Moving from Docker Compose to Kubernetes Using Skaffold

Dan Wahlin
WAHLIN CONSULTING

@danwahlin www.codewithdan.com

Module Overview

Skaffold Overview

Installing Skaffold

Skaffold Commands

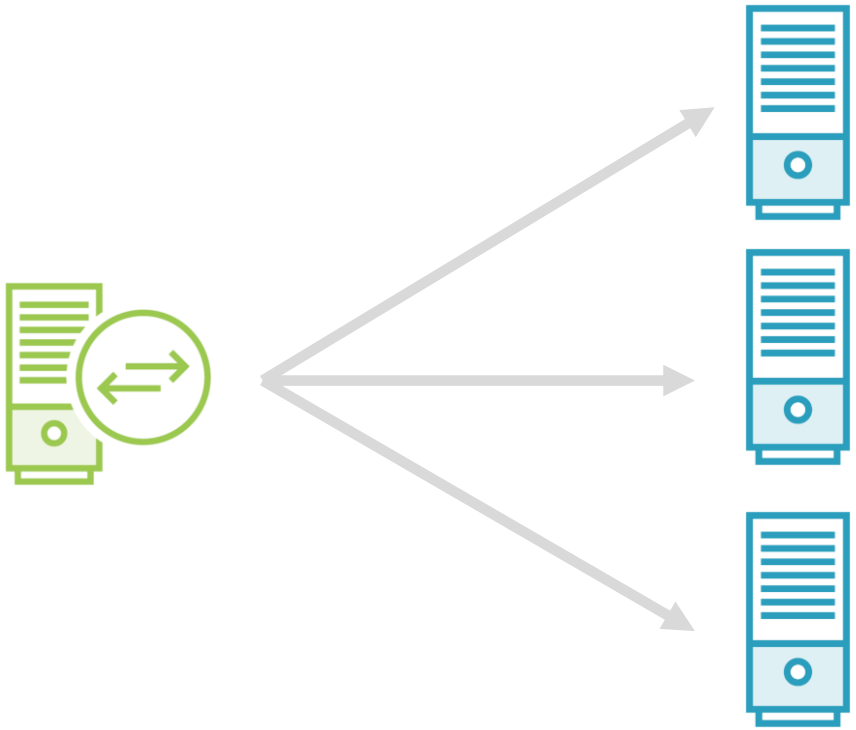
Skaffold in Action

Skaffold Overview

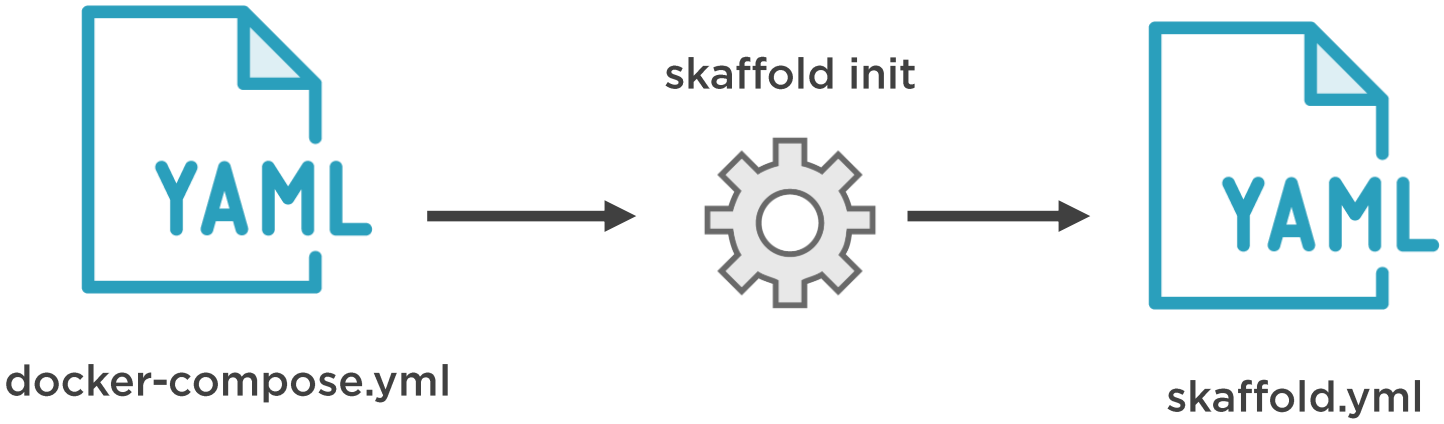
Skaffold = Local Kubernetes Development

Skaffold handles the workflow for building, pushing and deploying your application, allowing you to focus on what matters most: writing code.

