



# Labels, Labels, Labels...

Andy Clemenko

Senior Solutions Engineer,  
StackRox



@clemenko



clemenko

andy@stackrox.com



<https://andyc.info/dc20>



# Why Labels?

- Security
- Simplicity
- Self Documenting
- Audit Trail



# Label Schema

## Key = Value

- Author
- Date
- Description
- Version
- and more...



# Labels for CI?

- Source - Version Control
- Commit Number
- How to build
- Where it was built
- Build number



# Labels for Security

- Build Server
- Version Control
- Commit Number
- How to was built
- Build number



# Sample Labels

```
"org.opencontainers.image.authors": "clemenko@gmail.com",
"org.opencontainers.image.source": "https://github.com/clemenko/dc20_labels/tree/master/demo_flask",
"org.opencontainers.image.build": "docker build -t clemenko/flask_demo...",
"org.opencontainers.image.build_number": 22,
"org.opencontainers.image.build.server": http://jenkins.dockr.life/,
"org.opencontainers.image.commit": "98c997f",
"org.opencontainers.image.created": "05/07/20",
"org.opencontainers.image.description": "The repository contains a simple flask application.",
"org.opencontainers.image.healthz": "/healthz",
"org.opencontainers.image.version": "0.1",
"org.opencontainers.image.title": "clemenko/flask_demo",
"org.zdocke.compose": ... ,
"org.zdocke.k8s": ...
```



# Create Labels

- Dockerfile
- Build Argument
- docker build - -label key=value

```
LABEL org.opencontainers.image.authors=$BUILD_SIGNATURE \
      org.opencontainers.image.source="https://github.com/clemenko/flask_demo" \
      org.opencontainers.image.created=$BUILD_DATE \
      org.opencontainers.image.build_number=$BUILD_NUMBER \
      org.opencontainers.image.commit=$GIT_COMMIT \
      org.opencontainers.image.build.server=$JENKINS_URL \
      org.opencontainers.image.title="clemenko/flask_demo" \
      org.opencontainers.image.description="The repository contains a simple flask application that connects to a redis database." \
      flask --> redis." \
      org.opencontainers.image.version=$BUILD_VERSION \
      org.opencontainers.image.healthz="/healthz" \
```

# View Labels

- docker pull; docker inspect
- skopeo

```
$ skopeo inspect docker://docker.io/clemenko/flask_demo:prod | jq -r '  
{  
    "org.opencontainers.image.authors": "clemenko@gmail.com",  
    "org.opencontainers.image.build.server": "http://jenkins.dockr.life/",  
    "org.opencontainers.image.build_number": "2",  
    "org.opencontainers.image.commit": "cb03b31",  
    "org.opencontainers.image.created": "05/14/20",  
    "org.opencontainers.image.healthz": "/healthz",  
    "org.opencontainers.image.source": "https://github.com/clemenko/dc2020_flask",  
    "org.opencontainers.image.title": "clemenko/flask_demo",  
    "org.opencontainers.image.version": "0.1"...,  
}
```

# Use Labels - k8s

```
$ skopeo inspect docker://docker.io/clemenko/flask_demo:prod | jq -r  
.Labels."org.zdocker.k8s"' | base64 -D | kubectl apply -f -
```

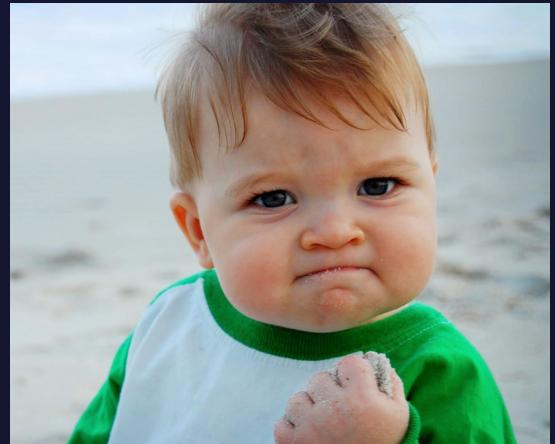
```
namespace/flask created  
deployment.apps/flask created  
deployment.apps/mongo created  
deployment.apps/redis created  
service/flask created  
service/redis created  
service/mongo created  
ingress.networking.k8s.io/flask created  
ingressroute.traefik.containo.us/flask-ingressroute created
```



# DEMO

# Demo Stack

- **DigitalOcean** - Ubuntu 19.10 VMS
- **k3s**
- **Traefik** - Ingress Controller
- **Jenkins** - CI
- **StackRox** - Image Scanning and policy





thanks!

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LIVE  
2020