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

Easy yaml creation

Some of these could be helpful:

- `kubectl create deployment --image=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.

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`

Identidock Example

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