Monitor Containers in Kubernetes

Manage Container Health Checks

Container Monitoring

- ➔ Container Health
- ➔ Liveness Probe
- ➔ StartUp Probe
- ➔ Readiness Probe
- ➔ Hands On Demonstration

Container Health

- Kubernetes is feature Rich, and provide number of features to monitor the containers.

- Active Monitoring Helps K8s to decide the container state and Auto Restart in Case of Container Failure.

Liveness Probe

- Liveness probe helps to determine the Container State.
- By Default, K8s only consider container to be down, if container process stops.
- Liveness probe helps user to improve & customized this Container Monitoring mechanism.
- User can execute Two types of Liveness probes - Run Command in Container, Periodic HTTP Health Check.

Liveness Probe

- Liveness via Container Command manifest.

- **initialDelaySeconds**: How long to wait before sending a probe after a container starts.

- **periodSeconds**: How often a probe will be sent.

```
livenessProbe:
  exec:
    command:
    -some command here-
  initialDelaySeconds: 5
  periodSeconds: 5
```

Liveness Probe

- ➢ Liveness via HTTP Request manifest.

- ➢ **timeoutSeconds:** How long a request can take to respond before it’s considered a failure.

```
livenessProbe:
 httpGet:
  path: /health.html
  port: 8080
  httpHeaders:
  - name: Custom-Header
   value: Awesome
 initialDelaySeconds: 3
 periodSeconds: 3
 timeoutSeconds: 1
```

StartUp Probe

- Setting up Liveness probe is very Tricky with Application which have Long StartUp Time.
- StartUp probe runs at container StartUp and stop running once container success.
- Once the startup probe has succeeded once, the liveness probe takes over to provide a fast response to container deadlocks.

StartUp Probe

- StartUp via HTTP Request manifest.

- **failureThreshold:** When a probe fails, Kubernetes will try failure Threshold times before giving up.

- Application will have a maximum of 5 minutes *(30 * 10 = 300s)* to finish its startup.

```
startupProbe:
 httpGet:
  path: /health.html
  port: 8080
 failureThreshold: 30
 periodSeconds: 10
```

Readiness Probe

- Readiness is used to detect if a container is ready to accept traffic.

- Sometimes application might need to load large data or configuration files during startup, or depend on external services after startup.

- NO Traffic will be sent to a pod until container pass the Readiness Probe.

Readiness Probe

- ➢ Readiness Probe manifest.
- ➢ Configuration for HTTP readiness probes also remains identical to liveness probes.
- ➢ Readiness and liveness probes can be used in parallel for the same container.

```
readinessProbe:
  exec:
    command:
    - cat
    - /tmp/healthy
  initialDelaySeconds: 5
  periodSeconds: 5
```

Hands On Demonstration

Thank You…

Don’t be the Same! Be Better!!!