

How to configure liveness and readiness probes for Containers.

Define a liveness and readiness command

1. SSH to the AWS Instance and create a pod object as <your-name>probe.yaml.

```
$ curl -k <your-name>probe.yaml > https://pastebin.com/raw/wsFvgeSZ
```

Paste the below content to the yaml file.

You can get the code probe.yaml from

Note :

```
- touch /tmp/healthy; sleep 30; rm -rf /tmp/healthy; sleep 600
```

This command will create a healthy file in the /tmp dir for the first 30 secs and then deletes this file. When the pod is being scheduled the liveness probe will be able to find the file for the first 30 secs and when this file gets deleted the probe will fail and hence will kill the container and recreates it.

initialDelaySeconds: 5 Number of seconds after the container has started before liveness or readiness probes are initiated.

periodSeconds: 5 How often (in seconds) to perform the probe. Default to 10 seconds.

timeoutSeconds: Number of seconds after which the probe times out. Defaults to 1 second.

Edit the yaml file and update the <your-name> with your name.

```
$ vim <your-name>probe.yaml
```

exit with (!wq)

2. Create a Pod

```
$ kubectl create -f <your-name>probe.yaml
```

3. Within 30 seconds, view the Pod events:

```
$ kubectl get po | grep <your-name> ## copy the pod name from the output of this command
```

```
$ kubectl describe pod <pod-name>
```

The output indicates that no liveness probes have failed yet:

FirstSeen	LastSeen	Count	From	SubobjectPath	Type	Reason	Message
24s	24s	1	{default-scheduler }	Normal	Scheduled	Successfully assigned liveness-exec to worker0	

```

23s    23s    1 {kubelet worker0} spec.containers{liveness} Normal    Pulling    pulling image
"k8s.gcr.io/busybox"
23s    23s    1 {kubelet worker0} spec.containers{liveness} Normal    Pulled     Successfully pulled image
"k8s.gcr.io/busybox"
23s    23s    1 {kubelet worker0} spec.containers{liveness} Normal    Created    Created container with
docker id 86849c15382e; Security:[seccomp=unconfined]
23s    23s    1 {kubelet worker0} spec.containers{liveness} Normal    Started    Started container with
docker id 86849c15382e

```

4. After 35 seconds, view the Pod events again:

\$ kubectl describe pod <pod-name>

At the bottom of the output, there are messages indicating that the liveness probes have failed, and the containers have been killed and recreated.

FirstSeen	LastSeen	Count	From	SubobjectPath	Type	Reason	Message
37s	37s	1	{default-scheduler }		Normal	Scheduled	Successfully assigned liveness-exec to worker0
36s	36s	1	{kubelet worker0}	spec.containers{liveness}	Normal	Pulling	pulling image "k8s.gcr.io/busybox"
36s	36s	1	{kubelet worker0}	spec.containers{liveness}	Normal	Pulled	Successfully pulled image "k8s.gcr.io/busybox"
36s	36s	1	{kubelet worker0}	spec.containers{liveness}	Normal	Created	Created container with docker id 86849c15382e; Security:[seccomp=unconfined]
36s	36s	1	{kubelet worker0}	spec.containers{liveness}	Normal	Started	Started container with docker id 86849c15382e
2s	2s	1	{kubelet worker0}	spec.containers{liveness}	Warning	Unhealthy	Liveness probe failed: cat: can't open '/tmp/healthy': No such file or director

5. Wait another 30 seconds, and verify that the Container has been restarted:



\$ kubectl get pod <pod-name>

The output shows that RESTARTS has been incremented:

NAME	READY	STATUS	RESTARTS	AGE
liveness	1/1	Running	1	1m

If you login to your dashboard and check the pod events. You can see that the pod is being killed and recreated once the probe check fails.

Events

Message	Source	Sub-object	Count	First seen	Last seen
Successfully assigned default/liveness-exec to ip-172-31-91-27	default-scheduler	-	1	2019-01-15T06:38 UTC	2019-01-15T06:38 UTC
Container image "asyed755/ril:v1" already present on machine	kubelet ip-172-31-91-27	spec.containers(liveness)	3	2019-01-15T06:38 UTC	2019-01-15T06:40 UTC
Created container	kubelet ip-172-31-91-27	spec.containers(liveness)	2	2019-01-15T06:38 UTC	2019-01-15T06:39 UTC
Started container	kubelet ip-172-31-91-27	spec.containers(liveness)	2	2019-01-15T06:38 UTC	2019-01-15T06:39 UTC
 Readiness probe failed: cat: /tmp/health: No such file or directory	kubelet ip-172-31-91-27	spec.containers(liveness)	52	2019-01-15T06:38 UTC	2019-01-15T06:48 UTC
 Liveness probe failed: cat: /tmp/healthy: No such file or directory	kubelet ip-172-31-91-27	spec.containers(liveness)	2	2019-01-15T06:38 UTC	2019-01-15T06:40 UTC
Killing container with id docker://liveness: Container failed liveness probe... Container will be killed and recreated.	kubelet ip-172-31-91-27	spec.containers(liveness)	2	2019-01-15T06:39 UTC	2019-01-15T06:40 UTC

