

A photograph of a modern glass skyscraper at dusk. The building has a prominent triangular glass facade that tapers to a point at the top. The interior lights are on, and the sky is a deep blue. In the foreground, there is a paved plaza and a grassy area with some trees. A large orange rectangular box is overlaid on the middle of the image, containing white text.

# Slow starting containers

How to check their health?

# Container probes bifecta

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## readinessProbe

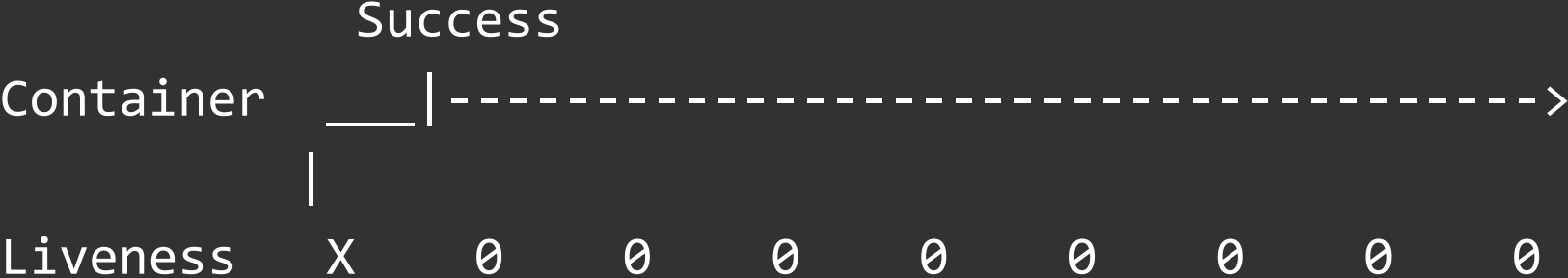
- container can service requests
- fail ⇨ container out of load balancer
- prevent 50x when container is not ready

## livenessProbe

- container is running
  - fail ⇨ container killed
  - prevent downtime caused by deadlocks
-

# Default values + fast starting container: success

```
initialDelaySeconds: 0
failureThreshold: 3
periodSeconds: 10
```



# Default values + slow starting container: restart loop

slow startup  
NOT allowed

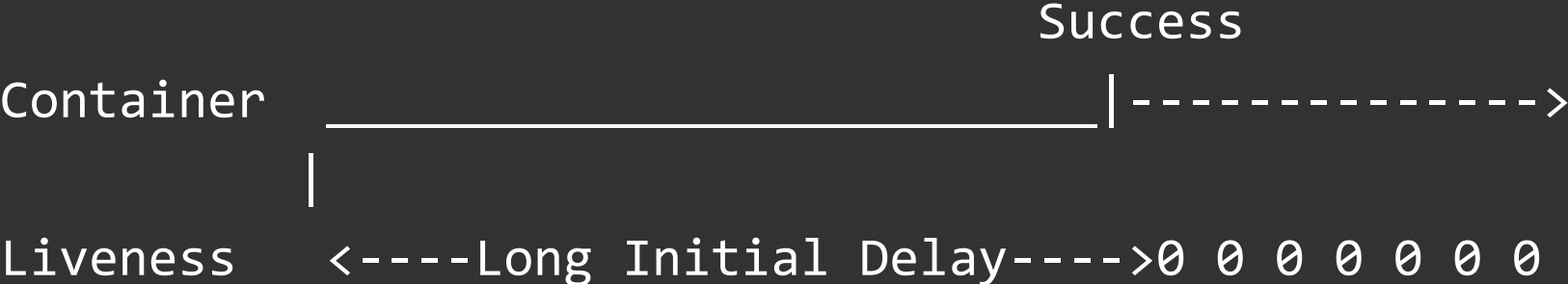
```
initialDelaySeconds: 0
failureThreshold: 3
periodSeconds: 10
```



# Long initialDelaySeconds: first (long) start

slow startup  
allowed

```
initialDelaySeconds: 300  
failureThreshold: 3  
periodSeconds: 10
```



