



Flatcar Container Linux Monthly Community Meeting

10 August 2021

Agenda

Welcome

NEW: News!

Spotlight: CGroupsV2 / Docker 20.10 coming to Flatcar!

Spotlight: Community contribution - Locksmith fix

Status update: ARM64

Release planning

Q&A / Discussion



Welcome!
(please say “hi”)

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News

The latest on Flatcar Linux



NEWS

New major Stable 2905.2.0 had issues for some use cases

- Workaround proposed, root cause fixed, tests added

We now have our roadmap publicly available!

- Learn more about what we are planning for the future
- And of course, bring in your own ideas!
- Find the roadmap here:

<https://github.com/orgs/kinvolk/projects/16>





Postmortems

Stable 2905.2.0 caused issues

Cilium Networking issue: [#455](#)

- Cilium community raised the issue, discussed in [Cilium Slack](#)
- Flatcar Team engaged, status + deep dive discussion in [Flatcar Chat](#)
- Swift root cause + workaround found w/ community support
- Fix proposed, tested, merged on the same day, including test case

Docker containers w/ securityContext did not start: [#457](#)

- Team engaged via issue tracker, deep dive w/ issue reporter
- Reporter found root cause and proposed a fix, leading to a [PR](#) on the same day

GCE networking route creation issue: [#459](#)

- Reporter proposed a fix with the bug report
- [PR](#) based on proposed fix on the same day

Thank you, Flatcar community!

(also, please run Beta canaries 😊)



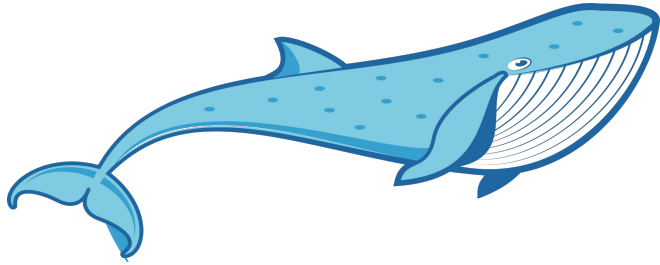
Sunday 1 August: What happened?

- ❑ **07:26** first report from Atlassian that AMIs were unavailable, since ~03:30. Not clear at this time that this has broader implications.
- ❑ **~10am** We find our AWS account has been suspended. Immediately raise with AWS Support.
 - ❑ Realize this means all images hosted under flatcar-linux.net domain are unavailable too - impacting users on all platforms, not just AWS
 - ❑ This is also the reason AMIs disappeared - when the account was suspended, all public images were automatically marked as private
- ❑ **From 11:45am:** More customer reports and community issues (GitHub, Twitter) come in from Adobe, Giant Swarm, Utility Warehouse, others
- ❑ **14:41** We start moving flatcar-linux.net hosting to another account. This requires changes to the infrastructure code and DNS hosting.
- ❑ **15:26** We email Flatcar community member at AWS (a US-based Solutions Architect, so early morning for him); he replies at 17:44 saying he's escalated internally
- ❑ **16:46** Twitter DM with @awssupport pointing to the case ID
- ❑ **17:27** Complete rehoming of flatcar-linux.net, so all images except the AMIs are now available
- ❑ **18:21** @awssupport DM: "I have personally reached out to one of our managers on our Support team to make sure that someone takes ownership of your case."
- ❑ **22:19** First response from AWS Support, confirming account has been reinstated
- ❑ **08:43 (Monday):** All stable, beta and alpha images marked as public.



Why did AWS suspend our account?

- ❑ Short answer: we don't know. We have asked via multiple channels and received no response.
- ❑ Long answer:
 - ❑ We were notified by AWS Support on 21 July that our account had been flagged for abnormal activity (we assume access from remote team member locations), resulting in a temporary block to some services.
 - ❑ We took all requested actions and replied to confirm, but without any response on the ticket from AWS Support.
 - ❑ As we could not build for AWS, this was delaying the Flatcar 2905 release. We therefore followed up via our community contact to get the case escalated and our account unblocked (on 27 July) to enable the release to happen.
 - ❑ We received further requests to change our password / rotate credentials (which we did).
 - ❑ Last email from AWS Support was Saturday, July 31, asking us to again change password, but also saying "We have now resolved this support case, but please feel free to reopen it."
 - ❑ No warning following that last email that the account would be suspended, nor notification that it had been.
- ❑ Written post-mortem to follow; lessons for our team and community that we intend to learn from



