

datto

My Experience

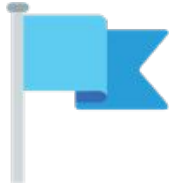
Contributing to CentOS Stream

Neal Gompa

Who am I?

- Professional technologist
- Linux user for nearly fifteen years
- Contributor and developer in Fedora, CentOS, openSUSE, Mageia, and OpenMandriva Linux distributions
- Contributor to RPM, DNF, and various related projects
- Senior DevOps Engineer at Datto, Inc.

All About Datto



Founded in 2007



22 global locations



2,100 employees worldwide & growing



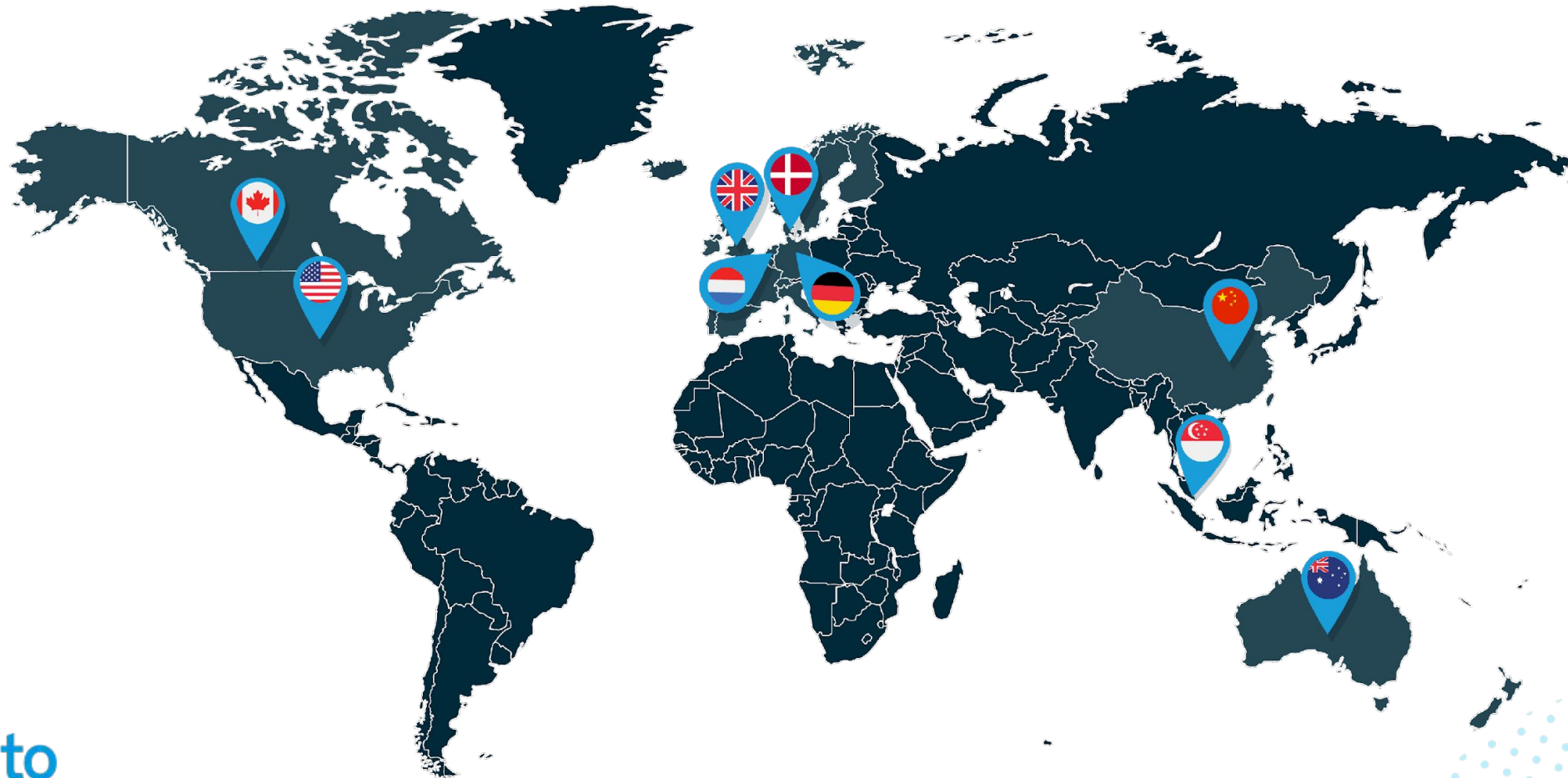
17,000 managed service provider partners



100% channel only

Datto Locations Around The World

Local offices in **9 countries** helping MSPs serve **over one million SMBs** around the world.



