Lesson 8 Demo 4: Create a ConfigMap and Secret for a Pod

This section will guide you to:

* Create a configmap and configure a pod to use it
* Create a secret and configure a pod to use it

**Step 1:** Create a configmap and configure a pod to use it

* Create a configuration file for configmap

*vi game-demo.yaml*



* Add the following code in the **game-demo.yaml** file:

*apiVersion: v1*

*kind: ConfigMap*

*metadata:*

*name: game-demo*

*data:*

*# property-like keys; each key maps to a simple value*

*player\_initial\_lives: "3"*

*ui\_properties\_file\_name: "user-interface.properties"*

*# file-like keys*

*game.properties: |*

*enemy.types=aliens,monsters*

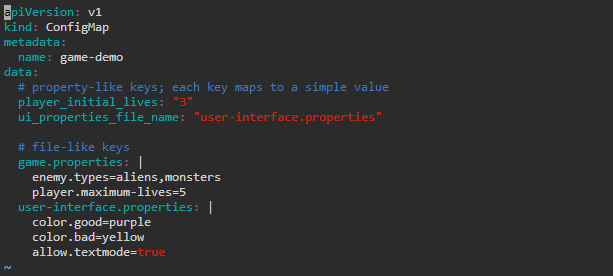
*player.maximum-lives=5*

*user-interface.properties: |*

*color.good=purple*

*color.bad=yellow*

*allow.textmode=true*

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* Create the configmap using the game-demo.yaml file

*kubectl apply -f game-demo.yaml*



* Create a configuration file for a pod

*vi configmap-demo-pod.yaml*



* Add the following code in the **configmap-demo-pod.yaml** file:

*apiVersion: v1*

*kind: Pod*

*metadata:*

*name: configmap-demo-pod*

*spec:*

*containers:*

*- name: demo*

*image: alpine*

*command: ["sleep", "3600"]*

*env:*

*# Define the environment variable*

*- name: PLAYER\_INITIAL\_LIVES # Notice that the case is different here*

*# from the key name in the ConfigMap.*

*valueFrom:*

*configMapKeyRef:*

*name: game-demo # The ConfigMap this value comes from.*

*key: player\_initial\_lives # The key to fetch.*

*- name: UI\_PROPERTIES\_FILE\_NAME*

*valueFrom:*

*configMapKeyRef:*

*name: game-demo*

*key: ui\_properties\_file\_name*

*volumeMounts:*

*- name: config*

*mountPath: "/config"*

*readOnly: true*

*volumes:*

*# You set volumes at the Pod level, then mount them into containers inside that Pod*

*- name: config*

*configMap:*

*# Provide the name of the ConfigMap you want to mount.*

*name: game-demo*

*# An array of keys from the ConfigMap to create as files*

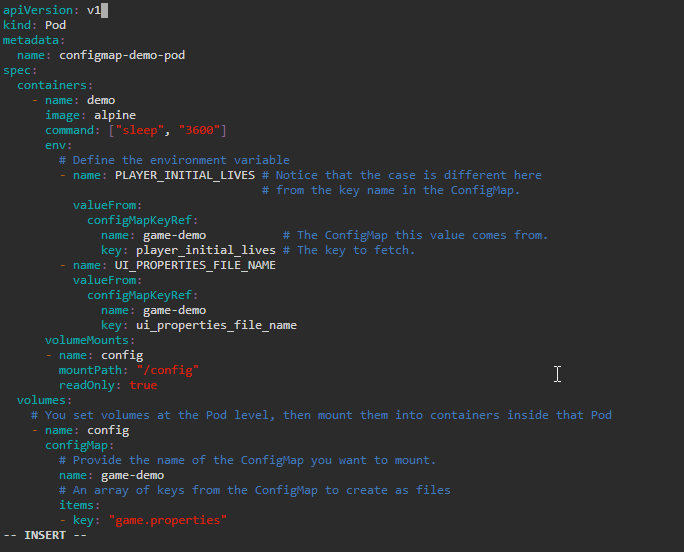
*items:*

*- key: "game.properties"*

*path: "game.properties"*

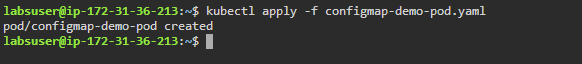
*- key: "user-interface.properties"*

*path: "user-interface.properties"*

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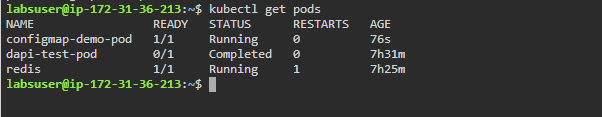
* Create the pod using the **configmap-demo-pod.yaml** file:

