Operator pattern for nonclustered resources

Tech radar

Section:
Techniques

Verdict:
Assess

Operator pattern for nonclustered resources

Hold   Assess   Trial   Adopt
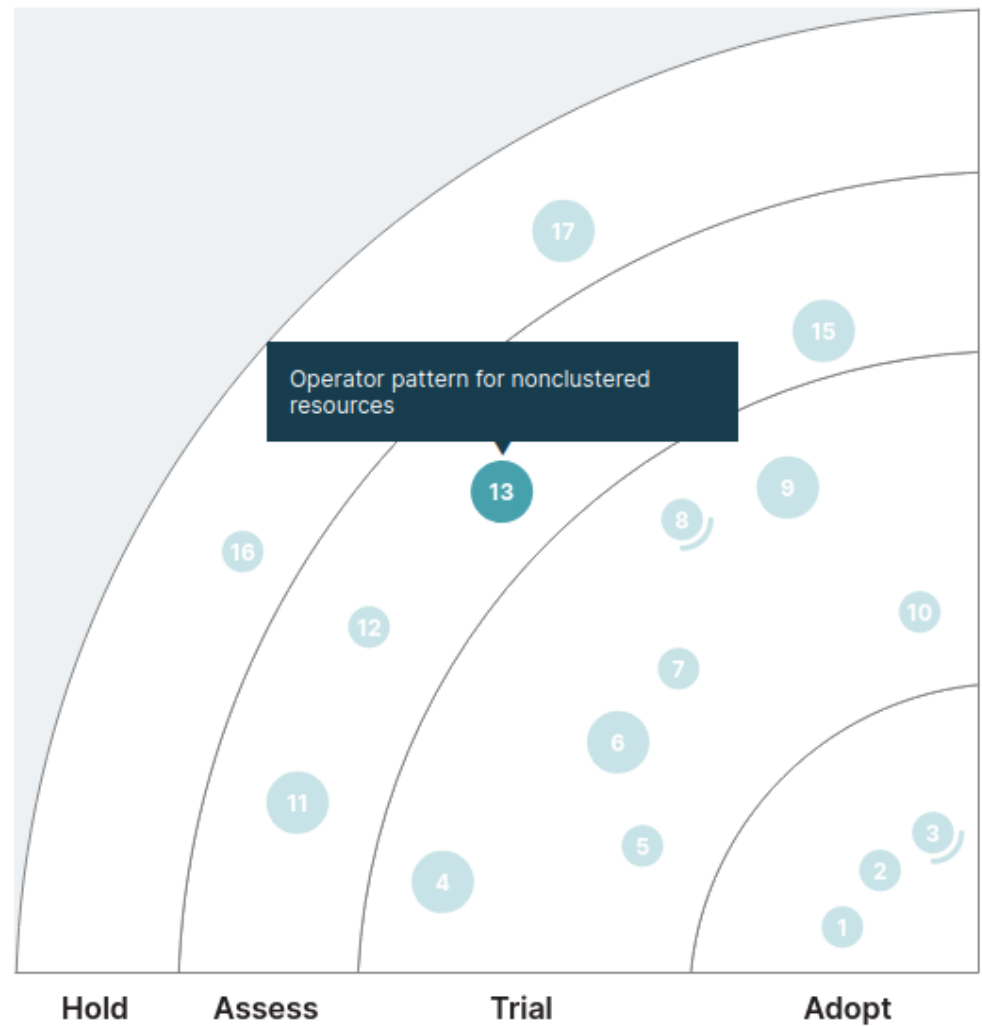
Controllers in Kubernetes

You tell Kubernetes what you want, and a controller makes it happen. ✨

So you give the Kubernetes API this yaml:

```yaml
apiVersion: v1
kind: Pod
metadata:
  name: my-website
spec:
  containers:
    - name: web-server
      image: nginx:latest
```

And a Pod Controller creates a Pod for you.

an operator == a custom controller

An example: **wordpress-operator**

`github.com/bitpoke/wordpress-operator`

Instead of a `Pod` , you can create a `Wordpress` object:

```yaml
apiVersion: wordpress.presslabs.org/v1alpha1
kind: Wordpress
metadata:
  name: mysite
spec:
  replicas: 3
  domains:
    - example.com
  code:
    git:
      repository: https://github.com/example
```

And the Wordpress Operator makes it happen.

The Wordpress Operator creates things like:

- Deployments

- Pods

- ConfigMaps

- Services

- PersistentVolumeClaims

☝️ **All normal cluster resources**

But what if you could create things outside of the Kubernetes cluster? 🤔

Ordering pizza

`github.com/rudoi/cruster-api`

```yaml
apiVersion: alpha.rudeboy.io/v1
kind: PizzaOrder
metadata:
  name: my-order
spec:
  pizzas:
    - size: large
      toppings:
        - pepperoni
    - size: large
      toppings:
        - pepperoni
        - sausage
```

A more normal example:

ACK (AWS Controllers for Kubernetes)

You can create a S3 bucket:

```
apiVersion: s3.services.k8s.aws/v1alpha1
kind: Bucket
metadata:
  name: cat-pictures
spec:
  name: cat-pictures
```

Pros:

- You can version your infrastructure along with your code.

Cons / things to be aware of:

- Need to be able to trust the pull request process.
  - The CI/CD job to deploy the app to Kubernetes now has the power to create and destroy databases / instances / buckets.
- You can't make AWS / Azure / GCP permissions very specific.
  - People with commit access to the repo will be able to

My verdict: Trial

It really just depends on the quality of the operator. Love the concept though.

Source:

`github.com/dbirks/techradar`

Brought to you by:

A markdown-to-slides tool called Marp:

`github.com/marp-team/marp`

And a Marp theme named `colors`, from:

`github.com/matsubara0507/marp-themes`