What We Offer

Integrated, secure solutions you can build your business on

Unified Continuity

Superior data protection wherever data resides - on premises, private or public cloud, or SaaS apps



Datto Continuity (BCDR)

- SIRIS (physical, virtual, imaged)
- ALTO
- Datto Continuity for Microsoft Azure



Datto SaaS Protection



Datto SaaS Defense



Cloud Continuity for PCs



Datto Workplace



Datto File Protection

Business Management

Intelligent, cloud-based IT service delivery that enable efficiency and profitability at scale



Professional Services Automation (PSA)



Remote Monitoring & Management (RMM)



Datto Commerce

Networking

Cloud-managed MSP-centric networking solutions to connect global business networks



Datto Networking

- WiFi Access Points
- Edge Routers
- Switches

Introducing CentOS Stream

CentOS Stream

CentOS Stream is a continuously updated Linux distribution that gets the latest code that will become the next Red Hat Enterprise Linux release.

Initially released in September 2019 with CentOS Stream 8 (tracking the next minor release for RHEL 8), CentOS Stream 9 (currently tracking the initial release of RHEL 9) was made available in April 2021 and formally launched in November 2021.



CentOS

The Community **ENTERprise** Operating System

Working with CentOS Stream 8

CentOS Stream 8

CentOS Stream 8 is a continuously developed tree that becomes the next minor version of RHEL 8.

However, it was launched more like a proof-of-concept of the model *after* RHEL 8 was released. This has led to some awkwardness in the implementation.



CentOS

The Community ENTERprise Operating System

CentOS Stream 8 Workflow

The workflow is simple and difficult:

1. File a bug in the Red Hat Bugzilla
2. Attach a properly formatted patch
3. ???
4. Profit (maybe...)

This workflow is simple, but it's alien to all but the oldest contributors who worked in the pre-forge world in Fedora Linux. It's also characterized by the absolute lack of feedback until *something* happens.

(Examples: [RHBZ#1983309](#), [RHBZ#1847124](#), [RHBZ#1988762](#), [RHBZ#1991787](#))

The screenshot shows a Red Hat Bugzilla page for bug 1983309. The bug title is "Blivet is broken with MD devices with names that look like BIOS drive numbers". The status is "CLOSED ERRATA". The product is "Red Hat Enterprise Linux 8" and the component is "python-blivet". The version is "CentOS Stream". The bug was reported on 2021-07-17 14:44 UTC by Neal Gomba and modified on 2021-11-10 01:30 UTC. The bug is fixed in version "python-blivet-3.4.0-3.el8". The target milestone is "beta". The bug is assigned to Vojtech Trefny. The QA contact is "Release Test Team". The bug has one attachment: "Dist-Git patch to resolve this" (4.76 KB, application/mbox), uploaded on 2021-07-17 12:11 UTC by Neal Gomba. The bug is linked to a Red Hat Product Errata (RHEA-2021:4297) with a priority of 0. The bug description states: "With the rebase to blivet 3.4.0, Anaconda dies when trying to work with MD devices that have names similar to BIOS drive numbers, like in bug-1060790. Please backport the fix from upstream to resolve this. Version-Release number of selected component (if applicable): 3.4.0-2.el8".

Working with CentOS Stream 9

CentOS Stream 9

CentOS Stream 9 is a continuously developed tree that becomes the next minor version of RHEL 9. This release differs from the previous version in that it became available shortly after branching from Fedora Linux 34, and *long* before RHEL 9 released. This release takes the lessons learned from the experiences in CentOS Stream 8 and implements a much better contributor-centric approach.



