Kubernetes Workload Types

Creating the seven primary workload types supported by Kubernetes

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`Note` **Steps 1 - 7 can be skipped by using Steps 8 and 9.**

Step 1: Pod

🎯 Objective:

- Create and inspect a standalone Pod.

🛠️ Steps

1. Apply the YAML:

```
kubectl apply -f wl-pod.yaml
```

2. Check the pod:

```
kubectl get pods
```

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Step 2: ReplicaSet

🎯 Objective:

- Deploy a ReplicaSet and confirm multiple pods.

🛠️ Steps

1. Apply the YAML:

```
kubectl apply -f wl-replicaset.yaml
```

2. List pods and ReplicaSet:

```
kubectl get rs
kubectl get pods
```

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Step 3: Deployment

🎯 Objective:

- Deploy and scale a Deployment.

🛠️ Steps

1. Apply the YAML:

```
kubectl apply -f wl-deployment.yaml
```

2. Check rollout:

```
kubectl rollout status deployment busybox-deployment
```

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Step 4: StatefulSet

🎯 Objective:

- Launch a StatefulSet with stable pod names.

🛠️ Steps

1. Apply the YAML:

```
kubectl apply -f wl-statefulset.yaml
```

2. Confirm stable pod names:

```
kubectl get pods -l app=busybox
```

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Step 5: DaemonSet

🎯 Objective:

- Deploy a DaemonSet to run on all nodes.

🛠️ Steps

1. Apply the YAML:

```
kubectl apply -f wl-daemonset.yaml
```

2. Verify 1 pod per node:

```
kubectl get pods -o wide
```

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Step 6: Job

🎯 Objective:

- Run a short-lived Job to completion.

🛠️ Steps

1. Apply the YAML:

```
kubectl apply -f wl-job.yaml
```

2. Watch job complete:

```
kubectl get jobs
kubectl logs job/busybox-job
```

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Step 7: CronJob

🎯 Objective:

- Schedule a recurring job using CronJob.

🛠️ Steps

1. Apply the YAML:

```
kubectl apply -f wl-cronjob.yaml
```

2. Wait 5 minutes, then check:

```
kubectl get cronjob
kubectl get jobs
```

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Step 8: Create all Workloads

🎯 Objective:

- Start all seven Workload types using a shell script and monitor pods and events.

🛠️ Steps

1. Open terminal and watch for Pods:

```
kubectl get pods -w
```

2. Open terminal and watch for Events:

```
kubectl get events --sort-by='.lastTimestamp' -w
```

   Verify that shell script has execute privilege. If not, use: `chmod +x wl-apply.sh`.

3. Create the Workloads by running the shell script:

```
./wl-apply.sh
```

Step 9: Delete all Workloads

🎯 Objective:

- Start all seven Workload types using a shell script and monitor pods and events.

🛠️ Steps

1. Delete all Workloads by running the shell script:

   ```
   ./wl-delete.sh
   ```

   Verify that shell script has execute privilege. If not, use: `chmod +x wl-delete.sh`.

2. Stop and close terminal that was watching Pods:
3. Stop and close terminal that was watching Events:

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