AOSP-RISCV 工具链验证

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构建LLVM工具链的步骤

$ mkdir ~/riscv-android-src-llvm-10/

$ repo init -u git@github.com:riscv-android-src/manifest.git -b riscv-llvm-toolchain-android-10_dev && repo sync

$ cd ~/riscv-android-src-llvm-10 && python toolchain/llvm_android/build.py --no-build lldb

https://github.com/riscv-android-src/toolchain-llvm_android/commit/653851a59d6f56c09e73f44095aee672bf0a966e

https://github.com/riscv-android-src/toolchain-llvm_android/pull/1

用clang构建一个输出Hello, world的程序

$ ./clang --target=riscv64-linux-android
-L/home/luxufan/riscv-android-src-llvm-10/prebuilts/gcc/linux-x86/riscv64/riscv64-linux-android-8.1/lib/gcc/riscv64-linux-android/8.4.0 --sysroot=/home/luxufan/riscv-android-src-llvm-10/out/sysroots/platform/riscv64
hello.c -v -fuse-ld=lld -o hello

clang-11 里面对于Linux会默认使用libgcc.a 作为 runtime library, 同时unwind library 也依赖于 libgcc.a

$ ./clang --target=riscv64-linux-android --rtlib=compiler-rt
--sysroot=/home/luxufan/riscv-android-src-llvm-10/out/sysroots/platform/riscv64 hello.c -v -fuse-ld=lld -o
hello

https://reviews.llvm.org/D96404

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在安卓上运行程序

```
console:/data # [ 2499.665016] init: Received control message 'interface_start' for 'android.
[ 2499.665531] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
[ 2500.559214] init: Received control message 'interface_start' for 'android.hardware.radio@1
[ 2500.587145] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
file[ 2501.643463] init: Received control message 'interface_start' for 'android.hardware.rad
[ 2501.644723] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
./t[ 2502.577528] init: Received control message 'interface_start' for 'android.hardware.rad
e[ 2502.580879] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.inter
st
file ./test            ⬅
[ 2503.685998] init: Received control message 'interface_start' for 'android.hardware.radio@1
[ 2503.694387] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
[ 2504.573399] init: Received control message 'interface_start' for 'android.hardware.radio@1
[ 2504.596246] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
[ 2505.610854] init: Received control message 'interface_start' for 'android.hardware.radio@1
[ 2505.612708] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
[ 2506.635232] init: Received control message 'interface_start' for 'android.hardware.radio@1
[ 2506.689256] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
[ 2507.653135] init: Received control message 'interface_start' for 'android.hardware.radio@1
[ 2507.653650] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
[ 2508.693779] init: Received control message 'interface_start' for 'android.hardware.radio@1
[ 2508.694279] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
./test: ELF shared object, 64-bit LSB riscv, dynamic (/system/bin/linker64)    ⬅
console:/data # [ 2509.687480] init: Received control message 'interface_start' for 'android.
[ 2509.687981] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
[ 2510.717721] init: Received control message 'interface_start' for 'android.hardware.radio@1
[ 2510.718977] init: Could not find 'android.hardware.radio@1.0::IRadio/slot1' for ctl.interf
```

在安卓上运行程序

目前存在的问题

库文件存放的位置没有按照android的标准来，导致编译器不能搜索相关路径。

比如c++头文件的在android中的存放位置：

sysroots/ndk/x86_64/usr/include/c++/v1

但是平头哥的工具链仓库中的c++ 头文件并没有按照这一规则，导致编译器没有正确添加相应的include路径，需要手动添加才可以。