CentOS

The Community **ENTerprise Operating System**

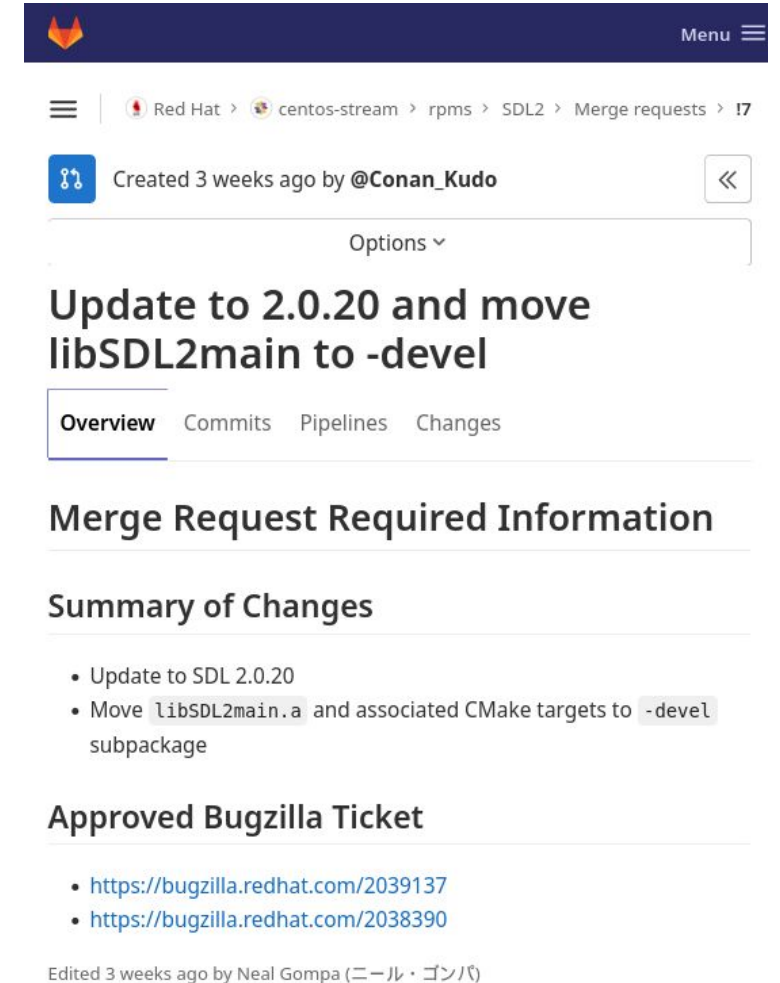
CentOS Stream 9 Workflow

The workflow is simple(-ish):

1. File a bug in the Red Hat Bugzilla
2. Create a merge request on GitLab.com
3. ???
4. Profit (maybe...)

This workflow mimics the workflow that Fedora Linux uses today with src.fedoraproject.org, with the primary caveat being that RHEL maintainers must upload sources (e.g. tarballs) to Dist-Git.

(Examples: [gl#redhat/centos-stream/rpms/redhat-rpm-config!6](https://gitlab.com/redhat/centos-stream/rpms/redhat-rpm-config),
[gl#redhat/centos-stream/rpms/nginx!6](https://gitlab.com/redhat/centos-stream/rpms/nginx), [gl#redhat/centos-stream/rpms/httpd!37](https://gitlab.com/redhat/centos-stream/rpms/httpd),
[gl#redhat/centos-stream/rpms/SDL2!7](https://gitlab.com/redhat/centos-stream/rpms/SDL2))



The screenshot shows a GitLab merge request interface. At the top, there's a dark blue header with the GitLab logo and a 'Menu' button. Below the header, a breadcrumb trail reads: 'Red Hat > centos-stream > rpms > SDL2 > Merge requests > 17'. The main content area features a blue box with a person icon and the text 'Created 3 weeks ago by @Conan_Kudo'. Below this is a dropdown menu labeled 'Options'. The title of the merge request is 'Update to 2.0.20 and move libSDL2main to -devel'. Underneath the title are tabs for 'Overview', 'Commits', 'Pipelines', and 'Changes'. A section titled 'Merge Request Required Information' is followed by a 'Summary of Changes' section, which lists two items: 'Update to SDL 2.0.20' and 'Move libSDL2main.a and associated CMake targets to -devel subpackage'. Below this is an 'Approved Bugzilla Ticket' section with two links: 'https://bugzilla.redhat.com/2039137' and 'https://bugzilla.redhat.com/2038390'. At the bottom, it says 'Edited 3 weeks ago by Neal Gomba (ニール・ゴンパ)'.

