Subject: [RFC PATCH 0/4] Container Freezer: Reuse Suspend Freezer
Posted by Matt Helsley on Thu, 03 Apr 2008 21:03:16 GMT
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NOTE: Due to problems with my MTA configuration two earlier attempts reached linux-pm but not linux-kernel. Please cc linux-pm@lists.linux-foundation.org on replies.

This patchset is a prototype using the container infrastructure and the swsusp freezer to freeze a group of tasks. I've merely taken Cedric's patches, forward-ported them to 2.6.25-rc8-mm1 and done a small amount of testing.

2 files are defined by the freezer subsystem in the container filesystem :

* "freezer.freeze"

  writing 1 will freeze all tasks and 0 unfreeze
  reading will return the status of the freezer

* "freezer.kill"

  writing <n> will send signal number <n> to all tasks

* Usage :

```
# mkdir /containers/freezer
# mount -t container -ofreezer freezer  /containers/freezer
# mkdir /containers/freezer/0
# echo $some_pid > /containers/freezer/0/tasks
```

to get status of the freezer subsystem :

```
# cat /containers/freezer/0/freezer.freeze
RUNNING
```

to freeze all tasks in the container :

```
# echo 1 > /containers/freezer/0/freezer.freeze
# cat /containers/freezer/0/freezer.freeze
FREEZING
# cat /containers/freezer/0/freezer.freeze
FROZEN
```

to unfreeze all tasks in the container :

```
# echo 1 > /containers/freezer/0/freezer.freeze
# cat /containers/freezer/0/freezer.freeze
```

RUNNING

to kill all tasks in the container :

# echo 9 > /containers/freezer/0/freezer.kill

* Caveats:

- the FROZEN status is calculated and changed when the container
  file "freezer.freeze" is read.
- frozen containers will be unfrozen when a system is resumed after
  a suspend. This is addressed by the last patch.

* Series

Applies to 2.6.25-rc8-mm1

The first patches make the freezer available to all architectures
before implementing the freezer subsystem.

[RFC PATCH 1/4] Add TIF_FREEZE flag to all architectures
[RFC PATCH 2/4] Make refrigerator always available
[RFC PATCH 3/4] Implement freezer cgroup subsystem
[RFC PATCH 4/4] Skip frozen cgroups during power management resume

Each patch compiles, boots, and survives basic LTP containers and controllers
tests.

Comments are welcome.

Cheers,
-Matt Helsley

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Containers mailing list
Containers@lists.linux-foundation.org
https://lists.linux-foundation.org/mailman/listinfo/containers