

Hyperscale SIG update

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CentOS Dojo October 2021

Agenda

- SIG recap
- Deliverables and recent work
- Demo
- Coming up

Hyperscale SIG

- CentOS Stream focus
- Large-scale infrastructure
- Foster cross-company collaboration on packages and tooling
- Bring in-house development out in the open
- Open to anybody interested in working in this space

Documentation

- Charter: <https://wiki.centos.org/SpecialInterestGroup/Hyperscale>
- Activity reports:
 - 2021Q3: <https://blog.centos.org/2021/10/centos-hyperscale-sig-quarterly-report-for-2021q3/>
 - 2021Q2: <https://blog.centos.org/2021/06/centos-hyperscale-sig-quarterly-report-for-2021q2/>
 - 2021Q1: <https://blog.centos.org/2021/04/centos-hyperscale-sig-quarterly-report/>
- User documentation: <https://sigs.centos.org/hyperscale>

SIG health

- Established in Jan 2021 with 6 founding members
- +8 members since then
- #centos-hyperscale on Libera.Chat
- Bi-weekly IRC meetings
- Monthly hackathons / hangouts
- Issue tracker: <https://pagure.io/centos-sig-hyperscale/sig>
- Conference talks
 - CentOS Dojo FOSDEM 2021: <https://www.youtube.com/watch?v=Kg7FqVGaZxs>
 - DevConf.cz 2021: <https://www.youtube.com/watch?v=K8x4CleTCc>
 - FOSDEM 2021: <https://fosdem.org/2021/schedule/event/desktoplinuxmgmtatfacebook/>
 - LISA21: <https://www.usenix.org/conference/lisa21/presentation/cavalca>
 - CentOS Dojo May 2021: <https://www.youtube.com/watch?v=Ehsvz7-IDuA>

Hyperscale SIG scope

- Faster moving package backports
- Policy and configuration alternatives
- Large-scale testing enablement
- Kernel
- Live DVD ISOs

Package backports

- Delivered to the Hyperscale main repository
 - `dnf install centos-release-hyperscale`
- Drop in replacements for stock CentOS packages
- File bugs on <https://pagure.io/centos-sig-hyperscale/package-bugs>
- Now built against (and requiring) EPEL

Architecture support

- Hyperscale initially only targeted `x86_64`
- Now building packages for `aarch64` too!
- Existing packages are still being rebuilt

systemd

- SIG branch tracking the latest upstream (currently 249)
- Defaults to unified hierarchy (cgroup2)
- systemd-oomd (needs PSI)
- systemd-networkd, systemd-resolved
- Experimental SELinux enablement
- <https://github.com/systemd/systemd/blob/main/NEWS>

systemd

- Public repo to track development and stage patches
 - <https://pagure.io/centos-sig-hyperscale/systemd>
- Public repo for releng tools and scripts
 - <https://pagure.io/centos-sig-hyperscale/systemd-releng>
- Contbuild on CentOS CI
 - Based on the current Hyperscale packaging
 - Daily rebuilds of the upstream git master
 - VM testing: <https://pagure.io/centos-infra/issue/308>

Information for user [hyperscalebot](#)

Name hyperscalebot

ID 255

Tasks [650](#)

Packages No packages

Builds

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NVR	Finished ▾	State
systemd-249-1.20211005.e66ee1d.hs+fb.el8	2021-10-05 17:34:29	✓
systemd-249-1.20211005.e66ee1d.hs.el8	2021-10-05 17:15:56	✓
systemd-249-1.20211004.c82dc15.hs+fb.el8	2021-10-04 17:37:37	✓
systemd-249-1.20211004.c82dc15.hs.el8	2021-10-04 17:19:08	✓
systemd-249-1.20211003.c40671b.hs+fb.el8	2021-10-03 17:37:05	✓
systemd-249-1.20211003.c40671b.hs.el8	2021-10-03 17:18:37	✓
systemd-249-1.20211002.c40671b.hs+fb.el8	2021-10-02 17:37:06	✓
systemd-249-1.20211002.c40671b.hs.el8	2021-10-02 17:18:55	✓
systemd-249-1.20211001.964ccab.hs+fb.el8	2021-10-01 17:31:14	✓
systemd-249-1.20211001.964ccab.hs.el8	2021-10-01 17:16:06	✓

LLVM 12

- Used to ship a non-modular LLVM 12 build
- Now retired in favor of the upstream one
- https://bugzilla.redhat.com/show_bug.cgi?id=1952248

Large-scale testing

- Provide a way to test distro-wide changes in production settings
- DNF/RPM Copy-on-Write
 - <https://fedoraproject.org/wiki/Changes/RPMCoW>
 - Requires patched packaging stack
 - Currently deployed in production at FB
- Released to a dedicated “experimental” repo
 - `dnf install centos-release-hyperscale-experimental`

Kernel

- Test 5.12 kernel based on kernel-ark
- Development tree: <https://pagure.io/centos-sig-hyperscale/linux>
- Planning to rebase onto 5.14 and track CentOS Stream 9 going forward
- Btrfs support
- Outstanding issues
 - Secure boot: <https://pagure.io/centos-infra/issue/307>
 - <https://pagure.io/centos-sig-hyperscale/sig/issue/7>

Kernel userspace

- Btrfs
 - btrfs-progs backported from Fedora, currently at 5.13.1
 - Restored btrfs support in the storage stack and installer
 - Anaconda installer development tree: <https://pagure.io/centos-sig-hyperscale/anaconda>
 - Released to dedicated “spin” repo for media
 - Used for Hyperscale spin media
- kpatch
 - Updated to 0.9.4
 - Includes `kpatch-build`
 - `CONFIG_PRINTK_INDEX` support

Container image

- Minimal container image based on Hyperscale repos and packages
- Build from scratch: <https://pagure.io/centos-sig-hyperscale/containers-releeng>
- <https://quay.io/centoshyperscale/centos>
- `podman run -a stdin,stdout,stderr -t quay.io/centoshyperscale/centos:stream8`

Live media spin

- Two CentOS Stream 8 spins: GNOME and KDE Plasma
- Live DVD ISO images with Hyperscale repos and packages
- Leveraging our kernel with btrfs support out of the box
- Download: <https://sigs.centos.org/hyperscale/spins/workstation/>
- Report issues: <https://pagure.io/centos-sig-hyperscale/spin-bugs>

Demo

Coming up

- Btrfs transactional updates
 - <https://pagure.io/centos-sig-hyperscale/sig/issue/37>
- Updated kernel package based on CentOS Stream 9
- CBS-based live media image builds
- Updated QEMU package in EPEL
- Continuous-build pipeline for the container image
- Hyperscale-enabled cloud images

CentOS Stream 9

- It's here!
 - Sources: <https://gitlab.com/redhat/centos-stream/rpms>
 - Koji: <https://kojihub.stream.centos.org>
 - Composes: <https://composes.stream.centos.org/production/>
 - Mirror: <http://mirror.stream.centos.org>
- Already started some builds in CBS, waiting for release tags
- systemd daily builds coming up too
 - Currently blocked on libiptc
 - <https://pagure.io/centos-sig-hyperscale/package-bugs/issue/9>

Resources

- <https://wiki.centos.org/SpecialInterestGroup/Hyperscale>
- <https://sigs.centos.org/hyperscale>
- #centos-hyperscale on Libera.Chat
- Bi-weekly meetings and monthly VC hangout
 - <https://www.centos.org/community/calendar>
- <https://pagure.io/centos-sig-hyperscale/sig> issue tracker
- centos-devel mailing list

Questions?