Working with CentOS Stream 9

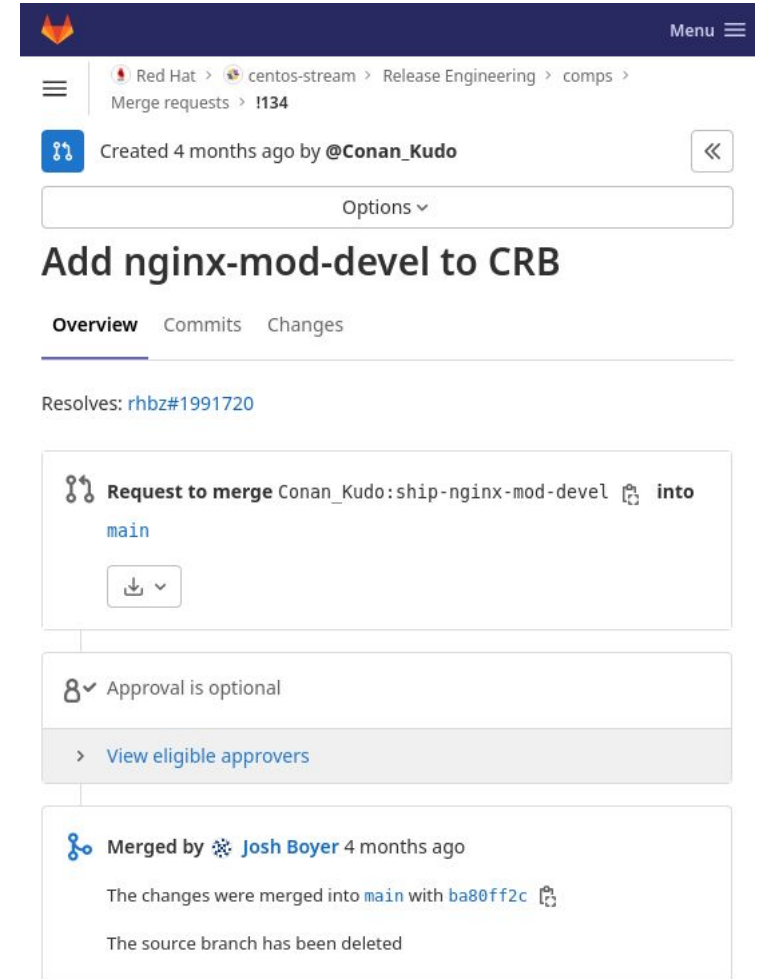
... more deeply than ever before?

CentOS Stream 9 Rel-Eng

The release engineering for CentOS Stream is *also* open to contribution! It uses the same workflow as contributions to packages. This is key for the community to help make available the content needed from RHEL.

This includes both the composition groups (comps) and package filtering (pungi), among other things.

(Examples: [gl#redhat/centos-stream/release-engineering/comps!134](https://github.com/redhat/centos-stream/release-engineering/comps!134),
[gl#redhat/centos-stream/release-engineering/pungi-centos!223](https://github.com/redhat/centos-stream/release-engineering/pungi-centos!223))



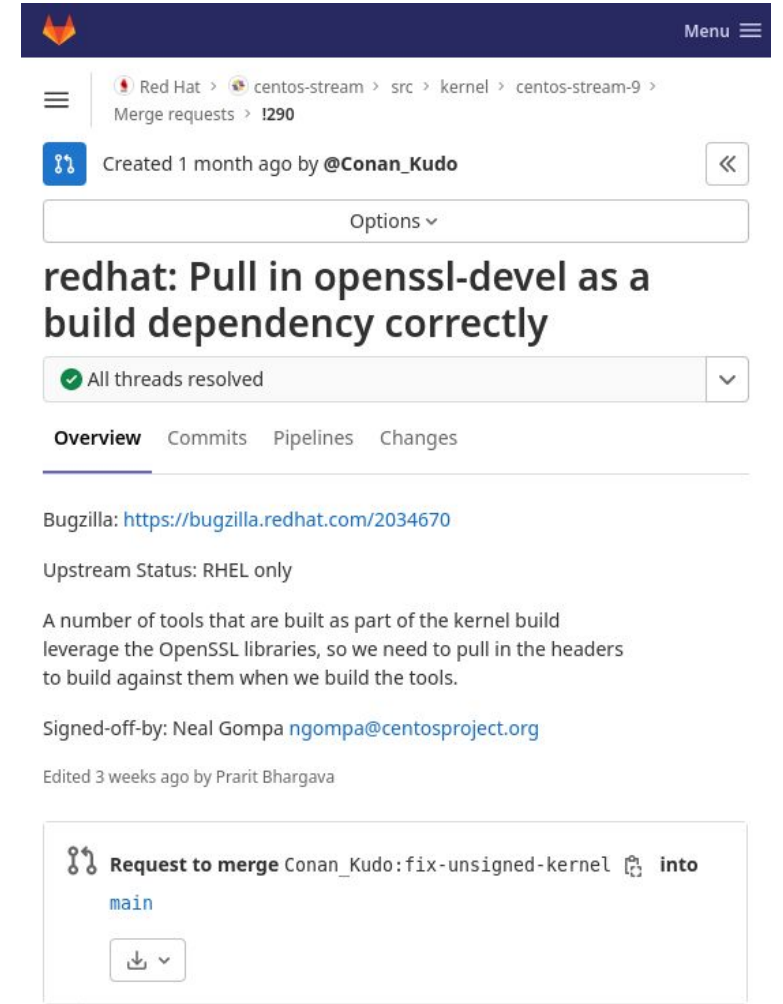
The screenshot shows a GitHub merge request interface. At the top, the breadcrumb navigation reads: Red Hat > centos-stream > Release Engineering > comps > Merge requests > 1134. The merge request was created 4 months ago by @Conan_Kudo. Below the title "Add nginx-mod-devel to CRB", there are tabs for "Overview", "Commits", and "Changes", with "Overview" selected. It indicates that the merge request "Resolves: rhbz#1991720". The main content area shows a "Request to merge" from Conan_Kudo:ship-nginx-mod-devel into the main branch, with a download icon. Below this, it states "Approval is optional" and provides a link to "View eligible approvers". The final section shows that the merge was completed by Josh Boyer 4 months ago, with the changes merged into main with commit hash ba80ff2c, and a note that the source branch has been deleted.