*kubectl apply -f configmap-demo-pod.yaml*



* List all the running pods

*kubectl get pods*

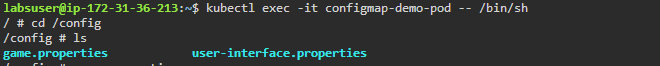


* Run the newly created pod and list the items of configmap

*kubectl exec -it configmap-demo-pod -- /bin/sh*

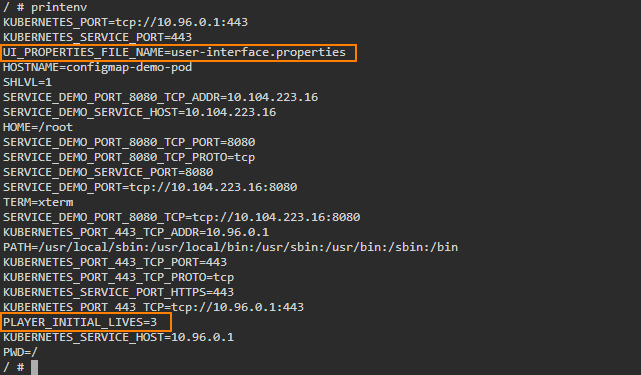
*cd /config*

*ls*



* Use the following command inside the pod to list all the environment variables:

*printenv*

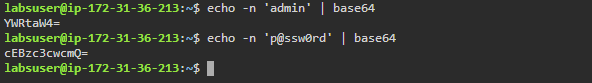


**Step 2:** Create a secret and configure a pod to use it

* Convert a username and password string into a base 64 encoded string

*echo -n ‘admin’ | base64*

*echo -n ‘p@ssw0rd’ | base64*



* Create a configuration file for secrets

*vi secret.yaml*



* Add the following code in the **secret.yaml** file:

*apiVersion: v1*

*data:*

*username: YWRtaW4=*

*password: cEBzc3cwcmQ=*

*kind: Secret*

*metadata:*

*creationTimestamp: 2020-11-24T18:41:56Z*

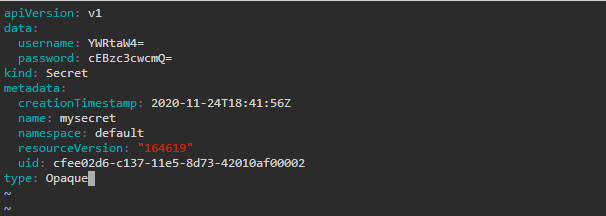
*name: mysecret*

*namespace: default*

*resourceVersion: "164619"*

*uid: cfee02d6-c137-11e5-8d73-42010af00002*

*type: Opaque*



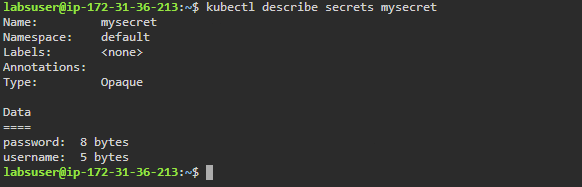
* Create the secret using the configuration file

*kubectl apply -f secret.yaml*



* Use the following command to check the stored password in the newly created secret

*kubectl describe secrets mysecret*



**Note:** In the above screenshot, the actual password string isn’t displayed. Instead the size of the encoded string is displayed.

* Create a configuration file for a pod

*vi secret-demo-pod.yaml*



* Add the following code in the **secret-demo-pod.yaml** file:

*apiVersion: v1*

*kind: Pod*

*metadata:*

*name: mypod*

*spec:*

*containers:*

*- name: mypod*

*image: redis*

*volumeMounts:*

*- name: foo*

*mountPath: "/etc/foo"*

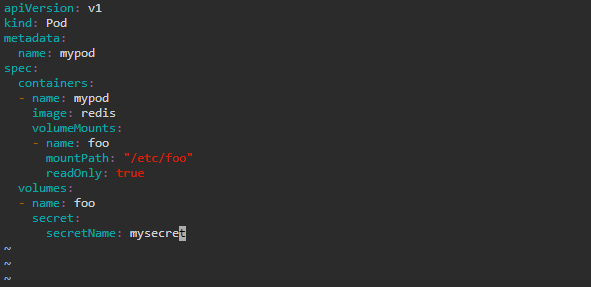
*readOnly: true*

*volumes:*

*- name: foo*

*secret:*

*secretName: mysecret*



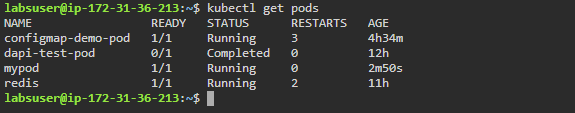
* Create a pod from the secret-demo-pod.yaml file

*kubectl apply -f secret-demo-pod.yaml*



* List all the running pods

*kubectl get pods*



* Run the newly created pod and list the items of the secret

*kubectl exec -it mypod -- sh*

*# Run the following commands inside the pod*

*cd /etc/foo*

*ls -l*

*cat /etc/foo/username*

*cat /etc/foo/password*

