

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Ansible

- Tool for automating server configuration
- Mostly outside of the scope of the talk

Ansible

- Installs very little
    - nginx, traefik
- Note that the server will ***not*** have erlang installed

Deploying

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Simple script

```
set -e
host=grapevine.haus

scp tmp/grapevine.tar.gz deploy@${host}:

ssh deploy@${host} './grapevine/bin/grapevine restarting'
ssh deploy@${host} 'sudo systemctl stop grapevine'
ssh deploy@${host} 'tar xzf grapevine.tar.gz  -C grapevine'
ssh deploy@${host} './grapevine/bin/grapevine migrate'
ssh deploy@${host} 'sudo systemctl start grapevine'
```

Live Deploy

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Questions?

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