

## OsmoTRX - Bug #2721

### OsmoTRX build verification job for arm

12/07/2017 09:09 AM - laforge

<b>Status:</b> Resolved	<b>Start date:</b> 12/07/2017
<b>Priority:</b> High	<b>Due date:</b>
<b>Assignee:</b> pespin	<b>% Done:</b> 100%
<b>Category:</b>	
<b>Target version:</b>	
<b>Spec Reference:</b>	
<b>Description</b>	
As OsmoTRX contains some neon optimized ARM code, we should test whether this builds (and passes tests, if any?) on those platforms as part of our jenkins verification.	
<b>Related issues:</b>	
Related to OsmoTRX - Bug #2720: arm build comple crash :arm/convert code	<b>Resolved</b> <b>12/07/2017</b>
Related to OsmoTRX - Bug #2826: osmo-trx: different output in convolve test b...	<b>Resolved</b> <b>01/11/2018</b>

### History

#### #1 - 12/07/2017 09:11 AM - laforge

- Related to Bug #2720: arm build comple crash :arm/convert code added

#### #2 - 01/04/2018 10:44 AM - laforge

- Assignee changed from sysmocom to pespin

#### #3 - 01/04/2018 11:10 AM - laforge

- Priority changed from Normal to High

#### #4 - 01/09/2018 07:41 PM - pespin

- Status changed from New to In Progress

So far I cleaned up some parts to remove libsqlite dependency in order to make it easier if we need to cross-compile for ARM with a toolchain.

I also did set up the autotest infra to have tests run during make check, and cleaned the existing test to run nicely with it. I also fixed a UDD socket bug that appeared while doing so.

Next steps:

- Add (if not exist yet) a test to check that the optimized instruction set parts work fine.
- Add script to build qemu machines for the different architectures with optimized instruction set.
- Run the tests in each different arch using make check.

#### #5 - 01/10/2018 06:23 PM - pespin

I pushed some patches which check convolute for x85 (SSSE3 + SSE4.1).

I am now working on adding support to test the NEON ones by using qemu. After some investigation and trials, I found there's 2 main ways of doing it:

- Building debian image with debootstrap into a directory and using chroot + qemu-arm-static to run anything in there (so no real VM running, but enough for our tests I think).
- Building debian image with debootstrap into a directory mounted from an .img file, then running a VM with qemu-arm, and modify the image to run some script we want.

So far, the easiest (and quickest runtime wise) is the first one. The main issue I'm facing right now is trying to remove any root access required to do the job, since it's going to run inside jenkins. debootstrap and chroot require root permissions. I tried using fakechroot+fakeroor as explained here [1], but it has the limitation that it only works if the arch (so loader) is the same both inside and outside the chroot, which is not the case for us. We could make it to work by linking the /lib dir inside the chroot into the outside /etc/qemu-binfmt/arm/ in the jenkins slave, but that's really hacky and difficult to maintain.

I think I'll instead keep using usual chroot and run the script inside a user container using unshare.

Something like: unshare -U prepare\_vm.sh

and prepare\_vm.sh:

```
qemu-debootstrap --foreign --include="linux-image-armmp-lpae,libusb-dev,fakeroot" --arch=armhf stretch qemu-  
img/ http://ftp.de.debian.org/debian/ # requires sudo  
test -f qemu-img/usr/bin/qemu-arm-static || cp "`which qemu-arm-static`" qemu-img/usr/bin/  
chroot qemu-img "/debootstrap/debootstrap --second-stage"  
chroot qemu-img "apt-get update"
```

[1] <https://lists.debian.org/debian-embedded/2011/04/msg00001.html>

#### **#6 - 01/11/2018 05:22 PM - pespin**

- Related to Bug #2826: osmo-trx: different output in convolve test between x86 vs neon vs neon-vfpv4 added

#### **#7 - 01/11/2018 06:53 PM - pespin**

- Status changed from In Progress to Feedback

- % Done changed from 0 to 80

Provided jenkins.sh working locally in <https://gerrit.osmocom.org/#/c/5763/>

Once osmo-ci <https://gerrit.osmocom.org/#/c/5763/> is merged, we can test it in jenkins and once it's working fine, merge it.

#### **#8 - 01/15/2018 04:15 PM - pespin**

I finally enabled some parts in jenkins.sh to download a prebuilt image from somewhere else instead of building it with debootstrap, but still using proot to be able to chroot and run everything in there as a non-root user. I was able to run the complete script (with debootstrap) in my local workstation, but not in debian9-lxc inside buildserver1. In there it fails while configuring systemd pkg which runs "adduser" which runs "chfn" which fails with "PAM: System Error". All I read so far points to a kernel change in 3.15 which changed how AUDIT works inside/outside containers, so it may work if running outside an lxc.

#### **#9 - 01/22/2018 11:55 AM - pespin**

- Status changed from Feedback to Resolved

- % Done changed from 80 to 100

Closing this one, as building for ARM in gerrit/master+jenkins has been ongoing for a few days already. Issue with having the convolve\_test disabled for non x86\_64 is being tracked separately in [#2826](#).