# Long initialDelaySeconds: second (fast) start

NO startup time feedback loop

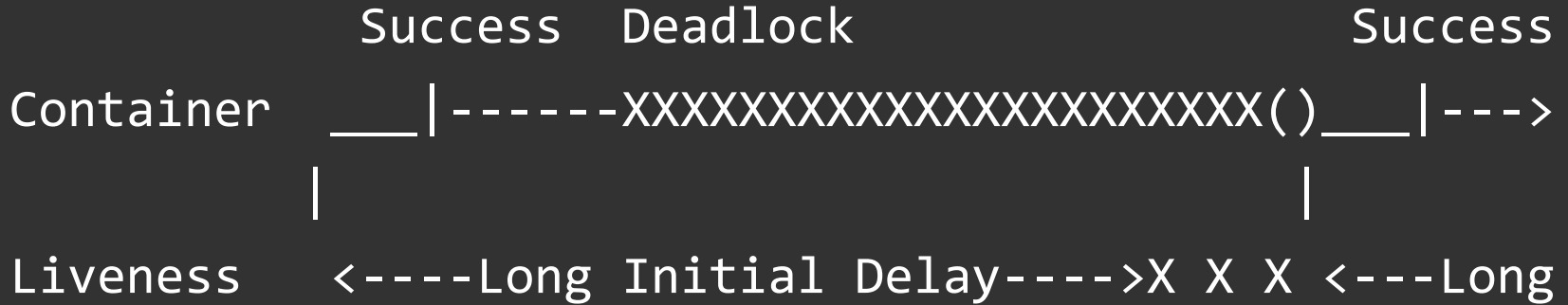
```
initialDelaySeconds: 300
failureThreshold: 3
periodSeconds: 10
```



# Long initialDelaySeconds: second start + deadlock

NO deadlock protection during startup

```
initialDelaySeconds: 300
failureThreshold: 3
periodSeconds: 10
```



# High failureThreshold: first (slow) start

slow startup  
allowed

```
initialDelaySeconds: 0
failureThreshold: 30
periodSeconds: 10
```





# High failureThreshold: second (fast) start

startup time  
feedback loop

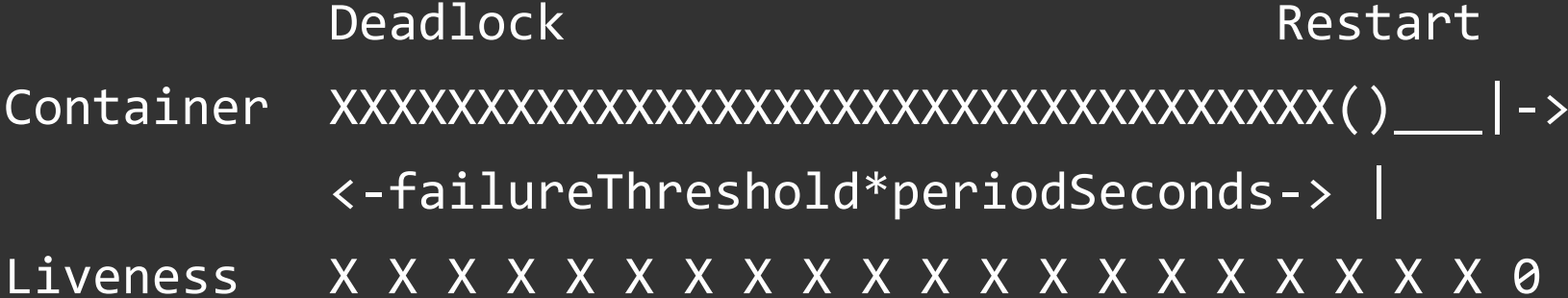
```
initialDelaySeconds: 0
failureThreshold: 30
periodSeconds: 10
```



# High failureThreshold: deadlock (anytime)

NO deadlock protection

```
initialDelaySeconds: 0
failureThreshold: 30
periodSeconds: 10
```



# Strategies overview

	default values	long initialDelay	high failureThreshold	???
slow startup allowed	NO	YES	YES	YES
deadlock protection during startup	YES	NO	NO	YES
deadlock protection	YES	YES	NO	YES
startup time feedback loop	YES	NO	YES	YES

# Container probes trifecta

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## readinessProbe

- container can service requests
- fail ⇒ container out of load balancer
- prevent 50x when container is not ready

## livenessProbe

- container is running
- fail ⇒ container killed
- prevent downtime caused by deadlocks

## startupProbe

- container has started
- fail ⇒ container killed
- disable other probes during startup

# Add pod-startup liveness-probe holdoff for slow-starting pods

[kubernetes/enhancements/issues/950](https://github.com/kubernetes/enhancements/issues/950)  
(alpha in v1.15)

# About Swissquote

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The first online bank  
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A high-angle, top-down photograph of a diverse group of young adults, approximately 20-30 people, looking directly up at the camera. They are arranged in a loose circle on a dark floor. The individuals have various ethnicities, hair colors, and styles, and are wearing casual to semi-casual clothing. Some are smiling, while others have neutral or curious expressions. The lighting is bright and even, highlighting their faces. In the background, some orange and grey geometric shapes are visible on the floor.

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