CentOS Stream 9 Kernel

The kernel for CentOS Stream is *also* open to contribution! Unlike other parts of CentOS Stream, the kernel has a different workflow. It's maintained as a “source-git” project, meaning the packaging is part of the source code for the kernel itself. Changes are commits to the source tree instead of patches in the spec.

The RHEL Kernel developers maintain documentation for this, and the Hyperscale SIG has a “cheat sheet” for this process.

(Examples: [gl#redhat/centos-stream/src/kernel/centos-stream-9!250](https://github.com/redhat/cenos-stream/src/kernel/centos-stream-9!250),
[gl#redhat/centos-stream/src/kernel/centos-stream-9!262](https://github.com/redhat/centos-stream/src/kernel/centos-stream-9!262),
[gl#redhat/centos-stream/src/kernel/centos-stream-9!290](https://github.com/redhat/centos-stream/src/kernel/centos-stream-9!290),
[gl#redhat/centos-stream/src/kernel/centos-stream-9!292](https://github.com/redhat/centos-stream/src/kernel/centos-stream-9!292))



The screenshot shows a GitHub merge request interface. At the top, the breadcrumb navigation reads: Red Hat > centos-stream > src > kernel > centos-stream-9 > Merge requests > 1290. The merge request was created 1 month ago by @Conan_Kudo. Below this, there is an 'Options' dropdown menu. The title of the merge request is 'redhat: Pull in openssl-devel as a build dependency correctly'. A status bar indicates 'All threads resolved'. Below the status bar, there are tabs for 'Overview', 'Commits', 'Pipelines', and 'Changes'. A 'Bugzilla' link is provided: <https://bugzilla.redhat.com/2034670>. The 'Upstream Status' is 'RHEL only'. A description follows: 'A number of tools that are built as part of the kernel build leverage the OpenSSL libraries, so we need to pull in the headers to build against them when we build the tools.' The 'Signed-off-by' is Neal Gomba ngompa@centosproject.org. It was edited 3 weeks ago by Prarit Bhargava. At the bottom, there is a 'Request to merge' section showing the merge target 'main' and a 'Download' button.

Working with CentOS Stream 9

... is good, right?

CentOS Stream 9 is a Winner

The improved workflows and expanded opportunities to contribute in CentOS Stream 9 make it a solid choice for an enterprise-grade community operating system.

The process is not perfect, but it's clear that there's an honest good-faith effort to establish a cooperative platform between Red Hat and the CentOS community to build the premier ***community enterprise operating system.***



**CentOS Stream is made for
you to make it what you
want it to be!**

References

- CentOS Stream:
<https://www.centos.org/centos-stream/>
- CentOS Stream 9: <https://centos.org/stream9>
- CentOS Stream Contribution Guide:
<https://docs.centos.org/en-US/stream-contrib/>
- CentOS Stream Kernel Documentation:
<https://redhat.gitlab.io/centos-stream/src/kernel/documentation/>
- CentOS Hyperscale SIG Kernel Cheatsheet:
<https://sigs.centos.org/hyperscale/internal/kernel/#contributing-to-the-hyperscale-kernel-code>

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