

## Building Kubernetes Operators with Ansible

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#### Module 5

## Ansible K8s Modules



# Interacting with Kubernetes



#### Kubernetes Object Definitions

```
apiVersion: v1
kind: Pod
metadata:
  name: example-app
  labels:
    app: example-app
spec:
  containers:
  - name: example
    image: companyname/example:v1.2.0
    ports:
    - containerPort: 8000
```

```
apiVersion: v1
kind: Service
metadata:
  name: example-service
spec:
  selector:
    app: example-app
  ports:
  - protocol: TCP
    port: 80
    targetPort: 8000
```



## Ansible k8s Module



#### YAML to describe the desired state of the world

#### KUBERNETES/KUBECTL

# apiVersion: v1 kind: ConfigMap metadata: name: foo namespace: default data: color: red

#### **ANSIBLE**

```
- name: create foo configmap
 k8s:
    definition:
      apiVersion: v1
      kind: ConfigMap
      metadata:
        name: foo
        namespace: default
      data:
        color: "{{ color }}"
```



## Templating Kubernetes resource definitions with Ansible

```
---
- name: create foo configmap
k8s:
   definition: "{{ lookup('template', '/foo.yml') | from_yaml }}"
```



#### **Ansible Roles**

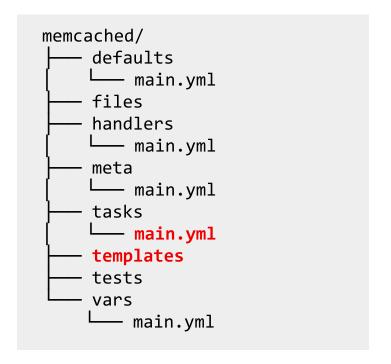
Roles are a package of closely related Ansible content that can be shared more easily than plays alone:

Improves readability & maintainability of complex plays

Eases sharing, reuse and standardization of automation processes

Enables Ansible content to exist independently of playbooks, projects -- even organizations

Provides functional conveniences such as file path resolution and default values





#### Why build Operators with Ansible?

#### **EXISTING SKILLS & ECOSYSTEM**

Same tried & trusted Ansible tooling

Utilize existing skills

Supports cloud-native & traditional IT automation with one simple language

Leverages vibrant existing ecosystem

#### LOWER BARRIER OF ENTRY

No programming required

Faster iterations and easier maintenance

Declarative state definitions like K8s

Templating of resources

Abstraction layer & helpers that reduces necessary K8s API experience



#### Exercise



Next Up:

# Module 6 Operators with Ansible

