New to QEMU:
A Developer's Guide to Contributing

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Presentation available at: http://qemu.rocks/kvm2014-1
About QEMU
Active OSS project:

- Many contributors
  - ~800 contributors, total
  - ~330 contributors, over the last year
- ~6000 commits over the last year
Development Flow

- Primarily email driven
  - Devel list: qemu-devel@nongnu.org
  - Trivial patches: qemu-trivial@nongnu.org

- Uses git, of course
  - git://git.qemu.org/qemu.git

- Bugs tracked on Launchpad
  - https://bugs.launchpad.net/qemu/

- The wiki is a great guide
  - http://wiki.qemu.org/Contribute/StartHere

- IRC – #qemu on irc.oftc.net
Contributing
How can you contribute?

- Submit patches
- Review patches
- Documentation
- File bug reports
Creating Patches
Patch process overview

Submit patch(es) → Patches reviewed by other contributors → Needs Changes?

Yes → Fix patches, rebase to master

No → Sub-system maintainer applies patches to their repo → Sub-system maintainer sends pull request to QEMU maintainer

QEMU maintainer applies to git master
Creating Patches

- Each individual patch is a logical changeset
  - Avoid lumping multiple things in one patch
- Each patch compiles & works
  - Don't break `git-bisect`
  - Your series may be partially applied
  - `make check`
    - `make check-help`
  - Tools such as `git-compile-check` may be useful
    - `git-compile-check` on GitHub
Creating Patches

- Meaningful commit messages
  - Commit message gives the 'why'
  - First line is the subject
  - Indicate subsystem by first word
    - e.g. "block:", "pci:", etc..
- Make sure patch is against master
  - Rebase to master for your revisions
- Each patch follows coding guidelines
  - HACKING
  - ./scripts/checkpatch.pl
  - codespell
commit 9aebf3b89281a173d2dfeee379b800be5e3f363e
Author: Kevin Wolf <kwolf@redhat.com>
Date: Thu Sep 25 09:54:02 2014 +0200

block: Validate node-name

The device_name of a BlockDriverState is currently checked because it is always used as a QemuOpts ID and qemu_opts_create() checks whether such IDs are wellformed.

node-name is supposed to share the same namespace, but it isn't checked currently. This patch adds explicit checks both for device_name and node-name so that the same rules will still apply even if QemuOpts won't be used any more at some point.

qemu-img used to use names with spaces in them, which isn't allowed any more. Replace them with underscores.

Signed-off-by: Kevin Wolf <kwolf@redhat.com>
Reviewed-by: Stefan Hajnoczi <stefanha@redhat.com>
Author: Some User <user@gemu.org>
Date: Thu Sep 25 09:54:02 2014 +0200

block: new function open_fragile_bits()

Implement open_fragile_bits() for block layer.

Signed-off-by: Some User <user@gemu.org>
Formatting Your Patches

- Sign your patch!
  - Must have Signed-off-by:
    Your Name <your@email.address>
- Subject line prefix
  - [PATCH]
  - [PATCH v2]
  - [PATCH v2 1/8]
    - Cover letter is 0
Formatting Your Patches

- For patch series, include a cover letter
- Also useful to thread the emails
- Easiest way is to use `git-format-patch`

# For example:
```
git format-patch --subject-prefix="PATCH" -s \ 
    --find-renames --thread \ 
    --cover my_branch..
```
Sending patches

- Send patches inline
  - (not as attachments)
- CC maintainers for your changes
  - see MAINTAINERS file
  - ./scripts/get_maintainer.pl
- Recommended `git send-email`
  - Other mail agents may munge the patches

# For example:
```
git send-email --to=qemu-devel@nongnu.org
  --cc=kwolf@redhat.com
  --cc=stefanha@redhat.com
  --suppress-cc=all *.patch
```
Caring for your patches

- Don't "Fire and forget"
  - Watch email for reviews, comments
- If you get a review, address it
  - If you don't agree with feedback, respond with why
- Always use Reply-all
- If you don't get a review, don't fret
  - Wait several days, and then ping
    - Ask a non-maintainer to review, if appropriate
Review Patches
Review Patches

- Focus on the code, not the submitter
- Code syntax
- Code logic, function
- Challenge yourself to find bugs!
  - But no need for excessive bike-shedding
- If satisfied, indicate it
  - Reply-all with "Reviewed-by: Your Name <your@email.address>"
File bug reports
File bug reports

- Make sure bug still exists on latest release
  - git master is even better
- Provide all relevant info:
  - QEMU command line
  - Libvirt? oVirt? OpenStack?
- What were you doing
  - QAPI command?
  - Host system logs?
- What were you running it on?
  - What guest, too?
- More info is better than too little
Documentation
Documentation

  - Ask an existing contributor for an account
  - Or, ask on qemu-devel@nongnu.org
- docs/
  - In the git repo
- In JSON / QMP / HMP files
  - qapi-schema.json
  - qapi/*.json
  - *.hx
- Man pages
  - *.texi files
Questions?
THE END

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