Koo Bear Net Ease!

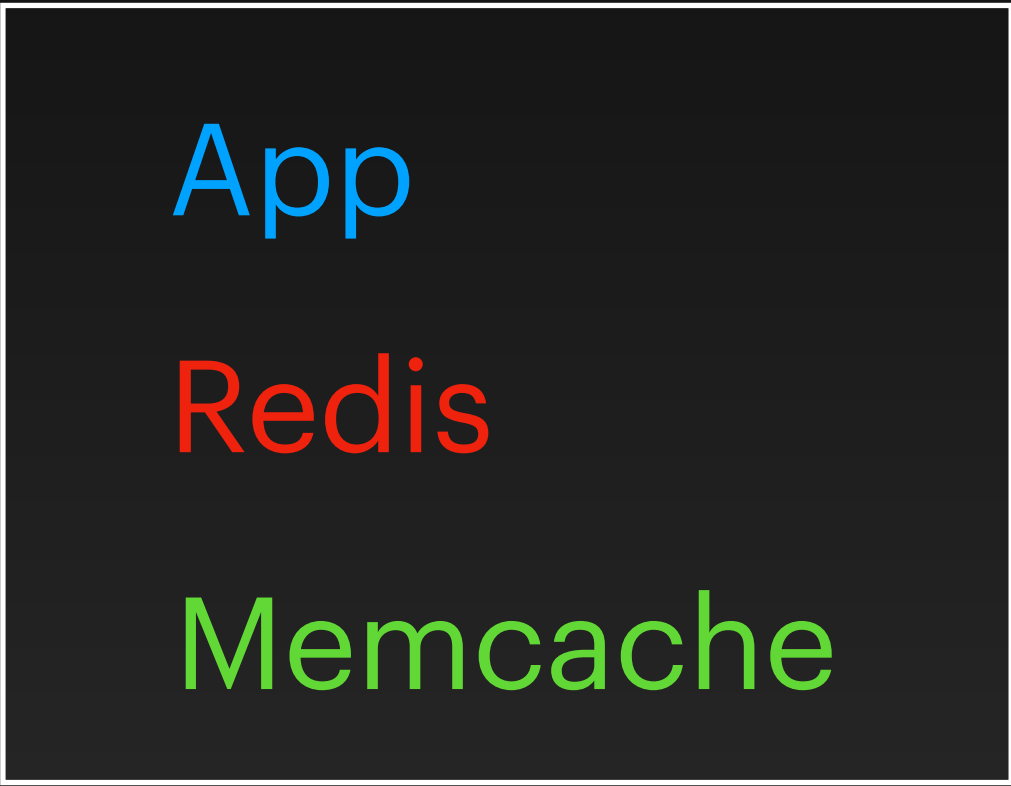## or, How I Learned to Stop Worrying and Love the Machine

Jim Zajkowski • May 27, 2022

Managing App Servers

Managing Web Servers

The Internet → ┌──────────────┐ → Database
                │ App   │
                │ Redis   │
                │ Memcache   │
                └──────────────┘
                     A VM

What about horizontal scaling?

Let's Automate!

Chef

Puppet

Ansible

Salt

Describe the desired state in a definition language

Change the definition, re-apply, theoretical success

VMs are stateful, success not guaranteed

Many yaks shaved

Is this actually better?