**CGroupsV2,
Docker 20.10
Coming to Flatcar!**

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CGroupsV2

- Control Groups V2/Unified control group hierarchy
- Flatcar is migrating from CGroupsV1 -> CGroupsV2
- Updates incoming: Docker 20.10, Systemd v248
- Why V2?
 - eBPF
 - Rootless containers/delegation
 - Upstream support
 - Better integrated resource control
- Upstream support in container ecosystem is mature
- Migration disruptive to Kubernetes clusters



CGroupsV2 - prerequisites

Requirements:

- Docker 20.10
- Kubernetes v1.19+
- **systemd cgroup** driver

If you need to support older versions, you **must** stay on cgroupsv1

- *hybrid* layout not recommended: badly supported, was a temporary measure that should be considered obsolete in 2021
- Systemd reports system “*tainted*” if not using v2

Ensure your configuration matches across:

Docker/Kubelet/Containerd



CGroupsV2 - migration

- Current alpha v2955.0.0
- Next alpha release (~ v2969.0.0):
 - Existing nodes stay on CGroupsV1 (``systemd.unified_cgroup_hierarchy=0`` in `/usr/share/oem/grub.cfg`)
 - New nodes start with CGroupsV2
 - Possible to provision new nodes with CGroupsV1 or migrate old nodes to CGroupsV2
<https://github.com/kinvolk/flatcar-docs/pull/172>
- If you're running Kubernetes:
 - Check impact on your deployment: **test alpha/beta**
 - <https://kubernetes.io/docs/tasks/administer-cluster/kubeadm/configure-cgroup-driver/>
 - Consider provisioning new nodes

CGroupsV2 - timeline

- CGroupsV2 will propagate to beta, and then stable
- Expect change to land in stable around v3019 (mid October 2021)
- We're trying to make this update as non-disruptive as possible - please report any issues you come across



Contributing to Flatcar Fixing locksmith

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How I started contributing to Flatcar



\$ whoami

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I am so excited

This is my first talk





How I got to know about flatcar?



How I started my journey?

- Started learning golang.
- Getting an overview what container linux is.
- Learn about etcd.
- Build the locksmith project in local.



What was the issue?

If no semaphore was acquired before then the
locksmithd will reboot outside of the reboot window
after an update



What was the expected behavior?

- Try to get the semaphore in infinite loop.
- If it fails but still in the reboot window then sleep for a certain interval.
- If it fail but not in reboot window then sleep until the next window.
- If it succeed then reboot.



What issue I faced while starting?

- Not able to apply ignition and reproduce the issue.
- I couldn't replace my locksmithctl binary with the default binary in the flatcar instance.



What I did to solve the issue?

- I went through the package documentation that was used in the file(Ex - timeutil, lock)
- I added a function **waitForRebootWindow** that -
 - Get the next reboot window period
 - If we are outside of the window then sleep until it.



What I got from this community?

Amazing folks

Got to learn a lot of things

A new place to meet people virtually through community call.



**Now I am looking to contribute further in
the flatcar**



Thank You Everyone



Status update: ARM64

Release tests status

- Kola Test Failure modes
 - SELinux: boolean, enforce
 - Etcd related: member discovery, kubeadm, docker, locksmith
 - SSH / connection issues: etcdv3, flannel, TLS
 - Soft-lockups from QEMU running slowly?



Release tests status

- Test failures now tracked in a GH issue:
<https://github.com/kinvolk/Flatcar/issues/474>
- Making Kola stricter:
<https://github.com/kinvolk/Flatcar/issues/470>



Status and WIP items

- Get your hands dirty!

Ping me on IRC/Matrix, nick “wrl”



Release Planning

⇒ Planning Board



Jump aboard!

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Calls to Action

Spread the word

Become a contributor (github.com/kinvolk/Flatcar)

Join the community ([IRC/Matrix, email list](#))

Join us for the next community call

Share your feedback - how can we better support and grow the community? What should we cover in future community calls?



Q&A / Discussion

Thank you!

Github: [kinvolk/flatcar](https://github.com/kinvolk/flatcar)

Twitter: [flatcar_linux](https://twitter.com/flatcar_linux)

