MANAGING STATE WITH DEPLOYMENTS

Managing State with Deployments

Labels

Part of the metadata of an object is a label. Though labels are not API objects, they are an important tool for cluster administration. They can be used to select an object based on an arbitrary string, regardless of the object type. As of API version **`apps/v1`**, a Deployment's label selector is immutable after it gets created.

Every resource can contain labels in its metadata. By default, creating a Deployment with **`kubectl create`** adds a label, as we saw in:

```
....
    labels:
        pod-template-hash: "3378155678"
        run: ghost ....
```

You could then view labels in new columns (commands and outputs below):

```
$ kubectl get pods -l run=ghost

NAME                      READY  STATUS   RESTARTS  AGE
ghost-3378155678-eq5i6    1/1    Running  0         10m

$ kubectl get pods -L run

NAME                      READY  STATUS   RESTARTS  AGE  RUN
ghost-3378155678-eq5i6    1/1    Running  0         10m  ghost
nginx-3771699605-4v27e    1/1    Running  1         1h   nginx
```

While you typically define labels in pod templates and in the specifications of Deployments, you can also add labels on the fly (commands and output below):

```
$ kubectl label pods ghost-3378155678-eq5i6 foo=bar

$ kubectl get pods --show-labels

NAME                      READY  STATUS   RESTARTS  AGE  LABELS
ghost-3378155678-eq5i6    1/1    Running  0         11m  foo=bar, pod-template-
hash=3378155678,run=ghost
```

For example, if you want to force the scheduling of a pod on a specific node, you can use a **`nodeSelector`** in a pod definition, add specific labels to certain nodes in your cluster and use those labels in the pod. See the following example:

```
....
spec:
    containers:
    - image: nginx
    nodeSelector:
        disktype: ssd
```