Docker

```
ARG VARIANT=2.7
FROM ruby:${VARIANT}

# Install NodeJS
RUN apt-get update && export DEBIAN_FRONTEND=nonintera
    && apt-get install -y apt-transport-https \
    && curl --silent --show-error --location https://d
    && echo "deb https://dl.yarnpkg.com/debian/ stable
    && curl --silent --show-error --location https://d
    && echo "deb https://deb.nodesource.com/node_16.x/
    && apt-get update \
    && apt-get install -y yarn nodejs

RUN apt-get update && export DEBIAN_FRONTEND=nonintera
    # Remove imagemagick due to https://security-track
    && apt-get purge -y imagemagick imagemagick-6-comm
    && apt-get -y install --no-install-recommends \
        ca-certificates \
        cmake \
    && gem install \
        "bundler:→2.3.0" \
        foreman \|
        rails

RUN mkdir -p /app
WORKDIR /app
ENV HOME /app

# container startup tasks
ADD config/container/boot.sh /boot.sh

# copy app
COPY . /app
# Foreman will read in .env and clobber all docker-set
RUN rm -f /app/.env

# bundle install and prepare assets
RUN cd /app && bundle install
RUN cd /app && RAILS_ENV=production DATABASE_URL=sqlit

# Re-link Storage
RUN mkdir -p /efs/recovery
RUN rm -rf /app/storage
RUN ln -s /efs /app/storage

EXPOSE 8000
CMD ["/boot.sh"]
```
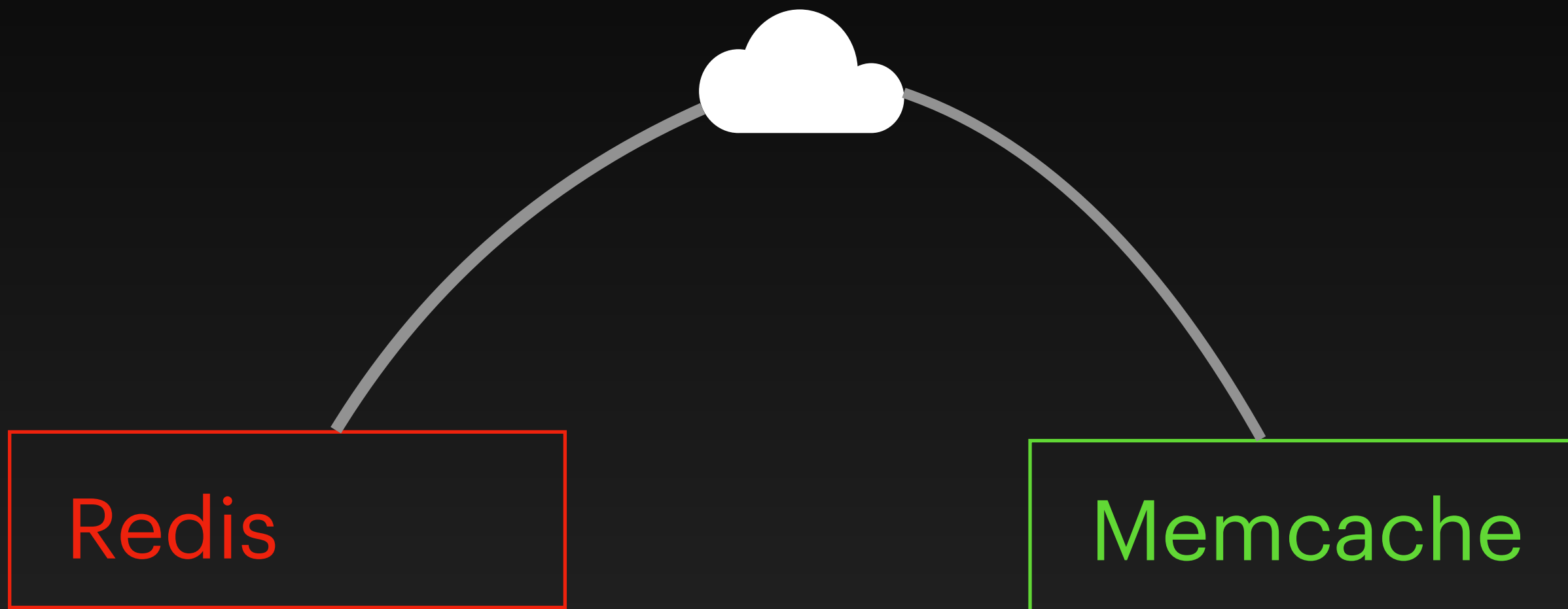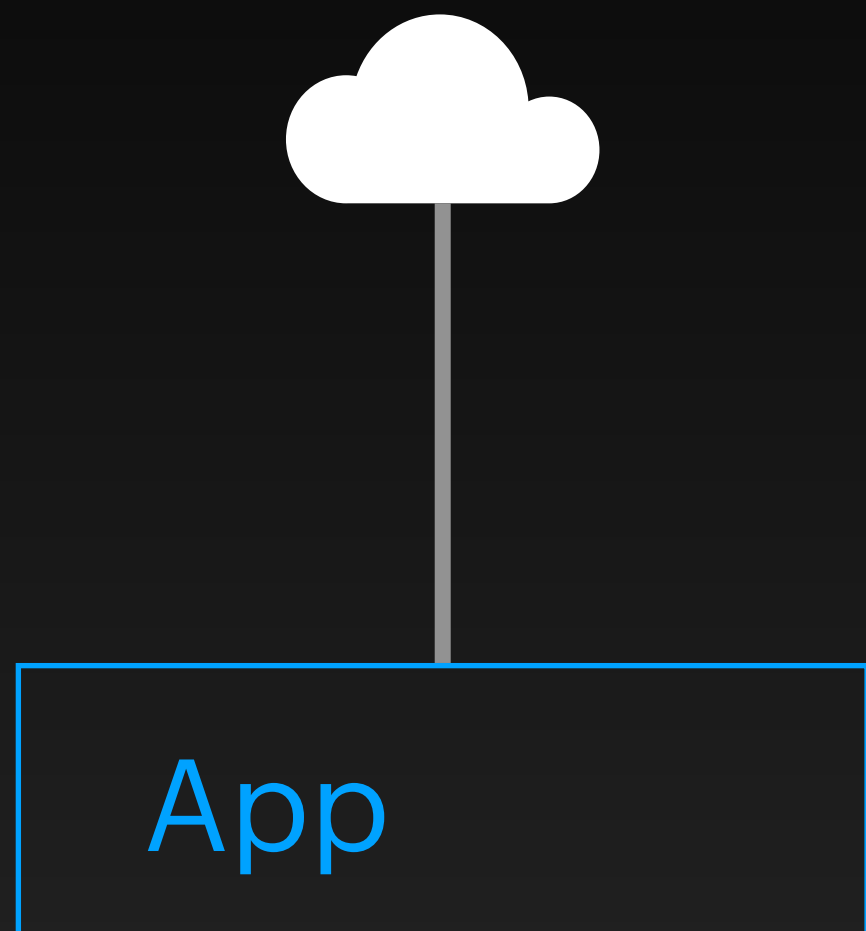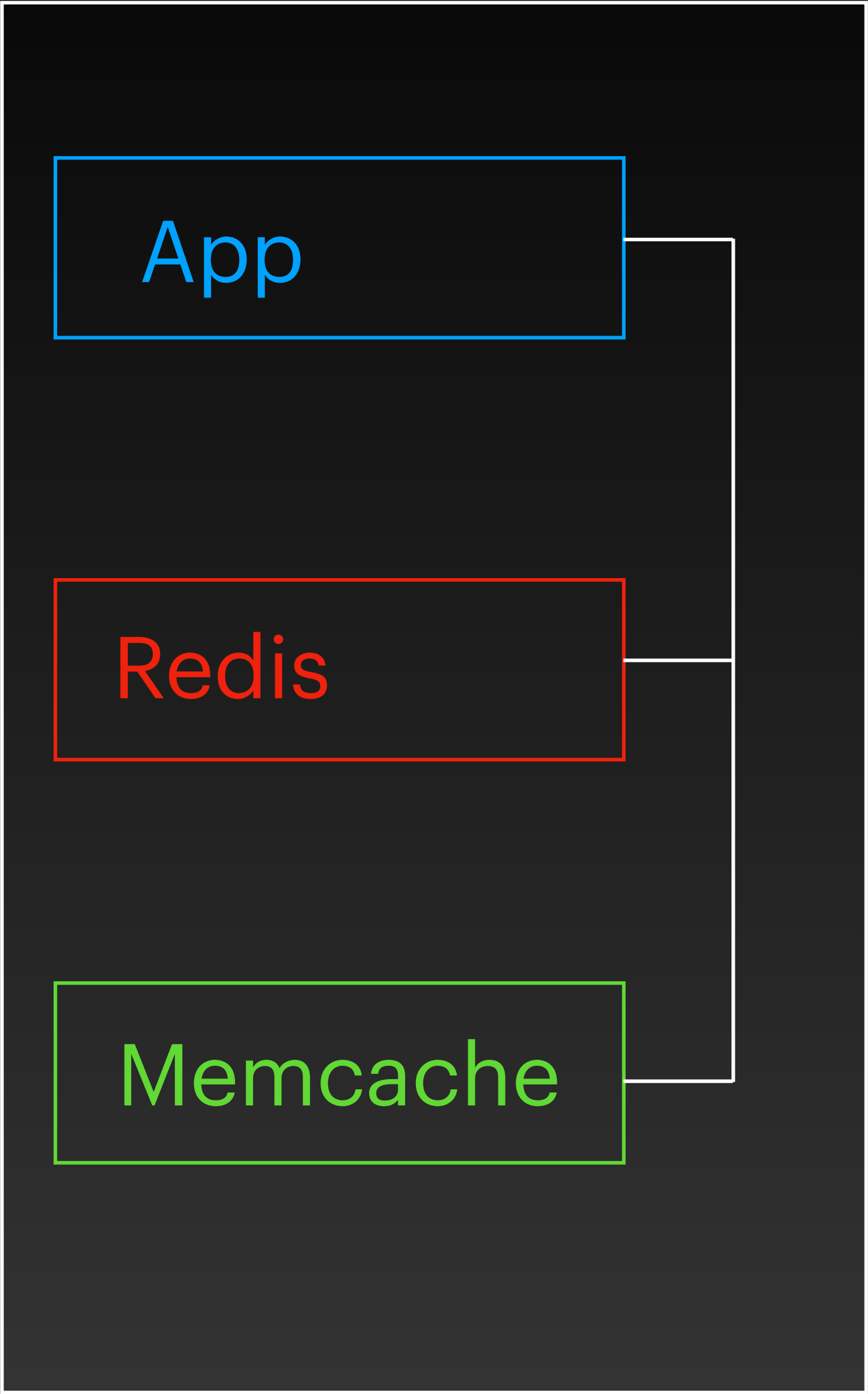
App

