



New to QEMU:

A Developer's Guide to Contributing

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Presentation available at: <http://qemu.rocks/kvm2014-1>



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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](https://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



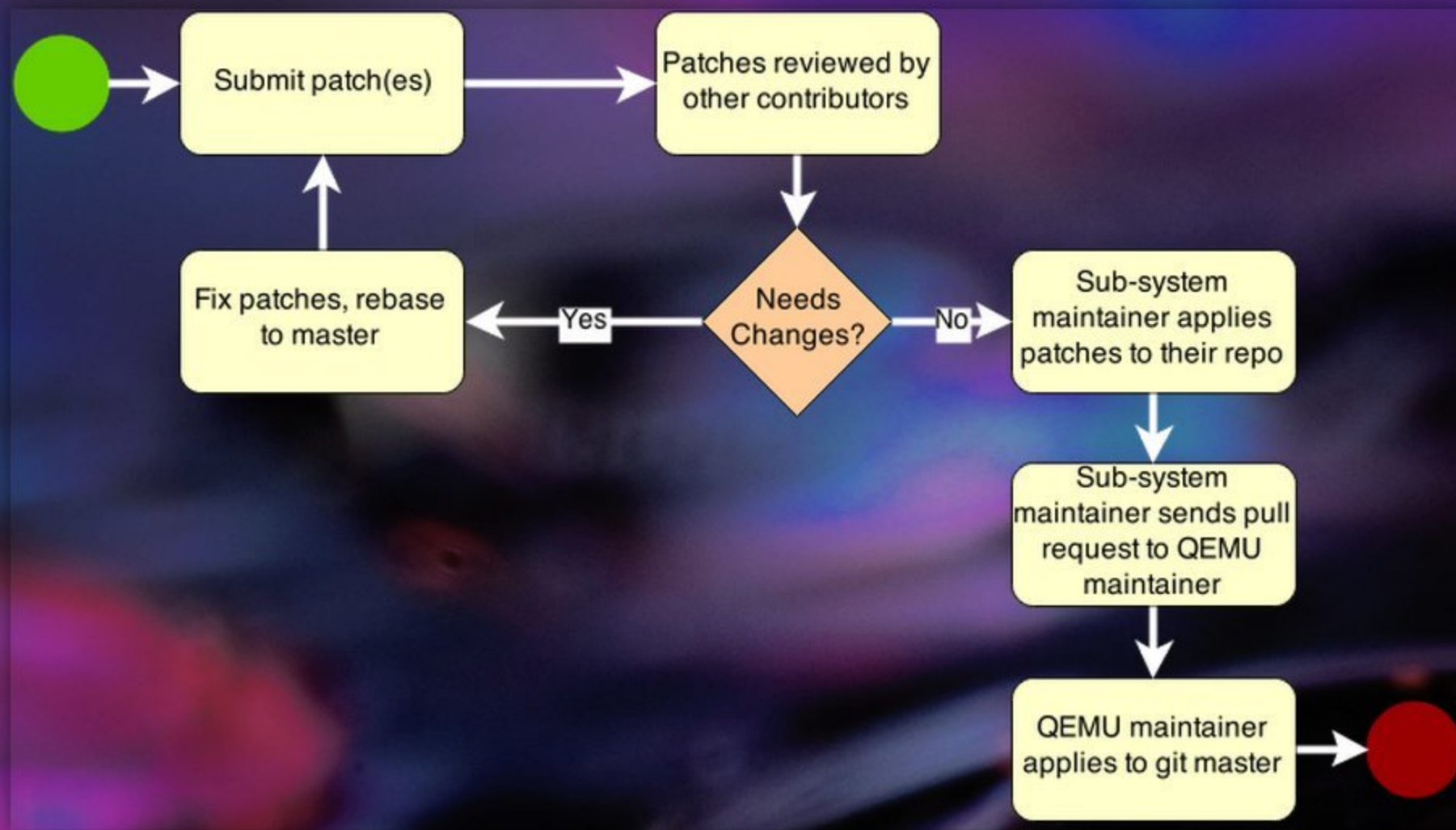
Creating Patches



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Patch process overview



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@qemu.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@qemu.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



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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

- Wiki - <http://wiki.qemu.org>
 - └─ 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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