Integrating GitLab into the Red Hat kernel workflow

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How to get Linus to accept a Pull Request from GitLab?
Motivation?

- Upstream discussions about using git forges
- Red Hat’s modernization effort led to the migration of its kernel workflow to GitLab
- Red Hat offering to lead this effort
Workflow Issues?

- Maintainer and emails (Patchwork)
  - tracking reviews
  - tracking versions
  - tracking build/test results
  - High volume manual work
- Business logic not front and center (bugzilla)
- CI was a bolt on
GitLab

- Integrated approval / blocking rules
  - Who needs to review is clear and notified
- Integrated version tracking
- Integrated CI workflow
- Webhooks for business logic
- Workflow rules are front and center

Maintainer monitor the process and are not the bottlenecks.
WHAT WE DID
(How we transitioned a large development team to GitLab)
Maintainers
  - Too many small details
    - review comments
    - chasing reviewers
  - Too much email to sort through
• Reviewers
  ○ What has to be reviewed and by when?
  ○ Easy to miss replies on a mailing list
  ○ Easy to forget about a review
● Contributors
  ○ No human can keep track of all process details
  ○ Easy to miss comments on a mailing list
Data Organization
(insert lab mr show picture here)
Automation: webhooks
- DCO/Signed-off-by:
- Dependencies
- Approval Rules: (aka MAINTAINERS & get_maintainers.pl)
- scoped labels to indicate problems

CKI
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Maintainers
- All data contained in Merge Requests in a project repository
- Easy/easier to track
- GitLab provides threads that can be resolved
- Labels e.g.) Bugzilla::OK or CKI::OK
Reviewers

- One place to find code: code repository
- Command line tools, lab and rhstatus
- webhooks’ Approval rules used to assign reviews
- Labels: Acks::NeedsReview or Acks::OK
Contributors

- lab command line tool
- webhooks run on submitted MR regardless of status
  - rhcheckpatch.pl
- Feedback in central location
Tooling

- [https://github.com/zaquestion/lab](https://github.com/zaquestion/lab)
- [https://gitlab.com/prarit/rhstatus](https://gitlab.com/prarit/rhstatus)
- [https://gitlab.com/redhat/centos-stream/src/kernel/tools](https://gitlab.com/redhat/centos-stream/src/kernel/tools)
  - git-backport

Documentation

- [https://red.ht/kernel_workflow_doc](https://red.ht/kernel_workflow_doc)

Newsreader through GitLab RSS feeds
GitLab Relationship

- resolved over 15 issues in the last 6 months
- dedicated developer pushing changes (2 accepted contributions) [Lucas Zampieri]
- strategic partnership
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Known Issues

- Chain of trust
- Merge request logs
Thoughts?