Docker Registries

The Internet →

App

Redis

Memcache

→ Database

A VM

All Aboard

You no longer care about setting up virtual machines

... but you do have to think about them

Kubernetes

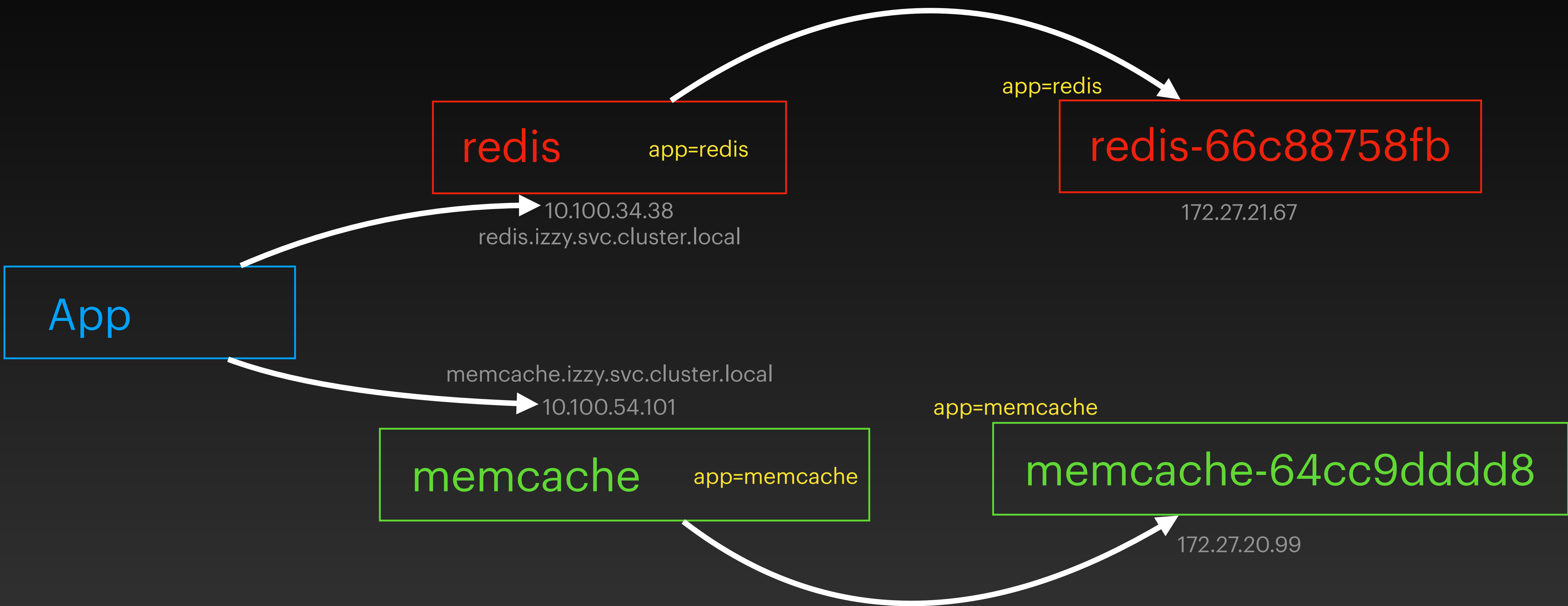# Pods

Deployments

Services

Look at all the work you're not doing!

Even More Batteries Included

Pods   Deployments   Services

Ingress Routes   Horizontal Autoscalers

Pod Admission Controllers   One-Shot Jobs

Pods   **Deployments**   **Services**

Daemonsets   Ingress Controllers   Cron Schedulers

Persistent Volume Claims   Stateful Sets

Ingress Routes   Horizontal Autoscalers

Pod Admission Controllers   One-Shot Jobs

Pods   Deployments   Services

Daemonsets   Ingress Controllers   Cron Schedulers

Persistent Volume Claims   Stateful Sets

Configuration
in plain text files

What happened to VMs?

The Future