https://skaffold.dev



Docker Compose and Skaffold

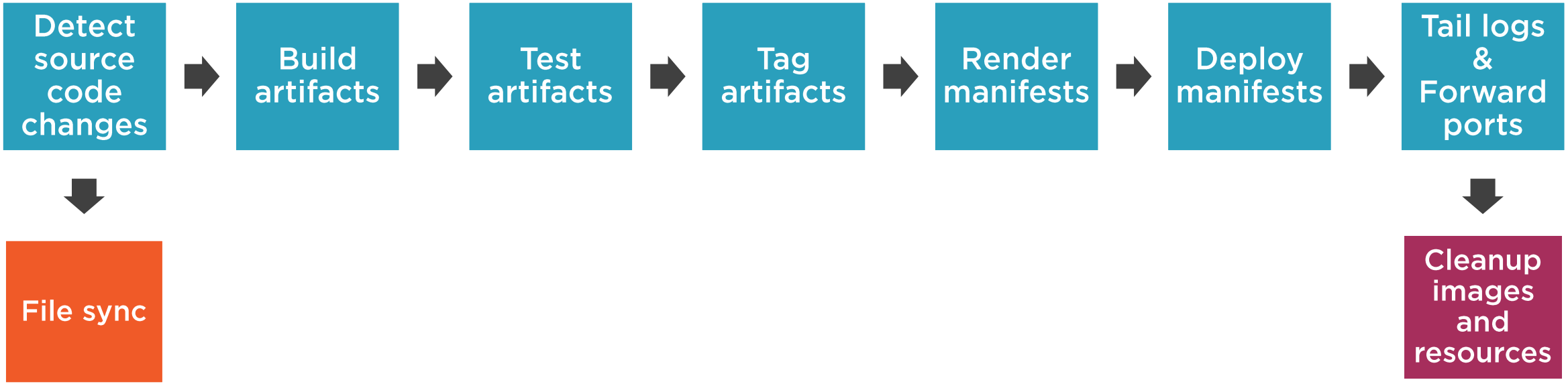


skaffold.yml File

```
apiVersion: skaffold/[version]
kind: Config
metadata:
  name: skaffold-jumpstart
build:
  artifacts:
  - image: nginx-jumpstart
    context: .
    docker:
      dockerfile: Dockerfile
deploy:
  kubectl:
    manifests:
    - .k8s/*.yml
```

- Skaffold version
- Project artifacts to watch for changes
- Dockerfile location for building image
- Location of Kubernetes manifest files

Skaffold Pipeline Stages



https://skaffold.dev/docs/pipeline-stages

Installing Skaffold

Skaffold Commands

```
# Generate configuration to deploy a project to Kubernetes
skaffold init

# Base the configuration on a Docker Compose file
skaffold init --compose-file docker-compose.yml

# Define Kubernetes manifest files location
skaffold init -k .k8s/*.yml
```

Generating a skaffold.yml file

skaffold init can be used to generate the initial configuration to deploy a project to Kubernetes.

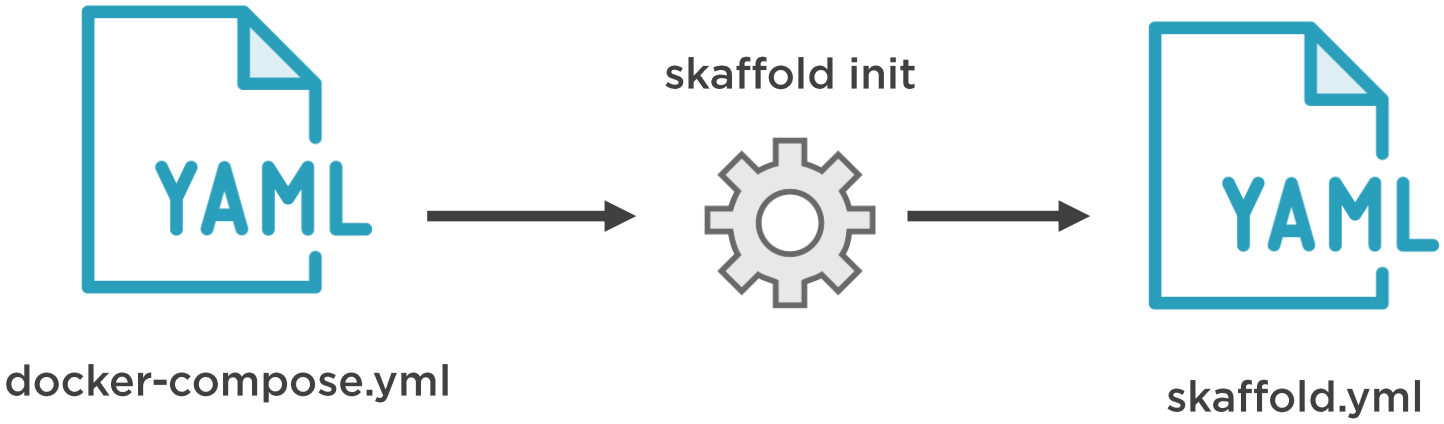
Provides flags to reference a Docker Compose YAML file as a starting point, existing Kubernetes manifest files, and more.

Defining Build Artifacts

--artifact or -a can be used to define build artifacts such as the location of your Dockerfiles.

```
# Defining Build Artifacts
skaffold init --compose-file docker-compose.yml \
-a '{"builder":"Docker","payload":{"path":"./nginx.dev.dockerfile"},
     "image":"nginx-jumpstart"}'
```

Generating the skaffold.yml File



```
# Run a build/deployment pipeline in development mode
# Triggers a watch loop build and deploy workflow
skaffold dev


# Build and deploy project one time
skaffold run
```

Build and Deploy Using Skaffold

skaffold dev can watch your code for changes, build it, and deploy it automatically

skaffold init in Action

Code Sample

https://github.com/DanWahlin/Angular-JumpStart

skaffold run in Action

Summary

Skaffold provides a way to convert from Docker Compose to Kubernetes

Uses the Kompose tool under the covers

Can be used to create a development workflow and rebuild images as code changes

Can automatically deploy updated images to Kubernetes