

分段时差对比分析

```
INFO[2023-05-22T17:18:31.223451454+08:00] RunPodSandbox for &PodSandboxMetadata{Name:test-sandbox1684747111,Uid:hdishd83djaidwduwk28bcsb,Namespace:default,Attempt:1,}
[INFO] server listen started
[INFO] server started
[INFO] Shim successfully started, waiting for exit signal...
INFO[2023-05-22T17:18:31.331470492+08:00] RunPodSandbox for &PodSandboxMetadata{Name:test-sandbox1684747111,Uid:hdishd83djaidwduwk28bcsb,Namespace:default,Attempt:1,} returns sa
ndbox id "ae90f093aa20c936308d770910d908fe58b581d6ff43599d54bcac5d0eb68ee5"
INFO[2023-05-22T17:18:31.332549528+08:00] CreateContainer within sandbox "ae90f093aa20c936308d770910d908fe58b581d6ff43599d54bcac5d0eb68ee5" for container &ContainerMetadata{Name:
wasm,Attempt:0,}
INFO[2023-05-22T17:18:31.338706610+08:00] CreateContainer within sandbox "ae90f093aa20c936308d770910d908fe58b581d6ff43599d54bcac5d0eb68ee5" for &ContainerMetadata{Name:wasm,Attem
pt:0,} returns container id "242a37a95c30a0ef1015c4732d38d802ff4692ba532b225d1fc88c8f4204ff46"
INFO[2023-05-22T17:18:31.344353729+08:00] StartContainer for "242a37a95c30a0ef1015c4732d38d802ff4692ba532b225d1fc88c8f4204ff46"
INFO[2023-05-22T17:18:31.385259299+08:00] StartContainer for "242a37a95c30a0ef1015c4732d38d802ff4692ba532b225d1fc88c8f4204ff46" returns successfully
242a37a95c30a0ef1015c4732d38d802ff4692ba532b225d1fc88c8f4204ff46
```

分段时差对比分析

	modified containerd with pulling image	modified containerd without pulling image	kuasar without pulling image
run pod start			
	1177	108	32
run pod end			
	2		
pull image start			
	30	1	1
pull image end			
	2		
create container start			
	6	6	20
Create container end			
	13	5	0.8
Start container start			
	33	41	28.6
Start container end			
	1266	162	85

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- 之前的286/138 ms的测试是从crictl开始计时，到能通过crictl观测到container，这中间还包含了crictl发出请求、等待、crictl查询容器状态等时间；

分段时差对比分析

- fission的性能问题：流程过长，fission部分+k8s部分+containerd部分，时间损耗多。

fission运行短函数

```
root@VM-0-12-ubuntu:~/containerd# bash wasmtests/benchmark/run_wasm_example.sh
RepoTags: wasi_example_main:latest
63767810b1d2d7b28899e2cd58eaf5e522b05c4241328a8c2c746169660c52e8
root@VM-0-12-ubuntu:~/containerd# crictl ps
```

CONTAINER	IMAGE	CREATED	STATE	NAME	ATTEMPT	POD ID	POD
63767810b1d2d	wasi_example_main	3 seconds ago	<u>Exited</u>	wasm	0	a166464c3312f	unknown
abdabe01fa867	wasi_example_main	7 minutes ago	Running	wasm	0	eb941f3b540f5	unknown

```
root@VM-0-12-ubuntu:~/containerd# cat /tmp/wasm.log
2023-05-23T13:10:21.244746713+08:00 stdout F Random number: -403197454
2023-05-23T13:10:21.24647642+08:00 stdout F Random bytes: [239, 233, 67, 104, 96, 6, 95, 93, 182, 232, 224, 201, 187, 16, 138, 222, 229, 67, 85, 191, 233, 191, 129, 39, 109,
14, 114, 139, 110, 179, 37, 140, 80, 78, 3, 123, 1, 222, 157, 74, 142, 47, 164, 226, 119, 95, 163, 93, 95, 235, 130, 229, 155, 165, 178, 190, 237, 82, 71, 27, 4, 110, 212,
75, 33, 94, 50, 225, 25, 137, 73, 153, 51, 108, 215, 70, 109, 117, 117, 230, 251, 26, 175, 238, 107, 196, 125, 114, 202, 119, 242, 100, 100, 63, 29, 215, 3, 178, 218, 114, 1
67, 229, 209, 146, 154, 255, 179, 177, 197, 63, 44, 43, 107, 20, 68, 112, 19, 251, 58, 186, 229, 68, 155, 227, 223, 97, 10, 10]
2023-05-23T13:10:21.246515135+08:00 stdout F Printed from wasi: This is from a main function
2023-05-23T13:10:21.246560685+08:00 stdout F This is from a main function
2023-05-23T13:10:21.246577621+08:00 stdout F The env vars are as follows.
2023-05-23T13:10:21.246711395+08:00 stdout F PATH: /usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin
2023-05-23T13:10:21.246770223+08:00 stdout F HOSTNAME: VM-0-12-ubuntu
2023-05-23T13:10:21.246801476+08:00 stdout F The args are as follows.
2023-05-23T13:10:21.246872678+08:00 stdout F wasi_example_main.wasm
2023-05-23T13:10:21.246909281+08:00 stdout F daemon
2023-05-23T13:10:21.247218062+08:00 stdout F File content is This is in a file
```

fission运行短函数

- 那么我们可以检测容器的状态+设置超时时间
 - 如果设置超时时间，代表是短时函数/算力要求高的函数，等待容器的状态为exited了，读取日志，返回结果，停止运行；
 - 如果超时了，读取结果，停止运行；
 - 如果没有设置超时时间，代表是长时函数，定时输出日志；
- **注意：**如果日志文件（如/tmp/wasm.log）已经存在，那么状态会是running，而不是exited
 - 需要为每个容器设置一个日志目录