IT 3300 : Virtualization

Kubernetes YAML

**YAML Required**

- `apiVersion`: version of the k8s API used to create the object
- `kind`: kind of object you want to create
- `metadata`: data that helps uniquely identify the object (name, UID, namespace)
- `spec`: what state you desire for the object

**YAML Example**

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
spec:
  selector:
    matchLabels:
      app: nginx
  replicas: 2 # tells deployment to run 2 pods matching the template
template:
  metadata:
    labels:
      app: nginx
  spec:
    containers:
      - name: nginx
        image: nginx:1.14.2
        ports:
          - containerPort: 80
```

**YAML Maps and lists**

- Look [here](#)
- Indentation
  - be consistent
  - I usually use 2 spaces, but the number doesn’t matter as long as you are consistent.
  - DON'T USE TABS

**Next example**

```yaml
---
apiVersion: v1 #deployments dont exist in v1
kind: Pod     #what we are creating, service,Deployment, etc...
metadata:
  name: rss-site
labels:
  app: web
spec:
  containers:
    - name: front-end
      image: nginx
      ports:
        - containerPort: 80
    - name: rss-reader
      image: nickchase/rss-php-nginx:v1
      ports:
        - containerPort: 88
```
How to spec a pod

Maybe see the pod spec here

**Container spec**

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**Easy yaml creation**

Some of these could be helpful:

- `kubectl create deployment --image=nginx nginx --dry-run=client -o yaml > deployment.yml`
- `kubectl run nginx --image=nginx --dry-run=client -o yaml > pod.yml`
- `kubectl expose pod redis --port=6379 --name redis-service --dry-run=client -o yaml > service.yml`

See cheatsheets for more.

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**Misc**

Get to a shell?

- If a pod has multiple containers
  - `kubectl exec -i -t my-pod -container main-app - /bin/bash`
- Pass other commands in:
  - `kubectl exec -stdin -tty rss-site - env`

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**Identidock Example**

Let’s redo the identidock example that we did before, but in K8s