

Google Summer of Code 2018

Summary

Overview

KataContainers is a OCI container runtime which leverages hypervisor-based isolation for Linux container stack. This project aims at integrating KataContainers as a underlying runtime of containerd.

In the beginning, we planned to create a containerd-kata runtime plugin for Containerd to integrate it with KataContainers. This plugin would implement the Containerd runtime interfaces, and then call into kata runtime library to implement its functionality. In this way, no independent shim and no proxy process need to exist. The following is the original design.

- [Integrate Containerd with Katacontainers](#)

At the end of June, Containerd community proposed a proposal which makes us modify our previous design. Here you can get more details about this proposal, [Shim API v2](#).

Then we design a new pattern to implement the original aim according to Containerd's proposal. The following is the new design which include the probable architecture and some benefits from shim v2 API.

- [Implement containerd shim v2 API for Kata Containers](#)

Related Work

Phase 1 Pull Request:

1. <https://github.com/kubernetes/frakti/pull/330>
2. <https://github.com/kubernetes/frakti/pull/332>
3. <https://github.com/kubernetes/frakti/pull/335>
4. <https://github.com/kubernetes/frakti/pull/339>

Phase 2 Pull Request:

1. <https://github.com/hyperhq/kata-runtime/pull/1>
2. <https://github.com/hyperhq/kata-runtime/pull/2>

3. <https://github.com/hyperhq/kata-runtime/pull/4>

Currently, We have implemented the shim fundamental functions, such as starting, deleting, stopping ,pausing, resuming, etc.

Node e2e conformance test

Now, the following data is our test result.

```
Ran 123 of 269 Specs in 1333.781 seconds  
FAIL! -- 119 Passed | 4 Failed | 0 Pending | 146 Skipped
```

More details can be found at

<https://github.com/resouer/temp/blob/master/kata-shim-v2/node-e2e-conformance.log>

What is left to do

- Finish the unit tests for shim v2.

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